

3<sup>st</sup> International Congress on Social Sciences,  
Innovation and Educational Technologies

August 26-28 2022

Tetova/MACEDONIA

<https://www.icssietcongress.com/icssiet-2022>



# PROCEEDINGS BOOK



**AUGUST 26-28 2022 TETOVA/MACEDONIA**

## ISBN: 978-625-8284-20-1





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# ICSSNET CONGRESS

## 3<sup>st</sup> International Congress on Social Sciences, Innovation and Educational Technologies

**PROCEEDINGS BOOK**

**Editors**

Dr. Enkeleda LULAJ

Dr. Muzammel SHAH

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**Dr. Ramon Hernández de Jesus**

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Chair Business Department  
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**Emil Ağayev Raul**

Azerbaijan State Pedagogical College under  
Azerbaijan State Pedagogical University  
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**GUEST OF HONOUR**  **AUGUST 26-28 2022**

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Centro Universitario Unifacvest

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**GUEST OF HONOUR**  **AUGUST 26 2022**

**Shamsheer Khan**  
Lecturer, Mechanical Engineer, Pakistan

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**KEYNOTE SPEAKER**  **AUGUST 26-28 2022**

**Prof. Dr. Deepa S. Rajesh**  
Executive Director AMET Business School  
AMET University Chennai

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**Dr. D. Rajsekar**  
Director AMET Business School  
AMET University Chennai India

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## CONGRESS PROGRAM



AUGUST 26-28 2022 TETOVA/MACEDONIA







## 3<sup>st</sup> International Congress of Social Sciences, Innovation and Educational Technologies (ICSSIET-2022)

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### CONGRESS PROGRAM

With 58 papers-109 academics/researchers from 84 institutions and 34 countries:

1. TÜRKİYE	2. PHILIPPINES
3. VIETNAM	4. MALAYSIA
5. INDIA	6. TUNISIA
7. UK	8. CHILE
9. SRI LANKA	10. INDONESIA
11. USA	12. BRASIL
13. UZBEKISTAN	14. GEORGIA
15. UKRAINE	16. NORTH MACEDONIA
17. PAKISTAN	18. KOSOVO
19. ITALY	20. FRANCE
21. ALBANIA	22. CANADA
23. SPAIN	24. THE NETHERLANDS
25. OMAN	26. ROMANIA
27. NIGERIA	28. AFRICA
29. MOROCCO	30. AFGHANISTAN
31. IRAN	32. POLAND
33. AZERBAIJAN	34. FINLAND
35. THAILAND	

**Total Participant:** 109

**Presentations will be in** Turkish, English, Arabic, Russian, Persian, French, Italian.

There are 2 virtual conference rooms

The congress was organized according to Turkey time. To calculate the time for your country:

[The World Clock — Worldwide](#)

<b>26 August 2022 Friday</b> <b>09:45-10:00</b>	<b>3<sup>st</sup> International Congress of Social Sciences, Innovation and Educational Technologies (ICSSIET-2022)</b> <b>26 August 2022 10:00 a.m. Istanbul</b> <b>Zoom Meeting</b> <a href="https://us06web.zoom.us/j/89114710003?pwd=Z1l4Ym93b05VS3hkS0Yxd1huRmdnZz09">https://us06web.zoom.us/j/89114710003?pwd=Z1l4Ym93b05VS3hkS0Yxd1huRmdnZz09</a> <b>Meeting ID: 891 1471 0003</b> <b>Password: 443531</b>
	<b>Chairs</b> <b>Prof. Dr. Anjali Awasthi</b> , Concordia University Research Chair CIISE- EV, Concordia University, Montreal/Canada <b>Prof. Dr. Ramon Hernández de Jesus</b> , Invitado por la Universidad Estadual do Piauí/Brasil
	<b>Guest of Honours</b> <b>Prof. Dr. Beatriz Lucia SALVADOR BIZOTTO</b> - Centro Universitário Unifacvest <b>Assist. Prof. Aidin Salamzadeh</b> -University of Tehran Co-founder, GECC The Innovation and Entrepreneurship Research Lab (UK)

	<p><b>Dr. Enakshi Sengupta-</b> Chair Business Department Director Centre for Teaching &amp; Learning American University of Afghanistan/Afghanistan</p> <p><b>Lecturer Engr Shamsher Khan-</b>University of Engineering and Technology Peshawar Pakistan Ph.D Designing &amp; Manufacturing</p>
<p><b>26 August 2022 Friday 10:00-12:30</b></p>	<p><b>Keynote Speakers</b></p> <p><b>Prof. Dr. Ramon Hernández de Jesus-</b> Invitado por la Universidad Estadual do Piauí/Brasil</p> <p><b>Prof. Dr. Joanna Paliszkievicz-</b> Warsaw University of Life Sciences -Management Institute/Poland</p> <p><b>Dr. Aijaz A. Shaikh-</b> Postdoc Researcher, University of Jyväskylä/ Finland</p> <p><b>Prof. Dr. Sandeep Kumar Gupta,</b> AMET Business School, AMET University Chennai/India</p> <p><b>Dr. Deepa Rajesh</b> Excutive Director AMET Business School,AMET University Chennai/India</p> <p><b>Dr. Rajseker-</b> Director AMET Business School/India</p> <p><b>Emil Ağayev Raul</b> - Azerbaijan State Pedagogical college under Azerbaijan State Pedagogical University/Baku/Azerbaijan Title: Triptych "Dedication to Agdam" in the works of Arif Huseynov (in the context of iconographic analysis)</p> <p><b>Assist. Prof. Muzammel Shah-</b> Air University, School of Management (AUSOM), Islamabad</p> <p><b>Maryam Ghiasabadi Farahani-</b> PhD. Business Management Young and Elite Researchers Club, Islamic Azad University, Iraq</p>
	<p><b>Coordinators of the Congress</b></p> <p><b>Assist. Prof. Enkeleda Lulaj,</b> Finance and Accounting, PhD University Haxhi Zeka Kosovo/ Kosovo</p> <p><b>Assoc. Prof. Dr. Isa Spahiu,</b> State University of Tetova - North Macedonia</p>
<p><b>12:30-13:30</b></p>	<p>Coffee Break- Lunch</p>
<p><b>14:00-18:30</b></p>	<p>Online Sessions</p>
<p><b>27 August 2022 Saturday 11:00-15:30</b></p>	<p>Online Sessions</p> <p><b>3<sup>st</sup> International Congress of Social Sciences, Innovation and Educational Technologies (ICSSIET-2022)</b></p> <p><b>Time: August 27, 2022 11:00 AM Istanbul</b></p> <p><a href="https://us06web.zoom.us/j/87338685772?pwd=cG1QTHJuc1FuTGh1b1QwUENPZGNEQT09">https://us06web.zoom.us/j/87338685772?pwd=cG1QTHJuc1FuTGh1b1QwUENPZGNEQT09</a></p> <p><b>Meeting ID: 873 3868 5772</b></p> <p><b>Password: 151710</b></p>
<p><b>28 August 2022 Sunday</b></p>	<p>Closing Session</p>

**Note:** (ICSSIET-2022) congress sessions are to be recorded in accordance to the General Data Protection Regulation (GDPR) and Kişisel Verilerin Korunması Kanunu (KVKK). By joining the congress sessions, you automatically consent to such recordings. If you do not consent to being recorded, discuss your concerns with the host or do not join the congress sessions.

<b>Room-I</b>	<b>Friday, 26 August 2022</b>	<b>Moderator</b>
	<b>14:00-16:00</b>	Dr. Esra S. DONGUL Assist. Prof. Enkeleda LULAJ Md. Harun RASHID
	<b>16:30-18:30</b>	Assist. Prof. Enkeleda LULAJ Md. Harun RASHID
<b>Room-II</b>	<b>Saturday, 27 August 2022</b>	<b>Moderator</b>
	<b>11:00-12:30</b>	Serdar DOVUSKAYA
	<b>13:00-15:30</b>	Serdar DOVUSKAYA

**Friday, 26 August 2022 Room I**

<b>Room-I</b>	<b>Friday, 26 August 14:00-16:00</b>	<b>Moderator</b>	<b>Dr. Esra S. DONGUL Assist. Prof. Enkeleda LULAJ Md. Harun RASHID</b>
<ol style="list-style-type: none"> <li><b>Lian Junxiang</b> -Utilization of Duolingo as A Supplementary Formative Assessment Tool in Primary Year 5 English Class</li> <li><b>Duong Anh Son, Tran Vang-Phu &amp; Luu Hoang Dzung</b>-Situation and Solutions to Improve Agricultural Export Quality in Vietnam</li> <li><b>Rana Majumdar &amp; Shilpi Sharma</b>-Personalized learning using Artificial Intelligence</li> <li><b>Esra S. Döngül</b>-Can Robots Become Managers?A glimpse into the Evolution of Robotics</li> <li><b>Pham Yen Nhi</b>-Social Housing Policy in Vietnam: Analysis and Suggestions</li> <li><b>Monica Mastrantonio, Raveenthiran Vivekanantharasa Raveenthiran Vivekanantharasa &amp; Lidia Martinez</b>-Diversity in Daily Living – an international survey for individual practices</li> <li><b>Marco I. Bonelli</b>-The relationship between multi-nationality and performance in US large capitalization multinational companies</li> <li><b>Javiera Rosell, Feridun Kaya &amp; Alvaro Vergés</b>-Ageism among Turkish Adults: Predictive Role of Some Personal and Emotional Factors</li> <li><b>Feridun Kaya</b>-A Study of Adaptation of Forgiveness Self-Efficacy Scale to Turkish Language</li> <li><b>Medynska Nataliia, Hunko Liudmyla</b>-Formation of the Economic Mechanism of Nature Use in Ukraine”</li> <li><b>Luigi Pio Leonardo Cavaliere, Dr. Valbona Çinaj Ribaj, Melania Riefolo, Luigi Blescia</b>-A Review on Digital Marketing Management During the Pandemic Period</li> <li><b>Md. Harun Rashid, Wang Hui</b>-Discuss the benefits of using literature with ESL students and the various approaches</li> <li><b>Gulshan Sadaf, Maimona Saleem, Fakhira Zaman</b>- Cyber Bullying Solutions in Developing States</li> <li><b>Louie P. Gula</b>-Challenges Encountered by Teachers Handling Oral Speech Communication Courses in the Era of the Covid-19 Pandemic</li> <li><b>Assist. Prof. Mr. Sagar Bhatt</b>-Social Media: Marketing Approaches in Hotel &amp; Restaurant Management in India</li> <li><b>Wei Li</b>- The importance of vocabulary in teaching and learning in applied linguistics</li> <li><b>Dr. Velankanni Alex- Luigi Pio Leonardo Cavaliere</b>- A Constructivist Approach to the Teaching of Mathematics in Secondary School</li> <li><b>Putri Hergianasari, Rizki Amalia Yanuartha, Mr. Luigi Pio Leonardo Cavaliere</b>-Digital Transformation Shapes Post-Covid-19 Geopolitics</li> <li><b>Jahirul Islam, PhD Student</b>- Cultural Hegemony of Indian Subcontinent is Barrier for Women’s Emancipation: an Analysis of Arundhati Roy’s The God of Small Things and Monika Ali’s Brick Lane</li> <li><b>Dr. A. Shameem</b>-CSR initiatives influencing corporate image</li> <li><b>Dr. A. Shameem</b>-Influence of knowledge sharing in social capital dimensions</li> <li><b>Mr. S. Arunkumar</b>-Minimisation of logistical risks with blockchain</li> <li><b>H.G. Hasanov, I.M. Zeynalov</b>-The Role of Meteorological and Geographic Specifications in Formation of Radioactive Precautions</li> </ol>			

<b>16:00-16:30</b>	<b>Coffee BREAK</b>		
<b>Room-I</b>	<b>Friday, 26 August 16:30-18:30</b>	<b>Moderator</b>	<b>Assist. Prof. Enkeleda LULAJ Dr. Muzammel SHAH &amp; Md. Harun RASHID</b>
<ol style="list-style-type: none"> <li>1. <b>Aynura Valiyeva &amp; Thomas Basil John</b>-Successful organizational business communication and its impact on business performance: An intra and inter organizational perspective</li> <li>2. <b>Eze Benneth, PhD</b>- Female Employees' Commitment and Nigerian Deposit Money Banks' Performance</li> <li>3. <b>Mina Ghiasabadi Farahani</b>-The Role of Storytelling in Fostering Children's Thinking and Participatory Learning</li> <li>4. <b>Prince Verma</b>- Assessing the scope of Pro - Poor Tourism in India: A community -based approach for Poverty Alleviation</li> <li>5. <b>Dr. Velankanni Alex, Dr. Ferdin Joe John Joseph, Mr. Luigi Pio Leonardo Cavaliere</b>- Information Technology and its Effect on Mathematics Student's Academic Motivation</li> <li>6. <b>Ajeet Jaiswal</b>-COVID 19: Digital Technologies Vs Socio Technological in the Fight Against</li> <li>7. <b>Quyem Le Thi To, Duyen Nguyen Thi My, Dung Phuong Le</b>- Sustainable Tourism Development in Sam Mountain, Chau Doc City, Vietnam</li> <li>8. <b>Jayrome Lleba Núñez, Marie Camille Cuisia-Villanueva</b>, Overcoming Emotional Isolation in the Distance Education Process</li> <li>9. <b>Dr. Ijaz Yusuf and Manahil Fatima</b>- Conceptual Model for Unveiling the Causes of Inflation using Feedback Loops</li> <li>10. <b>Dr. Shams Ur Rahman, Mr. Jawad Kabir, Mr. Luigi Pio Leonardo Cavaliere, Dr. Afef Khalil-Afraseyab Khattak</b> -Factor Affecting Perceived Benefits from Adoption of International Financial Reporting Standards (IFRS) in Textile Sectors of Pakistan</li> <li>11. <b>Mellouli Amal &amp; Tijani Omar</b> -Internal communication and social performance: The case of Moroccan companies</li> <li>12. <b>Assist. Prof. Saumyabrata Nath, Dr. R. Sangeetha, Ms. Tulika Shetty</b>-Moral Values and Ethics: Imperative to overall development of students</li> <li>13. <b>Chikezie Kalu, Olani Bekele, Simeon Ebhota</b>- Innovative Data Driven Analysis of Water Management for Effective Agricultural Practices</li> <li>14. <b>Novriest Umbu Walangara Nau, Luigi Pio Leonardo Cavaliere, Kristena Esther Angkow, Vicky Joshua</b>-Contending the Border Interest and the Protection of Human Rights: Analysis of the European Union Role to the Migrants Crisis Issues at the Turkey Greece- Border in 2020</li> <li>15. <b>Hasan Basri Tarmizi, Azhar Maksun, Iskandar Muda , Luigi Pio Leonardo Cavaliere, Gustiandi, Muhammad Hirzi</b>-Why is it Control and Auditability so Important in Today's Virtual Environment?</li> <li>16. <b>Iskandar Muda , Erlina, Luigi Pio Leonardo Cavaliere , Siti Arla Anita Suheri Hasibuan, Karina Maharani</b>-The Situation and the Problem with Computer-related Crimes</li> <li>17. <b>Azhar Maksun, Ibnu Austrindanney Sina Azhar, Iskandar Muda, Luigi Pio Leonardo Cavaliere , Nifta Salsabilla, Tiara Surahva</b>-Role of Asynchronous Transfer Method (ATM) on Corporate</li> <li>18. <b>Mutia Ismail, Ibnu Austrindanney Sina Azhar , Iskandar Muda , Luigi Pio Leonardo Cavaliere , Andre Giovanni Febru Tamba, Verchiana Isnata</b>-The Top Ten Reasons for the Start Up of IT Auditing?</li> <li>19. <b>Assist. Prof. Mrs. R.Divyaranjani &amp; Mr.Sreerag R.G, Student</b>-A Study and Analysis of Factors Affecting Chennai Port Operations</li> <li>20. <b>R. Divyaranjani, B.Krishnaveni, Student</b>- Perception and Attitude of Employees Related to Training and Development in Bright Auto Plast Pvt Ltd, Chennai</li> <li>21. <b>R. Divyaranjani, Research Scholar- Madan Mohan.S, Student</b>- A Study on the Production and Export of Mangoes From India</li> <li>22. <b>Prof. Dr.D.Rajasekar, Dr.S.R.Deepa</b>-Empirical study on passenger's perception to fly before and during Covid-19 pandemic – with respect to Chennai Airport</li> </ol>			



**Saturday, 27 August 2022**

**Saturday, 27 August 2022 Room-II**

<b><u>Room-II</u></b>	<b>27 August 2022</b>	<b>Moderator</b>
	<b>11:00-12:30</b>	<b>Serdar DOVUSKAYA</b>
	<b>13:00-15:30</b>	<b>Serdar DOVUSKAYA</b>

**Saturday, 27 August 2022: Room-II**

<u>Room-II</u>	<b>Saturday, 27 August 2022 11:00-12:30</b>	<b>Moderator</b>	<b>Serdar DOVUSKAYA</b>
<ol style="list-style-type: none"><li>1. <b>Meryem Yağmur</b>-Üst Yönetimin Karakteristik Özelliklerinin Büyüme Stratejine Etkisi/The Effect of Senior Management's Characteristics on Growth Strategy</li><li>2. <b>Lecturer, Dr. Asiye Yüksel &amp; Lecturer, Dr. Barış Demir</b>-İnovasyona Yeni Arayışlar: İnovatif ve Matematiksel Okuryazarlık/ New Searches for Innovation: Innovative and Mathematical Literacy</li><li>3. <b>Kadir Gökoğlan &amp; Nazan Güngör Karyağdı</b>-A Study on Auditors; Perceptions of the Added Value of Independent Auditing</li><li>4. <b>Kadir Gökoğlan &amp; Nazan Güngör Karyağdı</b>-The Role of Accounting Professionals in Creating Internal Control</li><li>5. <b>Gül Gümüş</b>-Meslek Lisesi Öğrencilerinin Kariyer Seçimlerindeki Dış Faktörler/External Factors in Career Choices of Vocational High School Students</li><li>6. <b>Emil Raul oğlu Ağayev</b>-Triptych "Dedication to Agdam" in the Works of Arif Huseynov (In the Context of Iconographic Analysis)</li></ol>			

<u>Room-II</u>	<b>Saturday, 27 August 13:00-15:30</b>	<b>Moderator</b>	<b>Serdar DOVUSKAYA</b>
<ol style="list-style-type: none"><li>1. <b>Assist. Prof. Hakan Ulum</b>-Okul Matematiği Müfredatının Odak Noktaları: Doküman İncelemesi</li><li>2. <b>İpeksu Sözüpek &amp; Assoc. Prof. Derya Girgin</b>-Üniversite Öğrencilerinin Covid-19 Pandemi Sürecinde Yapmış Oldukları Sosyal ve Etkin Aktivitelerin belirlenmesi</li><li>3. <b>Dr.Öğr.Üyesi Ümit Şevik</b>-Zorunlu Örgütsel Vatandaşlık Davranışının İş-Aile Çatışması Üzerindeki Etkisinde Aile Dostu İş Programlarının Aracı Rolü</li><li>4. <b>Hilal Dilan Bayram &amp; Assoc. Prof. Derya Girgin</b>-Değişen ve Gelişen Küresel Yaklaşımlar Odağında Eğitim – Öğretim Platformunun Oluşturulması</li><li>5. <b>Ergün Yurtbakan &amp; Durmuş Ekiz</b>- Reflective Diaries of a Primary School Teacher on Reading Difficulty of a Student with Mild Intellectual Disabled, Attention Deficit and Hyperactivity Disorder/ Bir İlkokul Öğretmeninin Hafif Zihin Engelli, Dikkat Eksikliği ve Hiperaktivite Bozukluğu Olan Bir Öğrencinin Okuma Güçlüğü Üzerine Yansıtıcı Günlükleri</li><li>6. <b>İrem Bozbeşparmak</b>-Türkiye’de Sağlık Sektöründe Kullanılan Büyük Verinin Hasta Memnuniyetine Etkisi</li><li>7. <b>Dr. Gökhan Sümer</b>-Türk Bankacılık Sektöründe Katılım Bankacılığının Yeri ve Önemi</li></ol>			

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## Utilization of Duolingo as A Supplementary Formative Assessment Tool in Primary Year 5 English Class

**Lian Junxiang**

SJKC Pin Min, Bidor Stesen,

Perak

Kertas Projek Inovasi

Kategori Individu Sekolah Rendah

### Abstrack

Penggunaan telefon pintar dan komputer dengan sambungan internet semakin memainkan peranan yang amat penting dalam kehidupan kita dan dalam dunia pendidikan, kita juga seharusnya memanfaatkan alat-alat peranti elektronik untuk meningkatkan lagi pembelajaran dan pemudahcaraan (PdPc) dalam bilik darjah. Dalam kajian ini, aplikasi *Duolingo* telah dipilih sebagai inovasi untuk dijadikan alat tambahan penilaian formatif dalam melaksanakan Pentaksiran Bilik Darjah (PBD) Bahasa Inggeris terutamanya dalam era pasca pandemic ini di mana pembelajaran digital dan teradun menjadi semakin penting. Aplikasi *Duolingo* mengintegrasikan keempat-empat kemahiran iaitu kemahiran mendengar, bertutur, membaca dan menulis dalam proses pembelajaran suatu bahasa. Dengan adanya aplikasi ini, tajuk-tajuk tertentu telah dipilih sebagai alat tambahan pentaksiran untuk membantu dalam proses PBD di bilik darjah. Untuk menguji keberkesanan aplikasi tersebut, ujian pra dan ujian pasca yang bersifat kuantitatif dan kualitatif telah diberikan kepada 11 orang murid Tahun 5 di SJKC Pin Min, Bidor Stesen sebelum dan selepas penggunaan aplikasi ini yang dijalankan serentak dengan PdPc di bilik darjah.

### Abstract

The usage of smartphones and computers with the Internet connection has been playing a major role in our daily lives and in the world of education, we should have too utilized the smart devices in order to elevate the process of teaching and learning in the classrooms. In this study, the application, Duolingo has been chosen as the innovation to be used as a supplementary formative assessment tool in School-Based Assessments (SBE) in English language especially in the post-pandemic era where digital and blending learning are becoming more and more important. The app integrates all four skills: listening, speaking, reading, and writing in a language-learning process. With the suitable contents in the app, specific titles had been chosen to go along with the process of teaching and learning, and SBE as a supplementary formative assessment tool. To test the app's efficiency as an assessment tool, a quantitative and qualitative pre-test and post-test had been given to the 11 Year 5 pupils in SJKC Pin Min before and after the usage of the app which went along with the teaching and learning process in the classroom.

**Keywords:** duolingo, primary year, English class





## 1. Introduction

Since *KSSR* has moved away from an exam-oriented education system, teachers are now focusing on School-Based Assessments (SBE) in every subject in primary school for a better holistic overview on students' mastery of skills (MOE, 2012). Pangkuh (2020) stated that learning English is a skill-based learning that requires diverse approaches and techniques, this paper is going to focus on using a language app called 'Duolingo' which is available in both Google Play Store and Apple App Store.

### 1.1. Background of the study

Pandemic COVID-19 has propelled the usage of electronic devices in school and at home due to lockdown measures being implemented in almost all countries since March 2020 (BBC, 2020). Computers, laptops and especially smartphones have seen much increased adoption compared to the pre-pandemic time. Therefore, e-learning or distance learning have become the mandatory component of all educational institutions like schools, colleges, and universities in and around the world (Satishkumar, Radha, Saravanakumar, & Mahalakshimi, 2020). To further enhance the learning with electronic or distance learning, Duolingo has been chosen to be the focus of this study as the app itself has a rating of 4.5 out of a 5-star ranking system from the votes of 12 million users from Google Play Store while it got 4.7 out of a 5-star ranking system in Apple App Store with 1.4 million people using it to learn different languages.

### 1.2. Problem statements

There are many language learning apps out there in different ecosystem. Upon simple checking via Google, there are hundreds to thousands of websites recommending various language learning apps. For example, Lingualift (2022) has listed 10 best language learning apps for 2022 and one of them is Duolingo. They emphasized that Duolingo as the ancestor of gamification of language learning, did a great job of engaging learners who speak different languages, but all these language learning apps suffer from the same Achilles' heel which is learners expect to learn to speak a language while it is not the case most of the time. Users can expect to improve the vocabulary and learn it in a fun way according to the website.

Following the logic of such tight integration of technology into education during the lockdowns, however, it seems counterintuitive to still ban the use of smartphones in most schools (Wong, 2021). Although the author voiced his opinions not based on the usage of technological devices but the need of monitoring parents' children, he did identify the problem of disallowing electronic devices in most schools. The minister of education did mention that a guidance for schools to develop policies and rules to regulate the use of mobile devices in schools in July 2018 but till today, there is no official guidance being released.

Hence, the app itself can only act as a supplementary formative assessment tool alongside SBE and more questions arise.

### 1.3. Research questions

Since there is no real integration of personal electronic devices in school as mentioned above, there might be some hiccups on utilizing Duolingo as a supplementary formative assessment tool. Some critical questions have to be established in order to identify the usefulness and effectiveness of this particular tool. The questions are categorized into three major categories which are contents, utilization, and feeling.





- i. What are the contents of English contained in Duolingo?
  - a. Are the skills contained in Duolingo aligned with the content standards and learning standards listed in *DSKP* Year 5 English for *SJK*?
  - b. Are the topics contained in Duolingo aligned with the content standards and learning standards listed in *DSKP* Year 5 English for *SJK*?
- ii. How to utilize Duolingo as a supplementary formative assessment outside of the classroom?
  - a. How to align the topics in Duolingo with the content standards and learning standards listed in *DSKP* Year 5 English for *SJK*?
  - b. How to assign and make sure the pupils finish the tasks given within the designated period?
  - c. How to assess the pupils by using Duolingo as a supplementary formative assessment?
- i. What are the contents of English contained in Duolingo?
  - a. Are the skills contained in Duolingo aligned with the content standards and learning standards listed in *DSKP* Year 5 English for *SJK*?
  - b. Are the topics contained in Duolingo aligned with the content standards and learning standards listed in *DSKP* Year 5 English for *SJK*?
- ii. How to utilize Duolingo as a supplementary formative assessment outside of the classroom?
  - a. How to align the topics in Duolingo with the content standards and learning standards listed in *DSKP* Year 5 English for *SJK*?
  - b. How to assign and make sure the pupils finish the tasks given within the designated period?
  - c. How to assess the pupils by using Duolingo as a supplementary formative assessment?
- iii. Do pupils like to use Duolingo as one of tools of language learning?
  - a. Which aspect do pupils like/dislike the most?
  - b. Why do the pupils like/dislike the app?
  - c. Do they feel that they have improved their English especially in the aspects of vocabulary and sentence structure after using the app for a while?

#### **1.4. Significance of study**

Since there is a plethora of digital learning apps in most major app stores, it is befuddled to see that there is no real integration of such apps into the classrooms in Malaysia due to mobile devices are still disallowed in most public schools. This contradicts with the findings from Sa'don, Dahlan, & Ibrahim (2014), stating that 87% of the respondents consisting of the major stakeholders (Ministry of Education, teachers, and students) in Malaysia would play an important role in the future of teaching and learning in Malaysian schools. Since then, most schools do not allow students to bring their personal mobile devices to school even in 2022. The researchers also mentioned that 103 (89%) of the respondents are using mobile phone for learning purposes outside their classroom although there was a restriction of bringing the devices to Malaysian schools.



Therefore, it is an utmost importance to consider the integration of personal mobile devices into the learning and assessments alongside the current education because there were many findings and recommendations of previous studies which had confirmed that the integration of mobile devices into the educational systems or at individual level increases the effectiveness of learning albeit specific learning-oriented software programs with educational activities are needed (Sung, Chang, & Liu, 2016).

## 2. Methodology

The study about utilization of Duolingo as a supplementary formative assessment tool in primary Year 5 English class is carried out by using a mixed-mode approach with both quantitative and qualitative data being used for analysis for effectiveness and implications of the said tool in supplementing the school-based assessments in SJKC Pin Min.

### 2.1. Sampling

The application is introduced to Year 5 pupils in SJKC Pin Min. There are 11 pupils in the class with a wide range of mixed capability in English especially after the hiatus of school after the pandemic of COVID-19. Among the 11 pupils, there are 6 males and 5 females. Two pupils just transferred from the other schools and sometime might be needed for them to familiarize with how things work in this very particular classroom. Convenience sampling method was used due to the geographical proximity of the samples with the researcher. In addition, because of the small size of the population used in this study, the outcome is most probably not able to be replicated and generalized into a larger population due to many undesirable variables in the process. However, the processes of carrying out SBE with the content and learning standards from *DSKP* are the same for every school. Hence, utilizing Duolingo as a supplementary assessment tool is a viable option. Do note that Duolingo is aimed for those who want to learn a foreign language by using their native languages. Since the study was carried out in *SJKC (Sekolah Jenis Kebangsaan Cina)*, the native language on the app is Mandarin. Malay and Tamil Languages are not available on the app so this study is not applicable for those who are teaching and studying in both *SK (Sekolah Kebangsaan)* and *SJKT (Sekolah Jenis Kebangsaan Tamil)*.

### 2.2. Innovation used in the study - Duolingo

The chosen application for this paper is Duolingo, an application developed by Duolingo Inc., a public trade company in Nasdaq. It is a language-learning website and mobile app. Heba (2016) stated that Duolingo is an effective method to learning a language because the grammar-translation method which Duolingo uses is very suitable for those who just started to learn a language as the words and phrases are easily translatable. An effectiveness study was done in 2012 and it concluded that the usage for Spanish learning from the app was more effective than the classroom language-learning environment but there is no lack of criticisms about Duolingo such as its ineffectiveness in helping students to develop fluency and real proficiency in a language (Matt, 2022). Even the CEO of Duolingo promised only to get the users to level between advanced beginner and early intermediate. This means if one uses only Duolingo to learn a new language, most certainly one would not achieve to a certain fluency but Duolingo, as suggested by Sacco in Heaney (2019), Duolingo is helpful for learning vocabulary in addition to the immersive learning environment like classrooms.

### 2.3. Overall view of Duolingo

Therefore, Duolingo as what the title of the study has implied, would be used as a supplementary formative assessment tool in conjunction with School-Based Assessments in a classroom environment.



The researcher used Duolingo for Schools as the main interface to monitor the assignments and pupils' progress on completing the assignments. At home, pupils login via the app and complete the given tasks.

The contents in Duolingo are not the same as what consisted in the textbook but since language learning is a skill-based process and not content-based subject (Husain, 2015), hence the differentiation between materials is not something of a concern. In the app itself, all four skills are integrated in all learning processes which being called 'trees'. For English learning in the native language of Chinese, there are 2703 vocabulary, divided into 8 parts with 96 skills together with 261 short stories. Pupils can choose to do the activities according to the trees to unlock more skills or use the short stories to learn about vocabulary and short phrases and sentences.

### 课程概览



**Figure 1.** Overall view of English learning in Duolingo. This figure illustrates the learning aspects of English by using Chinese as the learners' native language.



**Figure 2.** Four skills are integrated within topics. This figure illustrates the activities within topics to engage learners with the four major language-learning skills: listening, speaking, reading, and writing.



**Figure 3.** Short stories in Duolingo. To integrate the language in a narrative context, there are 261 stories in the language to engage learners in a more comprehensive and applicable manner.

#### 2.4. Using Duolingo in the classroom

To make the usage easier for teachers, Duolingo for Schools is being used for monitoring purposes. Instead of letting the individual pupils finish the activities on their own paces, the teacher has used Duolingo for Schools to assign skills and tasks according to what he taught in the classroom. This granted better control over the materials used alongside the contents taught in the classroom.

The interface of Duolingo for Schools looks as below.

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学生 布置作业 报告 设置

姓名	赚取经验	所花时间	最新作业
CHANG CHEE SHEN	620 经验	1hr 39min	0/4 单元
CHLOE CHAI HOE YEE Moe	214 经验	22 min	0/4 单元
IZZAH ZAHRAH BINTI SHARIZAL	87 经验	13 min	0/4 单元
LING YEE LIANG	213 经验	56 min	0/4 单元
Low Lam Lam	0 经验	0 sec	0/4 单元
Muhammad Muhriz	60 经验	11 min	0/4 单元
MUHAMMAD RAYYAN ZACKRY BIN MUH	15 经验	7 min	0/4 单元
Qiqi625	327 经验	1hr 55min	0/4 单元
TEONG LI ZHE	156 经验	36 min	0/4 单元
THU KE XUEN	416 经验	1hr 55min	0/4 单元
YU ZHI FUNG	378 经验	38 min	0/4 单元

**Figure 4.** Duolingo for Schools. This figure illustrates the interface of Duolingo for Schools, used for monitoring pupils' progress of completing the assignments.






## YEAR 5\_SJKC PIN MIN\_2022

学生 布置作业 报告 设置

 全部 ▾

 技能 ▾


 搜索

布置


	4	yogurt, sorry, night, welcome, bye, thanks, napkins
 旅游  已布置	1	passport, please, where is, plane ticket, id, is in, bag
	2	bus, airport, train, station, to, the
	3	excuse me, ticket office, restroom, taxi, name, right here, over there
	4	ticket, money, wallet, what, sir, ma'am, thank

**Figure 5. Skills and vocabulary.** This figure illustrates the skills and vocabulary contained in the skill which is stated in pupils' L1 language (Mandarin). It says 'Travel' for this particular skill.



 描述 2	1	tallest, nicest, easiest, smallest, best, oldest, fastest
	2	most, thing, part, dangerous, meal, exciting, trip
	3	building, pair, funnier, cheaper, longer, richer, younger
	4	biggest, only, banks, closest, colder, China, hard

课程技能	课程	单词
 人 2	1	looks like, short, tall, eye, hair, person, also
	2	look like, who, women, men, people, fat, thin
	3	dad, mom, rich, poor, families, funny, friendly
	4	taller, shorter, than, older, nicer, short hair, long

课程技能	课程	单词
 购物 已布置	1	clothes, store, shirt, pants, new, need, good
	2	jacket, dress, hat, shoes, black, green, blue
	3	skirt, coat, white, socks, warm, cheap, red
	4	boots, expensive, yellow, favorite, brown, gray, pretty

**Figure 6. More skills.** This figure illustrates the selected skills to be used in this study. The four skills are ‘Travel’, ‘Description 2’, ‘People 2’, and ‘Shopping’.






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 乘坐出租车	Bea is in a taxi and keeps giving the driver directions from her phone. He says he doesn't need phone directions because he knows every road in the city. Bea insists and he finally agrees to follow her directions. They end up at a river.
 奥斯卡在洛杉矶	Oscar is visiting his cousin in Los Angeles. Oscar soon discovers that it takes an hour to get pretty much anywhere in the city. He decides to just stay home and watch TV.
 机场假期	Lily is going on a vacation with Zari's family. At the airport, they discover that their flight is going to be delayed. They end up having so much fun at the airport that they don't want to go on their actual vacation.

**Figure 7.** The selected short stories in Duolingo. This figure illustrates the selected short stories which the contents are aligned with Unit 1, 'Towns and cities' in pupils' textbook.



**Figure 8.** Progress monitoring. This figure illustrates the progress of the pupils completing the given assignments.

There is however a minor concern for using Duolingo by asking the pupils to ask their own personal smart devices as digital learning is not a must in the education of Malaysia. Pupils and teachers are encouraged to make use of technology in and out of the classrooms but considering that there are different socio-economics backgrounds for different pupils' family, some of the pupils might not be able to complete the given tasks due to not owning good digital devices which are capable to support the usage of Duolingo because it needs constant internet connection. Although the pandemic has fastened the process of adoption of digital and distance learning, this shall not be taken for granted due to several reasons as mentioned above. The researcher had encouraged the pupils to try their best to complete the given tasks. Post-test's results would be compared with the pre-test with considerations being factored in during the analysis.



### 2.4.1. Contents

As showed on Figure 5, 6, and 7, the four skills are selected in tandem with the contents in Unit 1, ‘Towns and Cities’ in Year 5’s textbook, English Plus 1. In this unit, pupils are shown London and some interesting tourist attractions together with some vocabulary. The further subtopics focus on the contents as follow. A table is shown below for more details about the contents in Unit 1 and chosen skills in Duolingo.

**Table 1.** Contents in Unit 1 of English Plus 1 for Year 5 Primary. This table listed the contents contained in the first unit of the textbook used in Year 5 Primary.

<b>Unit 1 – Towns and Cities</b>
<b><u>Vocabulary</u></b> square, restaurant, school, office building, train station, bridge, café, theatre, sports centre, library, bus station, cinema, shop, park, shopping centre, market, monument, hotel, flat, street
<b><u>Reading</u></b> City on the sea
<b><u>Language focus</u></b> Is there...?, Are there...?, How many...?
<b><u>Vocabulary and listening</u></b> Adjectives (antonym and synonym)
<b><u>Language focus</u></b> Comparative adjectives
<b><u>Speaking</u></b> WH-Questions
<b><u>Writing</u></b> Descriptions

Since English in KSSR (*Kurikulum Standard Sekolah Rendah*) has adopted CEFR (Common European Framework of Reference) as the point of reference, teacher, parents and pupils are having a more coherent standard to evaluate the standards of the users of English. To enhance the mastery of English amongst pupils, Scheme of Work is also provided to guide teachers to plan better lessons. In each lesson, the teachers should focus on one main skill and one complementary skill. At the end of each lesson, teachers will then perform SBE according to the content and learning standards. A table contained content and learning standards for Unit 1 is shown below.



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**Table 2. Content and learning standards.** This table listed the content and learning standards contained in Unit 1, ‘Towns and cities’, provided by the Ministry of Education in Scheme of Work for Year 5 English. The highlighted learning standards are the ones which can be evaluated via the activities in Duolingo.

Lessons	Skills	Content Standards	Learning Standards
9	Main Skill	Listening 1.2 – Understand meaning in a variety of familiar contexts	Listening 1.2.1 – Understand with support the main idea of longer simple texts on a range of familiar topics
	Complementary Skill	Writing 4.2 – Communicate basic information	Writing 4.2.4 – Describe people, places and objects
			of purposes in print and digital media
10	Main Skill	Speaking 2.1 – Communicate simple information intelligibly	Speaking 2.1.5 – Describe people, places and objects using suitable statements
	Complementary Skill	Writing 4.2 – Communicate basic information intelligibly for a range of purposes in print and digital media	Writing 4.2.1 – Give detailed information about themselves





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11	Main Skill	Writing 4.2 – Communicate basic information intelligibly for a range of purposes in print and digital media	Writing 4.2.4 – Describe people, places and objects using suitable statements
	Complementary Skill	Speaking 2.2 – Use appropriate communication strategies	Speaking 2.2.1 – Keep interaction going in short exchanges by asking suitable questions
12	Main Skill	Listening 1.2 – Understand meaning in a variety of familiar contexts	Listening 1.2.2 – Understand with support specific information and details of longer simple texts on a range of familiar topics
	Complementary Skill	Writing 4.3 – Communicate with appropriate language form and style for a range of purposes in print and digital media	Writing 4.3.2 – Spell a range of high frequency words accurately in independent writing
13	Main Skill	Speaking 2.1 – Communicate simple information intelligibly	Speaking 2.1.2 – Find out about and describe experiences up to now
	Complementary Skill	Listening 1.1 – Recognise and reproduce target language sounds	Listening 1.1.1 – Recognise and reproduce with little or no support a wide range of target language phonemes
14	Main Skill	Reading 3.2 – Understand a variety of linear and non-linear print and digital texts by using appropriate reading strategies	Reading 3.2.2 – Understand specific information and details of two paragraphs or more
	Complementary Skill	Writing 4.3 – Communicate with appropriate language form and style for a range of purposes in print and digital media	Writing 4.3.2 – Spell a range of high frequency words accurately in independent writing



17	Main Skill	Reading 3.2 – Understand a variety of linear and non-linear print and digital texts by using appropriate reading strategies	Reading 3.2.4 – Use with support familiar print and digital resources to check meaning
	Complementary Skill	Writing 4.2 – Communicate basic information intelligibly for a range of purposes in print and digital media	Writing 4.2.4 – Describe people, places and objects using suitable statements
18	Main Skill	Writing 4.2 – Communicate basic information intelligibly for a range of purposes in print and digital media	Writing 4.2.5 – Connect sentences into one or two coherent paragraphs using basic coordinating conjunctions and reference pronouns
	Complementary Skill	Speaking 2.1 – Communicate simple information intelligibly	Speaking 2.1.5 – Describe people, places and objects
			using suitable statements

After checking the content and learning standards in *KSSR* Year 5 English, the contents in Duolingo were compared and those contents which are aligned with Unit 1 are selected. This process is called comparative analysis but, in this study, it has been simplified by only comparing the occurrence of related topics (Pickvance, 2001). For ordinary users of Duolingo, they have to do all the skills slowly or skip some of them by doing a placement test. But, for the pupils and the admin of Duolingo for Schools, the skills and contents can be assigned to the pupils accordingly. This enables a more coherent learning and assessment according to the content and learning standards. A table containing the selected skills and titles in Duolingo is shown below.

**Table 3.** *Vocabulary in Duolingo.* This table listed the vocabulary contained in the selected skills in Duolingo which are aligned with the contents in Unit 1, ‘Towns and cities’ in pupils’ textbook.

<b>Duolingo (Listening, speaking, rearrange sentences, matching)</b>
Travel
1. passport, please, where is, plane ticket, id, is in, bag
2. bus, airport, train, station, to, the
3. excuse me, ticket office, restroom, taxi, name, right here, over there
4. ticket, money, wallet, what, sir, ma’am, thank
Description 2



1. tallest, nicest, easiest, smallest, best, oldest, fastest
2. most, thing, part, dangerous, meal, exciting, trip
3. building, pair, funnier, cheaper, longer, richer, younger
4. biggest, only, banks, closest, colder, China, hard

People 2

1. looks like, short, tall, eye, hair, person, also
2. look like, who, women, men, people, fat, thin
3. dad, mom, rich, poor, families, funny, friendly
4. taller, shorter, than, older, nicer, short hair, long

Shopping

1. clothes, store, shirt, pants, new, need, good
2. jacket, dress, hat, shoes, black, green, blue
3. skirt, coat, white, socks, warm, cheap, red
4. boots, expensive, yellow, favorite, brown, gray, pretty

Stories

• Getting on a taxi

Bea is in a taxi and keeps giving the driver directions from her phone. He says he doesn't need phone directions because he knows every road in the city. Bea insists and he finally agrees to follow her directions. They end up at a river.

• Oscar in Los Angeles

Oscar is visiting his cousin in Los Angeles. Oscar soon discovers that it takes an hour to get pretty much anywhere in the city. He decides to just stay home and watch TV.

• Airport Holiday

Lily is going on a vacation with Zari's family. At the airport, they discover that their flight is going to be delayed. They end up having so much fun at the airport that they don't want to go on their actual vacation.

In short, to answer the first research question, Duolingo is suitable to be used as a supplementary formative assessment tool as the topics covered in the app are of a wide range of differences and variety. Teachers must be selective with the topics and make sure the contents are aligned with the content and learning standards so that SBE can be carried out effectively. However, since the Ministry of Education has not made digital devices as a compulsory in the current education system, it will remain as a supplementary teaching aid regardless of the effectiveness and fun learning tool.

#### 2.4.2. Utilization (Manual of operation)

Duolingo is not meant to be used as a standalone learning application in this study. It is meant to support the teaching and learning activities as a supplementary formative assessment tool which it should be used from time to time to learn the vocabulary related to the materials in the classroom. These are the steps of implementing Duolingo in the teaching and learning activities.

I. Plan the teaching and learning activities according to SOW and DSKP.

II. Multiple resources are used as the materials in the classroom: textbooks, Internet materials, YouTube videos, vocabulary in Duolingo.



***Pre-test was given to the pupils before the start of the series of lessons.***

- III. Carry out the teaching and learning activities in the classroom.
- IV. Assess the pupils via different methods: observation, activity and exercise books, and presentations.
- V. Give out PL (Performance Levels) according to the content and learning standards.

***Post-test was given to the pupils after the series of lessons.***

As stated above, to evaluate the effectiveness of the overall teaching and learning activities together with the contents of Duolingo being embedded in the lessons, a pre-test was given to the pupils before the start of the lessons. It contains 10 questions which are adopted from the textbook and Duolingo. However, there is a need to emphasize that this set of questionnaires did not go through a rigorous development and therefore, together with the post-test, the data analyzed might not have enough credibility, validity, and reliability to show that Duolingo is indeed useful as a supplementary formative assessment tool for SBE.

To answer the research questions, aligning the topics with the content and learning standards together with the materials used in the lessons can be done easily via simplified comparative analyses. Nonetheless, there is no way to control the process of pupils finishing the tasks given in Duolingo due to reasons mentioned above. The teacher could only encourage the pupils so that they could finish the tasks given on time. For the last research question in the utilization segment, this would be a daunting task to evaluate Duolingo's usefulness being a supplementary formative assessment tool because firstly, this app does not work as a standalone app in this classroom. It goes along with the teaching and learning activities during school days.

In Figure 9, the teacher incorporated the materials via different learning activities like presentation, action songs, individual and group work. Differentiation strategies are used during the planning and execution due to pupils are of different abilities. To make sure everyone is included in the learning activities while having fun, learning preferences and needs are always being taken into consideration. Different pupils with different capabilities finished the tasks in different time as well so the type and amount of support are also provided accordingly. After the teaching and learning activities being carried out in school, tasks in Duolingo are assigned and pupils have to complete the tasks at home.





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**Figure 9.** Differentiation strategies. This illustrates the implementation of Strategy 5: Differentiate by supporting individual learning preferences and needs. From top left to bottom right: Pupils presenting their works, action songs, individual writing task, group work, and different pupils presenting their works, pupils using Duolingo at home.





Secondly, whether pupils have shown improvement or deterioration in the post-test, there are simply too many independent variables which could contribute to either the improvement or deterioration in the test. More details about this will be discussed in Chapter 3.

### 2.4.3. Feeling

Emotional experiences of students in the classroom are extremely important but they are usually ignored due to its elusive nature of being objectively measured. Ahmed, Werf, & Minnaert (2010) proposed a multimethod qualitative study to measure emotional experiences of the students in classroom by using video stimulated recall interview, nonverbal coding scheme, and appraisal questionnaire to collect the needed data in order to analyze the individual responses towards the learning materials and how emotions affect the students' domain specific and task-specific competence and value beliefs.

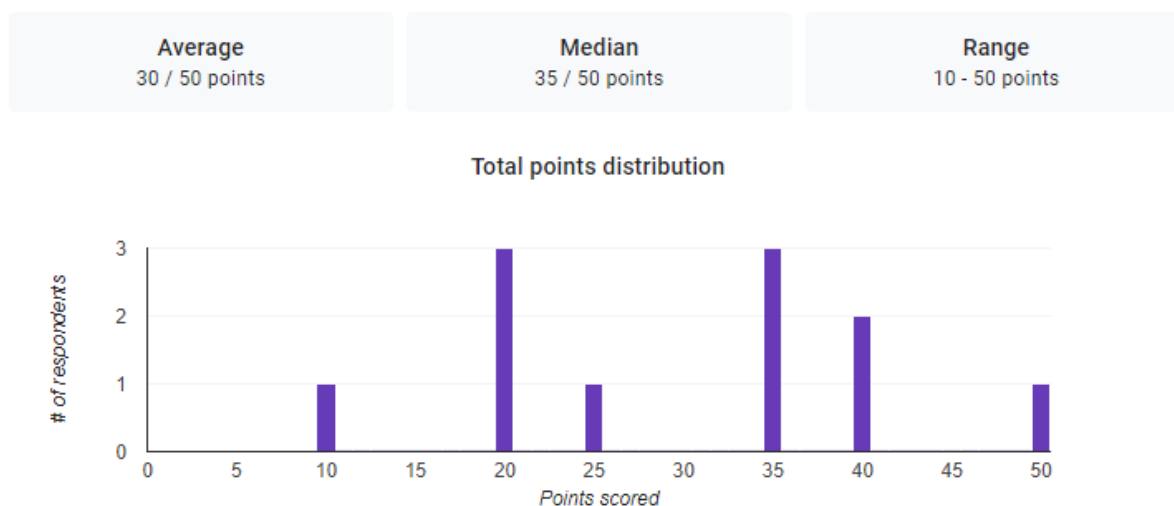
Due to time constraint, a simple questionnaire had been included in the latter part of the post-test for questions related to the pupils' experience when they were using Duolingo for learning English. Analysis is discussed in following chapter.

## 3. Findings and discussions

The analyses of pretest and posttest data are discussed in the latter sections.

### 3.1. Analysis of pretest data

The sample consists of 11 pupils from Year 5 in SJKC Pin Min with 6 males and 5 females. There are 10 questions in total in the questionnaire and a table is shown below to show the sources and types of questions asked in the questionnaire. Google Form was used as an online instrument for the pupils to answer the questions.



**Figure 10.** *Insights of pretest.* This figure illustrates the average, median and range of the points scored by 11 pupils in Year 5.

The pre-test result shows that the pupils of Year 5 are indeed like what had been mentioned above as a class consists of mixed ability pupils with the range of 10 points to full 50 points. Since this is a very



small school and there is only one class for each grade, pupils from different academic backgrounds are placed in the same classroom. However, it is difficult to pinpoint the exact reasons of why a huge disparity between the pupils was there because the variables such as characteristics, intelligence, perception, ability, learning styles and more (Kubat, 2018) exist. More of this will be discussed in the upcoming subchapter.

**Table 4. Types and sources of questions. This table lists out the types and sources of questions asked in the questionnaire.**

No	Questions	Sources	Types												
1	<p>What do you need when you want to travel to another country? 6 / 11 correct responses</p> <table border="1"> <caption>Data for Question 1</caption> <thead> <tr> <th>Response</th> <th>Count</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Bus ticket</td> <td>4</td> <td>36.4%</td> </tr> <tr> <td>✓ Passport</td> <td>6</td> <td>54.5%</td> </tr> <tr> <td>Chinatown</td> <td>1</td> <td>9.1%</td> </tr> </tbody> </table>	Response	Count	Percentage	Bus ticket	4	36.4%	✓ Passport	6	54.5%	Chinatown	1	9.1%	Duolingo	Noun
Response	Count	Percentage													
Bus ticket	4	36.4%													
✓ Passport	6	54.5%													
Chinatown	1	9.1%													
2	<p>Oasis of the Seas is a big _____. 9 / 11 correct responses</p> <table border="1"> <caption>Data for Question 2</caption> <thead> <tr> <th>Response</th> <th>Count</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>train</td> <td>1</td> <td>9.1%</td> </tr> <tr> <td>✓ ship</td> <td>9</td> <td>81.8%</td> </tr> <tr> <td>bus</td> <td>1</td> <td>9.1%</td> </tr> </tbody> </table>	Response	Count	Percentage	train	1	9.1%	✓ ship	9	81.8%	bus	1	9.1%	Textbook	Noun
Response	Count	Percentage													
train	1	9.1%													
✓ ship	9	81.8%													
bus	1	9.1%													

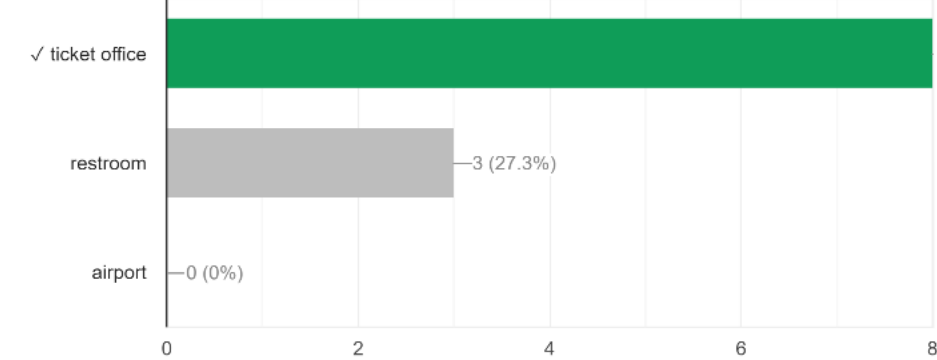
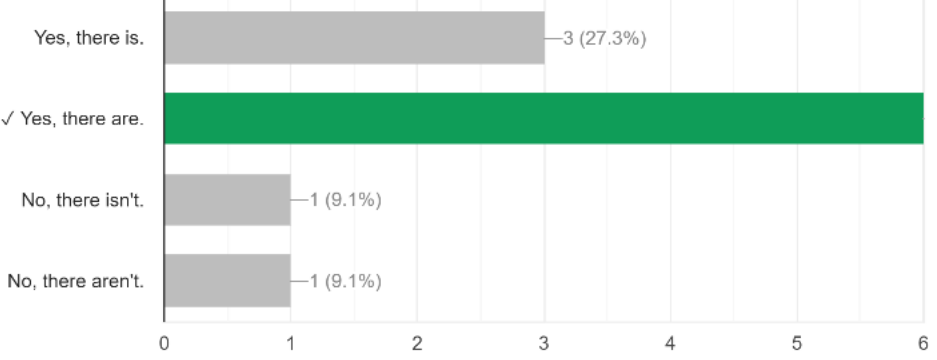
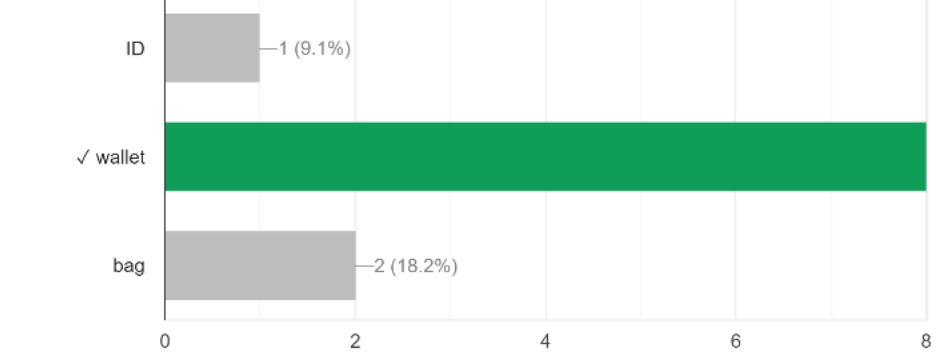


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<p>3</p>	<p>To buy the bus ticket, you will need to visit the _____.</p> <p>8 / 11 correct responses</p>  <table border="1"> <thead> <tr> <th>Response</th> <th>Count</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>✓ ticket office</td> <td>8</td> <td>72.7%</td> </tr> <tr> <td>restroom</td> <td>3</td> <td>27.3%</td> </tr> <tr> <td>airport</td> <td>0</td> <td>0%</td> </tr> </tbody> </table>	Response	Count	Percentage	✓ ticket office	8	72.7%	restroom	3	27.3%	airport	0	0%	<p>Duolingo</p>	<p>Noun</p>			
Response	Count	Percentage																
✓ ticket office	8	72.7%																
restroom	3	27.3%																
airport	0	0%																
<p>4</p>	<p>Are there any taxis in the picture above?</p> <p>6 / 11 correct responses</p>  <table border="1"> <thead> <tr> <th>Response</th> <th>Count</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>✓ Yes, there are.</td> <td>6</td> <td>54.5%</td> </tr> <tr> <td>Yes, there is.</td> <td>3</td> <td>27.3%</td> </tr> <tr> <td>No, there isn't.</td> <td>1</td> <td>9.1%</td> </tr> <tr> <td>No, there aren't.</td> <td>1</td> <td>9.1%</td> </tr> </tbody> </table>	Response	Count	Percentage	✓ Yes, there are.	6	54.5%	Yes, there is.	3	27.3%	No, there isn't.	1	9.1%	No, there aren't.	1	9.1%	<p>Textbook</p>	<p>WH-Questions</p>
Response	Count	Percentage																
✓ Yes, there are.	6	54.5%																
Yes, there is.	3	27.3%																
No, there isn't.	1	9.1%																
No, there aren't.	1	9.1%																
<p>5</p>	<p>I forgot to bring my _____ so I cannot buy anything from the restaurant.</p> <p>8 / 11 correct responses</p>  <table border="1"> <thead> <tr> <th>Response</th> <th>Count</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>✓ wallet</td> <td>8</td> <td>72.7%</td> </tr> <tr> <td>bag</td> <td>2</td> <td>18.2%</td> </tr> <tr> <td>ID</td> <td>1</td> <td>9.1%</td> </tr> </tbody> </table>	Response	Count	Percentage	✓ wallet	8	72.7%	bag	2	18.2%	ID	1	9.1%	<p>Duolingo</p>	<p>Noun</p>			
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ID	1	9.1%																



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6	<p>_____ any trees in your town or city?</p> <p>3 / 11 correct responses</p> <table border="1"> <thead> <tr> <th>Response</th> <th>Count</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>✓ Are there</td> <td>3</td> <td>27.3%</td> </tr> <tr> <td>Is there</td> <td>6</td> <td>54.5%</td> </tr> <tr> <td>How many</td> <td>2</td> <td>18.2%</td> </tr> </tbody> </table>	Response	Count	Percentage	✓ Are there	3	27.3%	Is there	6	54.5%	How many	2	18.2%	Textbook	Pronoun (Questions)
Response	Count	Percentage													
✓ Are there	3	27.3%													
Is there	6	54.5%													
How many	2	18.2%													
7	<p>New York is _____ than Washington.</p> <p>7 / 10 correct responses</p> <table border="1"> <thead> <tr> <th>Response</th> <th>Count</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>most expensive</td> <td>1</td> <td>10%</td> </tr> <tr> <td>✓ bigger</td> <td>7</td> <td>70%</td> </tr> <tr> <td>tallest</td> <td>2</td> <td>20%</td> </tr> </tbody> </table>	Response	Count	Percentage	most expensive	1	10%	✓ bigger	7	70%	tallest	2	20%	Textbook/Duolingo	Comparative Adjectives
Response	Count	Percentage													
most expensive	1	10%													
✓ bigger	7	70%													
tallest	2	20%													



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8	<p>A: _____, how far is the bus station from here? B: It's about ten minutes on foot. A: I see. Thank you. B: _____.</p> <p>5 / 11 correct responses</p> <table border="1"> <thead> <tr> <th>Response</th> <th>Count</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Hi, Thanks for your help</td> <td>6</td> <td>54.5%</td> </tr> <tr> <td>✓ Excuse me, You're welcome.</td> <td>5</td> <td>45.5%</td> </tr> <tr> <td>Sorry, I'm so sorry.</td> <td>0</td> <td>0%</td> </tr> </tbody> </table>	Response	Count	Percentage	Hi, Thanks for your help	6	54.5%	✓ Excuse me, You're welcome.	5	45.5%	Sorry, I'm so sorry.	0	0%	Textbook	Question and answer
Response	Count	Percentage													
Hi, Thanks for your help	6	54.5%													
✓ Excuse me, You're welcome.	5	45.5%													
Sorry, I'm so sorry.	0	0%													
9	<p>Is Ipoh bigger than Kuala Lumpur?</p> <p>7 / 11 correct responses</p> <table border="1"> <thead> <tr> <th>Response</th> <th>Count</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Yes, it is.</td> <td>4</td> <td>36.4%</td> </tr> <tr> <td>✓ No, it isn't.</td> <td>7</td> <td>63.6%</td> </tr> </tbody> </table>	Response	Count	Percentage	Yes, it is.	4	36.4%	✓ No, it isn't.	7	63.6%	Textbook	Question and answer			
Response	Count	Percentage													
Yes, it is.	4	36.4%													
✓ No, it isn't.	7	63.6%													



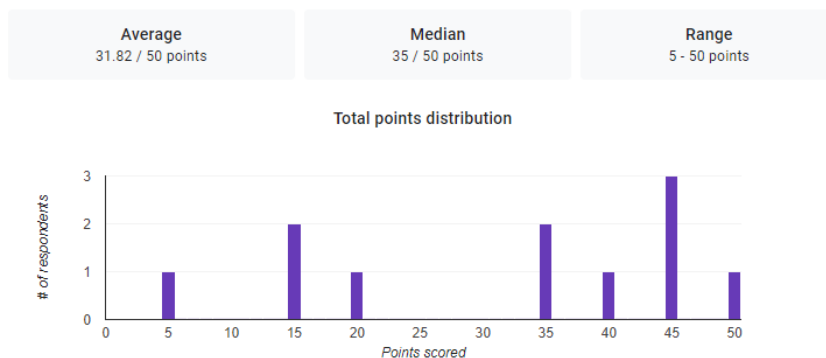
10	<p>What are some of the favourite food available in Ipoh? 7 / 11 correct responses</p> <table border="1" style="margin-top: 10px;"> <caption>Food Preferences Data</caption> <thead> <tr> <th>Food Item</th> <th>Count</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>✓ white coffee, white rice noodle with chicken and bean sprouts, and Nasi Vaggey</td> <td>7</td> <td>63.6%</td> </tr> <tr> <td>chicken chop, fish and chips, and beef steak</td> <td>2</td> <td>18.2%</td> </tr> <tr> <td>latte, avocado toast, and chicken burger with bean sprouts</td> <td>2</td> <td>18.2%</td> </tr> </tbody> </table>	Food Item	Count	Percentage	✓ white coffee, white rice noodle with chicken and bean sprouts, and Nasi Vaggey	7	63.6%	chicken chop, fish and chips, and beef steak	2	18.2%	latte, avocado toast, and chicken burger with bean sprouts	2	18.2%	Textbook	Noun
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Most of the materials contained in this questionnaire had already been taught in previous years and if some of the pupils have good foundation of English, even without learning the materials from the textbook or Duolingo, he or she can still score with excellence like what had one pupil did in this questionnaire. Questionnaire is the inability to test out the skills of listening, speaking, and writing due to many reasons which will be discussed in latter subchapter. Out of 11 pupils, 6 pupils obtained an average score of 30 out of 50. There are two extremes on the spectrum. One pupil got 10 out of 50 and another one obtained a perfect 50. This shows that pupils' background contributed to such differences in the knowledge.

### 3.2. Analysis of posttest data

The posttest was done two weeks after the initial pretest.

#### Insights



**Figure 11. Insights of posttest.** This figure illustrates This illustrates the average, median and range of the points scored by 11 pupils in Year 5.





By comparing the results of posttest with pretest, an improvement of 1.82 point was seen in the average point. The usage of Duolingo started a week before the study was carried out and within the span of two weeks, posttest was given to them.

This marks the lack of time as one of the reasons of why there was only a small improvement in the average points.

There was no subject scoring 5 in the pretest but in the posttest, there was a subject who scored a 5-point.

To identify the correlation between the pupils, their performance level and time spent in Duolingo, the data of such is also included in the comparison of both pretest and posttest which is shown in a table below.

**Table 5. Comparison between pretest and posttest. This table compares the results of points pupils obtained in both pretest and posttest together with the time spent in Duolingo and Take off Values (TOV) of Performance Level (PL) from last semester's School-based Assessments (SBE).**

Names	Points of pretest	Points of posttest	Difference	Time Spent in Duolingo	TOV (SBE - PL)
Chang Lim Jensen (C)	40	45	+5	3hr 22min	5
Chloe Chai Hoe Yee (C)	35	45	+10	3hr 3min	4
Elaine Tan Zhi Qi (C)	50	45	-5	3hr 26min	4
Izzah Zahrah b. Sharizal (M)	35	35	0	56 min	4
Ling Yee Liang (C)	20	15	-5	58 min	3
Muhammad Muhkriz b. Jasni (M)*	10	20	+10	11 min	2
Teong Li Zhe (C)	25	35	+10	2hr 14min	4
Thu Ke Xuen (C)	40	50	+10	3hr 55min	5
Yu Zhi Fung (C)	20	15	-5	3hr 17min	4
<b>Low Lam Lam (C)*</b>	<b>20</b>	<b>5</b>	<b>-15</b>	<b>0sec</b>	<b>2</b>
Muhammad Rayyan Zackry b. Muhammad Safri (M)	35	40	+5	7 min	3

Upon simple comparison between pretest and posttest, there are indeed improvements for 6 out of 11 pupils with the range of +5 and +10 in the posttest. 1 pupil remained the same in the score while 3 pupils saw a drop of 5 points (-5) in the test. There is one outlier who saw a -15 drop in the posttest. While looking at the time spent in Duolingo, the ones who are labelled with dark green spent around 2 to 3 hours within the period of pretest and posttest. Two of the pupils labelled with lighter shades of green



spent around an hour and there are 2 pupils who spent only around 10 minutes on the app. The outlier did not use the app at all within the two weeks.

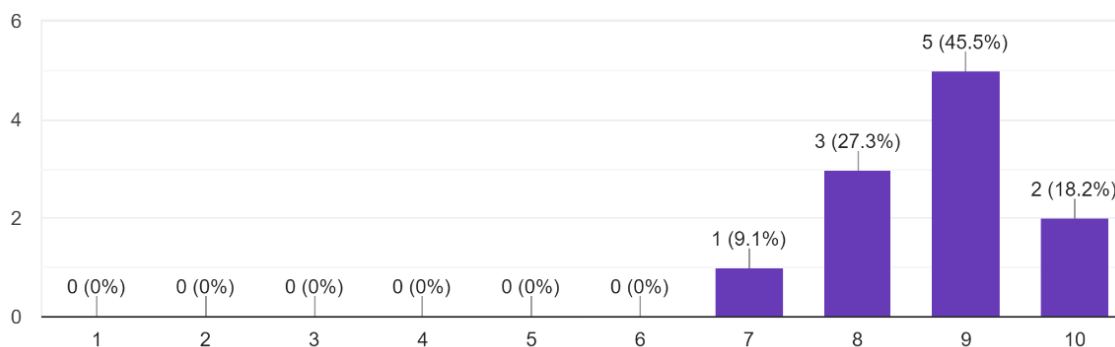
To understand this, the researcher conducted a simple interview with the pupils. The pupils who are labelled with \* just transferred to this school in March 2022, since the researcher only uses English in the classroom, they said that they did not understand the instructions. They need help from the other pupils in the classroom to understand. But this is not easy for them as they still need more time to familiarize with the new learning environment. Interactions between the new and old pupils are still considered limited, observed by the researcher and the other teachers in the class. While not everyone was comfortable with the usage of English only policy in the classroom, other pupils are not shy to always seek for help since the researcher has been teaching them English since Year 1. They know that native language is not used at all during the instructional hours. Hence, this might be the reason of why the pupils labelled with \* spent the least time in Duolingo because they do not think that using Duolingo is part of the learning process after the class. They too might not be familiar with the concept of flipped and blended classroom prior to transferring to this school. As shown in Figure 9, multiapproach-method instructions are being used alternately since Year 1 between classes and pupils are always encouraged to take charge of the learning process after the initial brief lecture and explanation of the activities. The unfamiliarity might contribute to such occurrence in the lack of use of Duolingo as well as the shyness seen during the class activities. More time is needed for them to warm up. The previous PLs for both the pupils labelled with \* also showed that they need more guidance in the subject of English.

There are two old pupils in the class obtained a score lower than 20 too but they got a PL of 3 and 4 respectively. This showed that the impact of Duolingo might not be as huge as the initial hypotheses suggested. Also, this rebutted the idea of newly transferred pupils being not familiar with the learning environment and methods used in the classroom.

A second part had been added in the posttest to identify the feeling aspect of using Duolingo itself. Four questions were asked with one being a scale, two being multiple-choice questions and the last one being a short answer.

On a scale from 1 to 10, do you like to use Duolingo?

11 responses



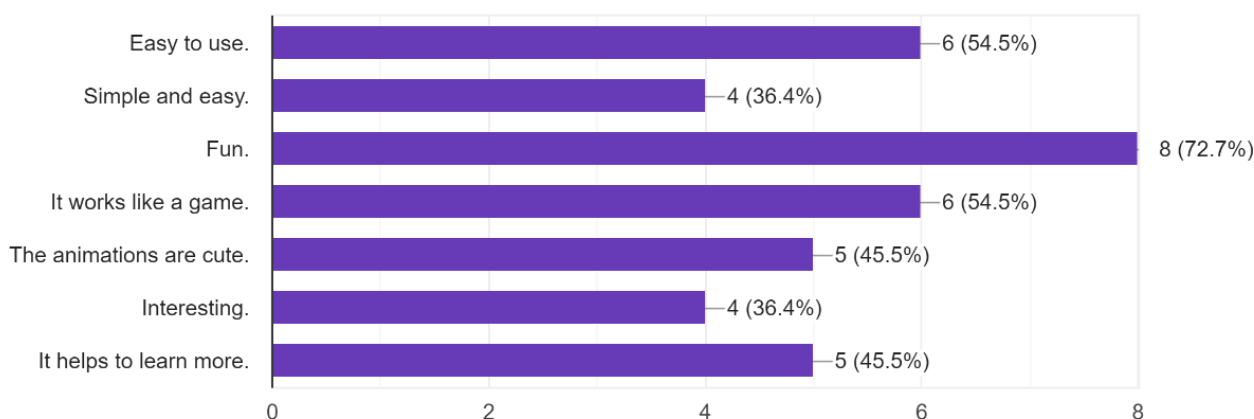
**Figure 12. Pupils' fondness towards using Duolingo. This figure illustrates whether pupils like using Duolingo or not.**



From the graph using a scale from 0 to 10, it can clearly be seen that all eleven pupils in Year 5 like using Duolingo as a learning app and have a positive attitude towards using it at home. In Figure 13 and 14, reasons of liking and disliking Duolingo were shown and pupils picked their choices of reasons.

What do you like about Duolingo? (Multiple choices are allowed.)

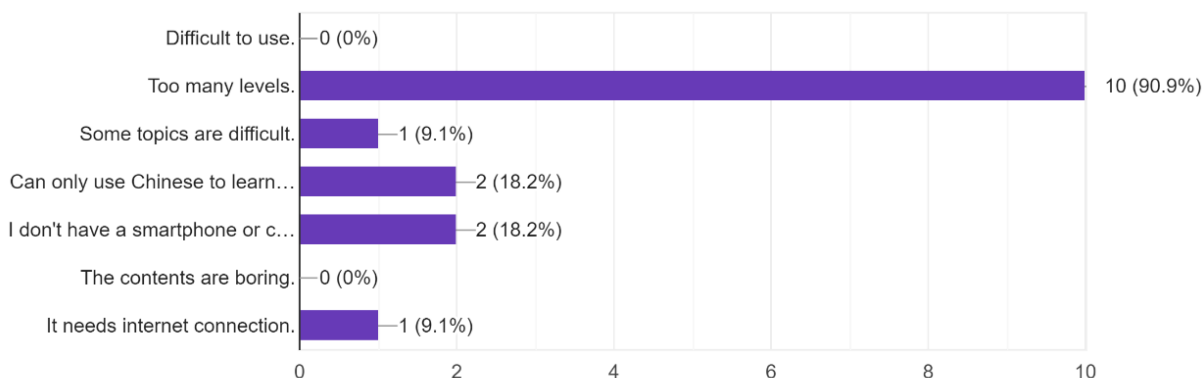
11 responses



**Figure 13. Reasons of pupils liking Duolingo. This figure illustrates the seven reasons why might someone likes using Duolingo.**

What do you not like about Duolingo? (Multiple choices are allowed.)

11 responses

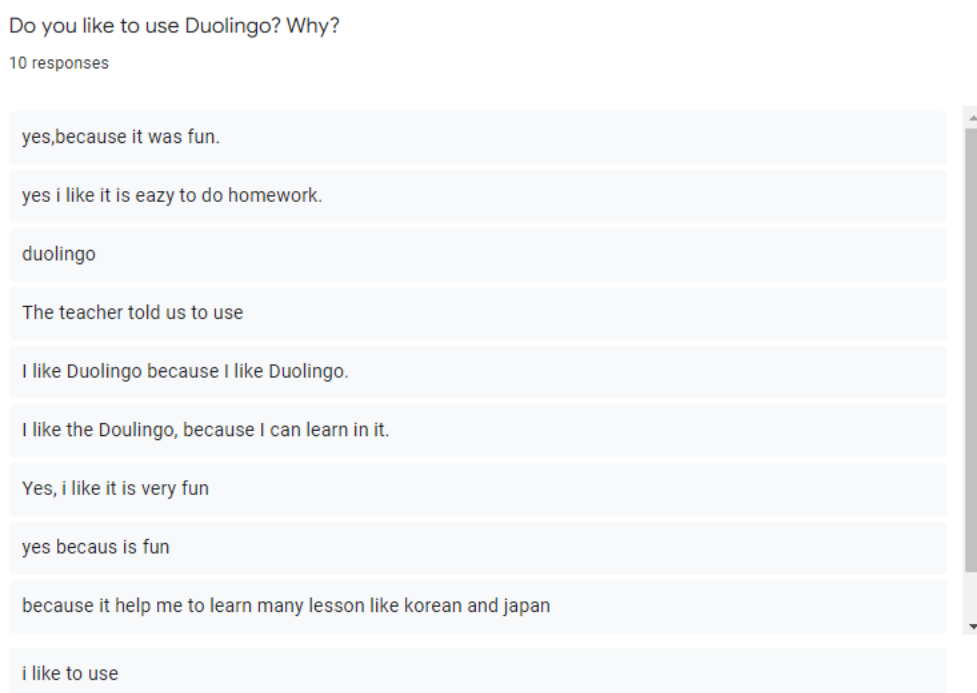


**Figure 14. Reasons of pupils disliking Duolingo. This figure illustrates the seven reasons why might someone dislikes using Duolingo.**

Fun is clearly the main reason of why pupils of Year 5 liking the app. Duolingo is indeed designed using gamification by using leaderboard and leagues, experience points, progress bars and streaks to encourage users to keep on learning using the app (Bilham, 2021). Other reasons of fondness include



easy to use and it works like a game. Hence, it can be concluded that gamification in learning encourages learning. However, there was one answer stood out in Figure 14 which was the reasons of disliking the app. 10 pupils felt that Duolingo has way too many levels and they might be overwhelmed by it. Rushing through seven topics in two weeks might pressure them. Do note that two pupils picked ‘Can only use Chinese to learn English’ as one of their reasons of disliking it. Upon checking the questionnaire, the Malay pupils had chosen this answer and it was understandable as Chinese is not their native language. By using Chinese to learn English, they are using one difficult language to learn another difficult language and that was why the low utilization of Duolingo of the Malay pupils in terms of time spent in the app which was shown in Table 5. Not having a smartphone and computer is also one of the inconveniences. After checking with the pupils, they used their parents’ smartphone to finish their tasks on Duolingo and the one pupil with 0 minute on Duolingo did not even get their chance to install an extra app on her parents’ phones because the storage was full, she said.



**Figure 15. Short answers of pupils liking or disliking Duolingo. This figure illustrates the short answers given by the pupils about whether they like Duolingo or not.**

10 pupils wrote short answers and expressed whether they like using Duolingo or not. This gives them a chance to express their own ideas. Most answered fun as their main reason liking the app. Two answers stood out, being ‘The teacher told us to use’ and ‘because it help me to learn many lesson like korean and japan’. Indeed, the researcher did ask the pupils to use the app for learning English in Chinese, so, technically, he was right. He did say that it was okay to use Duolingo to learn but he only used Duolingo for less than an hour in the span of two weeks. The other pupil said that using the app gives her the chance to learn other languages and after a short interview with her, she is indeed exploring the app herself and learning Korean and Japanese at the same time. She enjoyed using the app, she said. One



pupil did not attempt to write an answer for this because she said that she did not know how to make a sentence using her own words. Her PL showed that she needs more guidance in learning the language.

### 3.3. Limitations of the study

This is a quasi-experimental approach with no control group to identify the effectiveness of the chosen application being a supplementary formative tool in SBE. Not only that, the convenience sampling and small-sized population also made it difficult for the results to be generalized into a bigger population to show that Duolingo is helpful to improve pupil's language ability and being an effective tool in helping the teacher to carry out SBE in school.

The time constrain also limits the possible effectiveness of Duolingo in helping pupils to improve their English. In order to make this study better in the future, a paired samples t test can be used and a bigger sample size which can be randomized should be used to increase the reliability of the future study.

### 3.4. Conclusions

Based on the analysis of the pretest and posttest administered in the duration of two weeks, there is a slight improvement in average point amongst the eleven pupils in Year 5. Besides, all of them also showed a fondness in using the application to learn not only English and other languages as well. This shows that the gamification of the app in learning languages is a positive direction to encourage learning languages. Due to the limitation of personal smart devices in school, it might cause a problem on the full potential of utilization of such apps and devices in helping the pupils to learn. Therefore, MOE can consider publishing a guideline for usage of personal smart devices in schools because smart devices are everywhere in our lives right now. Since personal technology helps to increase efficiency in almost every other field, education should also embrace the change especially in the post-pandemic era.



*Figure 16. Video presentation of paper.*



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## **Situation And Solutions To Improve Agricultural Export Quality In Vietnam**

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### **Abstract**

Since 1991, Vietnam has established a number of significant agricultural exports. Rice, vegetables, coffee, tea, rubber, and cashew nuts are among the items still available. These are items that not only have a high export turnover to Vietnam, but also have a significant market share in the global market. Agriculture production and export have contributed to Vietnam's economic growth and social stability. However, in terms of long-term development, agricultural production and export development in Vietnam remains inadequate, has been, and is threatening the country's economic, social, and environmental stability.

**Keywords:** Solutions, high quality, development strategy, agricultural products, Vietnam

### **1. Introduction**

With a history of development dating back to the wet rice civilization, thousands of years of agricultural production have resulted in Vietnamese people who are easy to integrate with nature and understand how to adapt and respond to the natural environment for living and production. Furthermore, with favorable climate conditions



for agricultural production and a large agricultural land area of more than 27 million hectares (Ministry of Natural Resources and Environment, 2017), the agriculture-forestry-fishery sector employs approximately 17.5 million people aged 15 and up (General Statistics Office, 2021). As a result, Vietnam possesses the strengths and potential to develop its agricultural industry. During the previous economic downturn, the agricultural sector demonstrated its critical role and position in the national economy by maintaining domestic production and increasing exports to support other economic sectors (Dang Kim Son et al., 2014).

However, with importing countries' current trend of lowering tariff barriers and strengthening non-tariff barriers (sanitary and epidemiological barriers, trade-related technical barriers, and so on), Vietnam's agricultural products face numerous significant challenges. For example, in the first half of 2019, many shipments of agricultural and aquatic products from Vietnam were returned by Japan (Dao Tho, 2019) and the European Union (EU) (Bach Hue, 2019) because they did not meet the standards for maximum pesticide residue levels, food safety, and so on.

China not only raised the quality standards of imported agricultural products in the Asian market, but also strengthened management and tightened border trade. Japan and Korea also review and adjust food safety regulations on a regular basis, as well as increase the frequency of inspection of imported agricultural and aquatic products, which is detrimental to Vietnam's exports to foreign markets (Dieu Oanh, 2019). Furthermore, when analyzing the current situation of Vietnam's agricultural exports to international markets, Ms. Vu Thi Kim Hanh, Chairwoman of the Association of High-Quality Vietnamese Products, stated that only 5% of Vietnam's agricultural exports met international standards and were official exports to specific markets such as the United States, Europe, Japan, and South Korea (Ai Van, 2018).

Furthermore, according to the World Trade Organization's Trade Policy Review Body's Report of July 8, 2019, importing countries are currently using many import restrictions; these restrictions are estimated to have a trade impact of 339.5 billion USD,



the second-highest figure after 588.3 billion USD in the previous period. The report also shows that there has been a sudden increase in trade-restrictive measures from importing countries since mid-2017 (WTO-Trade Policy Review Body, 2019). According to the report, non-tariff barriers on sanitary and phytosanitary issues are the most commonly used non-tariff measures on agricultural products. As a result, it is critical to sustainably improve the quality of Vietnam's agricultural exports in order to increase their value and competitiveness in the international market.

## **2. Agricultural product export situation**

Agricultural products will be the most important export item in Vietnam's total export turnover in 2020, setting a new high of 41.2 billion USD. Vietnam's rice exports have set a new high, averaging around \$500 USD per ton. Although export volume decreased by 3.5 percent, turnover increased by 9.3 percent to more than 3 billion USD in 2020. In export categories, high-quality rice accounted for 85 percent of the export proportion. White rice accounted for 40.7 percent of total turnover; jasmine rice and fragrant rice accounted for 37.6 percent; sticky rice accounted for 17.4 percent; and Japonica rice and Japanese rice varieties accounted for 4.2 percent (as of November 2020) (InnovativeHub, 2020).

Furthermore, the Ministry of Agriculture and Rural Development estimates that the export turnover of agricultural, forestry, and fishery products in the first two months of 2021 will be \$6.17 billion USD, a 16.6 percent increase over the same period in 2020. In which the export value of primary agricultural products increased by 19.0 percent to around 3.14 billion USD; the livestock group increased by 13.8 percent to 52 million USD; seafood increased by 0.7 percent to more than one billion USD; and the leading forest product group increased by 50.1 percent to more than 2.6 billion USD over the same period in 2020. In terms of the export market, the value of export turnover to the US reached approximately 2.04 billion USD in the first two months, representing a 57.3 percent increase over the same period and accounting for approximately 33.05 percent market share. China follows, with an estimated 1.88 billion USD, up 57.9 percent over



the same period and accounting for 30.53 percent of the market; the EU reached 594 million USD; Japan reached USD 573 million, up 15.5 percent; and Korea reached approximately 410 million USD, up 18 percent.

Aside from the obvious result that our country's export turnover of agricultural, forestry, and fishery products continues to grow despite the fact that the Covid-19 epidemic continues to harm global trade in goods, a The main highlight is that the United States has surpassed China to become Vietnam's largest export market share. Along with solid turnover growth figures in the EU, Japan, and Korea markets, Vietnam's agricultural industry has made a clear shift to gain access to high-quality markets. At the same time, the above findings demonstrate that Vietnam's agricultural, forestry, and fishery products are trustworthy, confirming their quality, food safety, and hygiene; they meet the strictest standards of many countries around the world.

However, Vietnam's export products to the US market continue to be primarily wood, wood products, rubber, cashew nuts... and a variety of other products such as rice and fruit. While these are vital products of Vietnam and attract a relatively large labor force, output is low and export turnover is still limited. The reason for this is that there aren't many products in these product categories that meet the quality and criteria for export to the US market. The demand for agricultural products in the United States is enormous. As a result, improving product quality based on application is still required to diversify agricultural products exportable to high-quality markets such as the US, EU, and Japan. Good agricultural practices to achieve VietGAP, GlobalGAP, and each importing country's specific certifications (Tien Anh, 2021).

### **3. Orientation toward developing high-quality agriculture and improving agricultural product quality for export**

Vietnam, as an agricultural country, has the potential and advantages in agricultural production for producing and exporting agricultural products. The first is about land: pursuant to Article 1 of Decision No. 1435/QĐ-BTNMT dated July 22, 2021, the Minister of Natural Resources and Environment approved and announced the





results of the 2019 land inventory, calculating As of December 31, 2019, Vietnam had nearly 28 million hectares of agricultural land, but only about 65 percent of the agricultural land fund was in use, with the remainder being natural grassland and water surface. Vietnam's soil quality is generally good, with a thick layer, a porous texture, and plenty of nutrients for plants, particularly alluvium. These conditions, when combined with an abundant moist heat source, will be favorable for the development of the agricultural industry. The second point is about climate: Vietnam has a tropical monsoon climate due to the Asian monsoon regime's profound influence. It is an advantageous situation for Vietnam to diversify its crops. Furthermore, with year-round humidity of more than 80% and heavy rainfall (an average of 1800-2000mm/year), these are favorable conditions for the growth and development of plants and animals, particularly for many crops such as rice, fruit trees, coffee, cashew, rubber... The third point is about human resources: with a population of more than 90 million people and a young population structure, the total number of employees aged 15 and over in 2020 is 53.4 million, with 17.5 million working in the agriculture, forestry, and fishery sectors (GSO, 2021). At the same time, with a long tradition in agricultural production, Vietnamese workers have amassed a wealth of experience and farming techniques, creating favorable conditions for Vietnam to develop an advanced manufacturing industry and modern agriculture... producing a large amount of agricultural products for domestic consumption and export.

Because of the agricultural industry's above-mentioned potentials and strengths, it is necessary to improve the legal regulations governing agricultural product quality so that Vietnamese agricultural products can meet the import standards of developed countries. Furthermore, promoting agricultural product exports in terms of both output and export value will assist farmers and small and medium-sized production enterprises in developing products that meet international health and safety standards (European Parliament, 2021). It increases access to new markets, resulting in higher incomes, jobs, and economic opportunities, particularly for women (WTO, 2021).



Based on this situation, the Communist Party of Vietnam's 12th Congress established the direction and task for agricultural and rural economic development as "Building agriculture in the direction of large commodity production; applying technology to improve product quality; ensuring food safety and hygiene; increasing added value; boosting exports" and "accelerate the restructuring of the agricultural sector; building ecological agriculture with comprehensive development." Concentrate on investing in critical agricultural production areas, implementing appropriate policies to accumulate and concentrate land, attracting significant investment resources for agricultural development, and gradually forming hi-tech agriculture-industry-service complexes" (Communist Party of Vietnam, 2016).

Following the development strategy of the 12th Party Congress, the 13th Party Congress clearly defined Vietnam's future development direction as "developing high-tech, high-value-added, environmentally friendly products, effectively participating in global production networks and value chains" (Communist Party of Vietnam, 2021a) and "stepping up agricultural restraint" (Communist Party of Vietnam, 2021b). The Ministry of Agriculture and Rural Development has determined that "agricultural production and business develop effectively and sustainably in the direction of promoting comparative advantages, increasing productivity, increasing quality, increasing added value, ensuring food hygiene and safety, protecting the environment, ensuring food security, and meeting the increasing needs" in the Strategy for Agriculture and Rural Development for the period 2011-2020. (Ministry of Agriculture and Rural Development, 2009). As a result, in order to create a favorable legal corridor for agricultural economic activities in Vietnam, the above agricultural development policy must be institutionalized.

#### **4. Recommendations for long-term agricultural development**

The Communist Party of Vietnam's development orientation is stated in the Document of the 13th Party Congress as "constantly strengthening national economic potential, multilateralizing and diversifying international economic relations, avoiding



dependence on one market, one partner [...]." Promote agricultural restructuring, exploitation and application of tropical agriculture's advantages, development of large-scale concentrated commodity agriculture toward modernity, area specializing in high-quality goods. "Strongly develop high-tech applied agriculture, organic agriculture, and ecological agriculture while meeting common food safety standards" (Communist Party of Vietnam, 2021b) to improve agricultural product quality. The author suggests the following solutions for export:

To begin, a chain of linkages must be established between agricultural product production and export, as well as consumption market orientation and supporting policies that must be practical and effective. Before conducting co-production, the construction of production linkage chains must be associated with consumption market linkages; it is necessary to have a precise orientation on the output of the product; that is, to be linked with the market, find the output of the product, and fully understand the market requirements. Only by orienting and connecting the market and locating the product's output can the chain of links be stable and effective. Limiting the "good season with devaluation" situation, embarrassment in the consumption stage, goods being forced to refuse import by traders or the importing country. The production chain also aids in better controlling seedling quality and pesticide use during cultivation, harvesting, preliminary processing, and processing... It can aid in better managing food quality, is useful in applying for recognition of international food safety standards, and is a necessary precondition for requesting that the importing country recognize that Vietnam has an equivalent production process (Cao Tan, 2020).

Regulations on agricultural production linkage support currently primarily stop at the orientation stage, with no specific support policies that directly reach businesses and farmers. Businesses and farmers, for example, will be able to borrow capital at preferential interest rates. However, there is a problem when businesses and farmers borrow bank loans for agricultural production. The relationship between the bank and the borrower, the lending conditions, and the re-borrowing period are all governed by



the bank's regulations. Furthermore, due to a lack of legal constraints and the active participation of local state management agencies in product off-take contracts, the link between businesses and farmers is not strong. State agencies frequently argue that because this is a civil contract, it is up to the parties whether or not to comply with the agreement in the contract and how to resolve its jurisdictional authority. It is theoretically correct, but the larger issue is that Vietnam's population is small, farmers' legal knowledge is limited, and some businesses lack a professional legal services division. As a result, if one of the parties fails to comply with the contract's agreement and chooses a jurisdiction to settle the matter, it is not easy; even after obtaining the competent authority's decision, whether or not that decision can be implemented is another matter. As a result, in the current period (probably five years), substantial involvement of state agencies and legal support centers is required to assist the parties in the drafting and performance of the contract, as well as in the event of a dispute. When this mechanism has worked reasonably well, the parties will be responsible for enforcing the contract; the state will only play the role of formulating policies and legal frameworks to support parties and impose sanctions when there is a dispute.

Second, policies that encourage investment in the construction of international standard laboratories (both public and private) are required so that: (i) domestic enterprises can reduce testing time and costs by not having to send test samples abroad; and (ii) accurate test results according to international standards play an important "pre-test" role for domestic goods, allowing enterprises to actively adjust their production processes and better control the quality (Peter A. Petri, 2016).

Third, reorganize the system of specialized national food safety agencies, as well as amend and supplement legal regulations on pesticide management and use, as well as regulations on pesticide MRLs. Regulations should be in place to review the list of pesticides that have been licensed for use on a regular and irregular basis, based on new regulations in Vietnam's main export markets such as the US, EU, and Japan. Vietnam is updating the country's system of standards and technical regulations, initially aligning



with Codex standards and gradually moving to other developed countries to improve the quality of Vietnamese agricultural products, not only for export but also to build a green and sustainable agriculture to protect both domestic and foreign consumers. Furthermore, in the absence of an alternative, the authorities must coordinate with exporting enterprises to actively research, test, and provide documents to the importing country in order to negotiate the adjustment of MRLs for pesticides' primary use in Vietnam. Parallel to the completion of pesticide management regulations, a mechanism to encourage the research and application of biological pesticides is required, as is the development of a process for testing, registering for use, and establishing MRLs for pesticides. Increasing the use of biological pesticides maximizes the benefits of pesticides in supporting agricultural production and export while also increasing safety for users, plants, animals, and the environment (Minh Hue, 2021).

Fourth, in accordance with the Vietnamese Communist Party's development strategy, "strongly develop high-tech applied agriculture, organic agriculture, and ecological agriculture, meeting common standards on food safety and innovation [...] new land management policies to encourage and facilitate the accumulation of agricultural land; abolish limits on who can receive agricultural land transfer, increase the time limit for land allocation and lease of agricultural land." Create an open corridor for production activities and agricultural exports to create unity and synchronization in the legal system. At the same time, it serves as the foundation for competent authorities to better manage the state in terms of food safety and hygiene. Furthermore, re-planning the production area is required to better control the origin and quality of goods; investing in the development of post-harvest technology; renovating and upgrading the infrastructure system in support of agricultural production and export; and investing and encouraging investment in the field of commercial logistics services (Pung Dung, 2021). Simultaneously, actively participate in relevant international meetings and forums, as well as internalize international commitments to align domestic and international law (Vu Thi Tu Quyen, 2019).





## 5. Conclusion

While redefining the agricultural industry's development direction in the direction of increasing mechanization, applying science and technology in production to improve agricultural product quality helps to ensure agricultural product quality while also helping to improve agricultural product quality and the value and reputation of Vietnamese agricultural products in both domestic and international markets. Simultaneously, develop agricultural finance policies for farmers and businesses, and encourage them to invest in scientific research and knowledge training on agriculture, the economy, the environment, and the law for all those involved in the agricultural production linkage chain. By completing the policy system for "smart farmers" (Le Minh Hoan, 2021) and "smart consumers" (Michelle R. Vigil, 2021), both producers and consumers can raise awareness and practice about safe food for the entire society, allowing food quality in general and agricultural product quality in particular to be better controlled.

## Acknowledgement

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## Personalized learning using Artificial Intelligence

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### Abstract

In past 100 years the education sector has changed drastically from just being classes focused on teaching students the obvious to changing their thoughts and guiding their interests personally and shaping their dreams into reality. The early nineteenth century saw the rise of people appointing personal tutors for their students and so came in the concept of personalized learning. With the advent of technology, personalized learning via audio-video feedback is in the trend. The education sector had common norms for all the students since the beginning having common grounds of syllabus for everyone but the mentally challenged. These students' brains are not as well developed as those of their peers. It has been tried and tested that various personalized learning techniques are favorable for these students. The twentieth century saw the rise of Artificial Intelligence as an upcoming revolution. In this research paper, we have tried to research the domain of personalized learning in the area of mentally challenged students and tried to analyze the scope of AI in it.

**Keywords:** Personalized Learning, Artificial Intelligence, Clustering, Classification, Genetic Algorithm.

### Introduction

AI or Artificial Intelligence is defined as the intelligence possessed by the machines. The goal of AI is to empower computers and other virtual machines with the power to analyze and produce results like humans. The basic approach with the science is that of heuristics or a kind of greedy approach where the nearest neighbor or the best possible case is chosen. The best feature of artificial intelligence is by far the capability of deep learning from the data provided. This not only includes just mere learning but also preparing algorithms and training itself. So, the 2 problems that students face nowadays are that either they are too ahead of syllabus that is being taught in the class that they tend to get bored of the classes and eventually fed up of the slow curriculum or they are lagging behind and do not understand what is going on in the class. To combat this problem, the concept of personalized learning came into picture. Every student is different. They have different skill set and different needs and hence personalized learning was much encouraged and obviously gave better results. But the drawback of personalized learning is that it needs a lot of skilled teachers and individual time, which made it very costly.

With the advent of technology, teachers started to provide students with video lectures, which allowed features like pausing and repeating. However, this again then led to the problem of lack



of personalized touch. Personalized learning is set of an instruction that aims at a transparent and flexible learning environment, tailored pedagogy and curriculum and strong classroom culture to target the needs and requirements of individual students. The motto of personalized learning isn't about training or educating a greater number of students with a smaller number of instructors. It is about educating the students we already have, with the instructors we already have, in a more successful and convincing fashion. Artificial Intelligence has been the cornerstone in the development of personalized learning and still plays a key role in the process.

With the rise in demand of artificial intelligence, it was then researched if Artificial Intelligence could aid in personalized learning. But to achieve this, the machine should have a fair knowledge of the individuals, actions, emotions and reactions to various things. Consider a lecture going on in form of a video to a student. The machine should be capable of analyzing if the student is paying attention by analyzing the student's body language. It should further have the potential of being cut by the student's question and be able to answer it by understanding it. Using FAQs is an old and not much effective in the case of personalized learning. Hence personalized questions should be answered. This would mean that the machine itself understands the module that it's teaching the student. Also, in times when an external voice is calling out (for example a student's mother calling him/her for dinner), the AI should understand and pause the lecture while the dialogue is going on. Similar possibilities can occur during a call or if the student gets distracted.

To combat these, following things are essential for the AI (not in steps)

- Image and text analysis
- Deep learning
- Sentiment analysis
- Text to speech
- Face recognition

As an instructor and somebody who is working close by educators and area pioneers to actualize understudy focused practices, there's one thing I know without a doubt, the job of the instructor is imperative and critical in executing customized learning. The model enables teachers to utilize information and innovation to improve learning inside the classroom, develop associations with their understudies, and engage their students to perceive their effect on a classroom network, all while making customized pathways for progress.

Tending to the requirements of the entire student requests that understudies be given a more noteworthy offer of the obligation regarding their very own learning. Actualizing a vital arrangement that really enhances understudy voice requires all-encompassing perspective thinking about learning sciences, network improvement, and socialenthusiastic research. There are 3 foundations to examine personalized learning for the whole learner:

- Vision





- Implementation

- Research & Evidence

The usage track will center upon the mechanics of placing thoughts into training and examine the most ideal approaches to enable you to make and execute an execution plan that is both powerful and attainable. Through a mix of spotlight talks, workshops, and community snacks, we'll be attempting to answer various fundamental inquiries that might be useful in planning and completing the correct arrangement for your school or locale.

### Literature Review

In the modern era, there has been a rapid development of several online learning platforms. There are abundant resources present to endorse these learning platforms. The analysis and objective of the personalized learning algorithms aims to provide the students the best and most suitable resources for learning. This review inclines to focus on the proposition structure in conjunction with data mining in personalized learning algorithm and to gain an insight on the future research trends. Every student is different. There is a difference in their interest, style, attitude and most importantly there is individual differences and preferences. All these factors play a crucial role in learning. The student-centric personalized learning aims students' interests, attitude, learning style, preferences, variances in cognitive level and other factors and aspects. This serves as a basis to offer the appropriate and reliable learning means and the teaching design and pattern which strives to improve the learning efficacy and learning effect that is truly individualized. With the constant and unprecedented development in the field of computer science and research, there are abundant resources available to endorse these personalized learning platforms. Public's plea for personalized learning is cumulative on daily basis. The expansion and latest trend of instructive information has led to a rapid growth in personalized learning algorithm. At present, there are two primary facets of personalized learning algorithm exploration: -  $\rightarrow$  Recommendation systems  $\rightarrow$  Data mining methods

This review collates and critically relates the growth and consequence of personalized learning algorithm founded on recommender systems in association with data mining approaches. This work will also put forward the possible applications of reinforcement learning in personalized learning algorithms.

Two aspects of personalized learning algorithm research:

1. Personalized Learning Algorithm Based on Recommendation System

- 1.1 Content-Based Recommendation Algorithm

- 1.2 Collaborative Filtering Recommendation Algorithm

- 1.3 Hybrid Recommendation Algorithm

2. Personalized Learning Based on Data Mining

- 2.1 Classification Algorithm



## 2.2 Clustering Algorithm

## 2.3 Association Rules Mining and Sequential Pattern Mining Algorithm

## 2.4 Genetic Algorithm and Swarm Intelligence Algorithm

### 1. Personalized Learning Algorithm

Based on Recommendation System Personalized learning recommendations was introduced in 1990s and are only good for providing the same search results for all the users but lack the capability to make personalized learning recommendations (Resnick, Iacovou, Suchak, et al., 1994).

#### 1.1 Content-Based Recommendation Algorithm

Considered the simplest and intuitive algorithm, content-based recommendation algorithm is based on the user's interest. This data helps to recommend the users about the resources based on the interests of the users. This algorithm works by matching the user's interests with learning resources without considering the similarity between the users (Mohammadiari & Singh, 2015).

#### 1.2 Collaborative Filtering Recommendation Algorithm

This algorithm is based on the user preference for the same learning content, collaborative filtering calculates the distance between users, which helps to recommend learning content between users with the same preference. This algorithm can believe in providing recommendations in an efficient manner with a smaller number of feedbacks, but faces two defects, i.e. sparsity problem and cold-starting problem (Wang & Liu, 2013).

#### 1.3 Hybrid Recommendation Algorithm

As the name suggests, Hybrid recommendation algorithm clubs' content-based and collaborative filtering recommendation to tackle the loopholes of both the methods. Scholars have tried to combine these two modes in a possible way. Scholars have tried to re-enter the outcomes of the content-based to collaborative filtering and vice-versa. The biggest challenge faced by this algorithm was to provide an effective way to combine these two modes as they have different approaches (Wan & Zhao, 2012).

### 2. Personalized Learning Based on Data Mining

The precise objective of this approach is to mine hidden patterns and statistics based on user's comportment for knowledge finding. It works by describing content from behavior database to govern the hidden patterns and rules amongst the data. The other role is to envisage, based on present data in the behavior database

#### 2.1 Classification Algorithm

The usage of this algorithm is to elicited the characteristics of several apprentices and personalize tutoring to them. Naïve Bayes classifier is used to govern the user's learning flair. Fuzzy decision tree, association rule mining is classification approaches used to define the



association between the users' learning management system (Feldman, Monteserin & Amandi, 2014).

## 2.2 Clustering Algorithm

The clustering procedure is used to study the isolated points and detect irregular learning patterns to detect deceit comportment, as a reminder for teachers to deal with it. It can also be used as a preprocessing step for the other mining algorithms. These outcomes are castoff for additional data mining analysis and to increase the accuracy and efficiency of learner's appearances. For example: Model-based clustering algorithm, Hierarchical clustering and K-means algorithm (Ayers, Nugent & Dean, 2009).

## 2.3 Association Rules Mining and Sequential Pattern Mining Algorithm

These algorithms are functional to realize learning practices of the learner. Learning deeds must be prepared in an order to implement the recommendations and arrangements (Yu, Own, & Lin, 2001). Sequential pattern mining is used to detect the learning path of the learners and to draw a comparison with the teacher's expected path and then to compute the deviation between them (Wu, 2013).

## 2.4 Genetic Algorithm and Swarm Intelligence algorithm

These algorithms are self-adaptive learning structure via BP neural networking (Wang & Liao, 2011). It is used to recommend different learning materials and sources based on the learner's personality, gender and degree of learning anxiety. Learner's path and the characteristics of target users are considered and referenced for the recommendations (Ahmad, Maryam & Molood, 2013). The target of this review was to present and compare personalized learning based on recommendation system and data mining and its various sub fields. These algorithms are compared using various statistical tools and in-depth analysis. From the above review we can observe that recommendation system usually snubs the information related to user behavior. On the contrary, the use of data mining algorithms helps to analyze the user behavior and extract the patterns and regularity of user's use of the system but with certain defects.

Associated rule mining is highly susceptible to the loss of important and regular patterns which results in disruption in study of accurate sequential pattern. Efficiency of the recommendation system based on data mining algorithm highly depends upon which data mining algorithm is adopted. This system is often encountered with low accuracy, low resource utilization and unstable recommendation (Cheng, 2011).

At present, Reinforcement Learning (RL) is meticulously associated with deep learning, a subset of Artificial Intelligence (AI) to elucidate the problems related to Sequential Decision Making. This has achieved notable outcomes and is evidencing a revolution in the study of personalized learning. Label recommendation algorithm is based on the Reinforcement Learning framework. The data is collected based on the user interests and combined with historical user access data for collaborative filtering recommendations (Li, Zhang, Yang & Liu, 2010).



Therefore, it is conclusive that Reinforcement Learning is proving feasible and suitable to build learner models, model online learning behavior, provide learners with their own learning strategies dynamically & automatically and learning sequence recommendation.

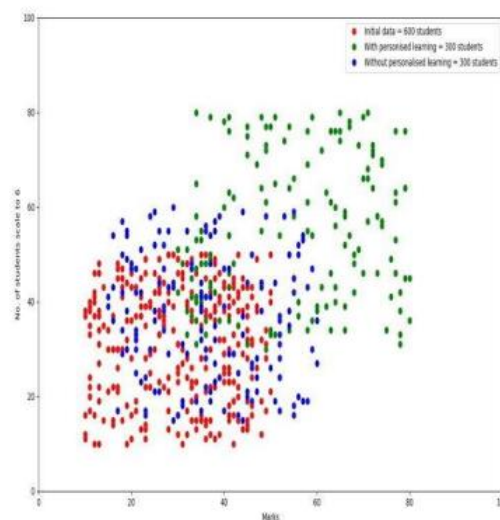
## Methodology

To check the use of AI in education, we checked all the research papers and studied all the relevant work that has already been done in the field. Also, with these we could classify any use of other technologies that is used for mentally challenged students. The next step we did was visit 4 mentally challenged schools and interviewed around 25 teachers asking them the following questions in survey 1. We have further worked upon the details given to us by the school and presented a data diagram (shown under observations) describing how the student's performance drastically changed after personalized learning. To incorporate artificial intelligence, we have further made a login page where the students and teachers will be able to access individual accounts and students will be able to receive Personalized lectures based on their data fed with the past performance. Last but not the least; we analyzed all the studies and the observations from the surveys to find the conclusions.

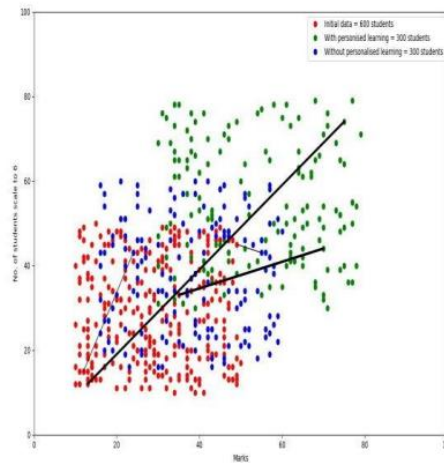
## Observations

From the survey of approximately 600 students, wherein, 300 students were exposed to personalized learning and the rest to normal group studies, it was observed that the students with personalized learning performed drastically well.

As told to us by some of the teachers, on an average, mentally challenged students without any guidance scored between 20-50 marks out of 100. With personalized learning this score shot up to an average of 30-80 marks.



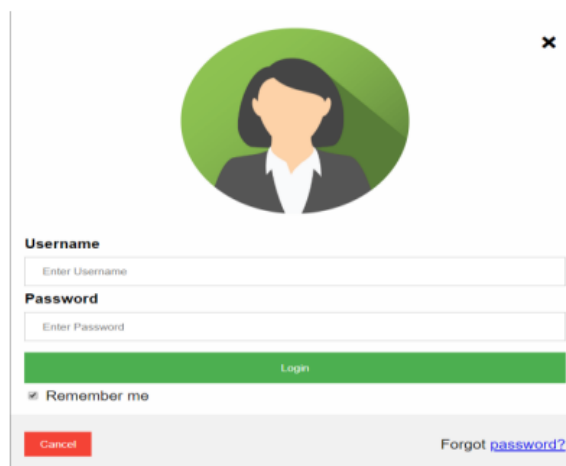
**Fig. 1. Demonstrates student data diagram**



**Fig. 2. Shows comparison in marks after personalized learning**

### Conclusions

After observing the various trends we propose to install a web portal for all teachers and mentally challenged students. This portal shall be connected to a database containing a trained model to provide personalized feedback to each and every student based on his or her existing skill set and weaknesses. This will help the students learn faster and in an efficient manner.



**Fig. 3. An online web portal for students and teachers**



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## **Can Robots Become Managers? A Glimpse into the Evolution of Robotics**

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### **Abstract**

Today, organizations collect huge amounts of data on every field in their work. Most of the work carried out by the employees of the organization is hidden in this data. Computers are becoming adept at acquiring skills and analyzing data day by day. With the rapid advancement of intelligent automation (artificial intelligence, robotics), machines and robots take over these tasks, while employees may have difficulties in integrating into this situation. However, the perspective on robots in the context of algorithms and artificial intelligence does not create negativity in every aspect. That is, by compensating for human skills with automation, they can help managers be more successful. This can increase the productivity and effectiveness of employees and make them aware of the points they need to pay attention to first. This study focuses on the potential role that robots will play in the future.

**Keywords:** managers, management, robots, artificial intelligence

### **Introduction**

While academic studies aim to understand and define terms such as artificial intelligence and robotics, the industry focuses on the development of industrial smart products. Therefore, it is very important for organizations to conceptualize the characteristics and content of Industry 4.0 in the context of potential change to digital production. Robots continue to become more adept at interacting with the world. Research initiatives on the research topic of human-robot collaboration emphasize the application of multimodal interfaces for both operator and robot regulation of control algorithms related to the application (Kruger, Lien, Verl, 2009).

Advances in technology related to the interaction between Human-Robot bring with them the need for greater efficiency and productivity in industrial production. The abundance of jobs in industries can effectively achieve results by performing a robot's tasks in the manufacturing industry under human guidance (Heyer, 2010; Gleeson, Maclean, Haddadi, Croft, Alcazar, 2013; akt.Michalosa , Makrisa , Tsarouchia , Guaschb , Kontovrakisa , Chryssolouris, 2015, p.249).



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“According to a global survey of workers, managers have a hard time competing with artificial intelligence (AI) in some decision-making situations and confidence-building areas (Marot, 2016). According to Marot (2016), a report presented at the 2016 World Economic Forum in January states that millions of workers in the business sector will lose their jobs because of robots, and that robots will soon replace people in senior management positions up to CEO level” (Marot, 2016).



**Figure 1. 439 thousand companies in China are using robots in their production and service**

**Source:** <https://railynews.com/2022/09/439-thousand-companies-in-China-use-robots-in-their-production-and-services/> (accessed on 05.05.2022).

According to Helsgaun (2008), Companies that implement policies with artificial intelligence in their hiring rules are estimated to experience a 20 percent improvement in employee success. In addition, innovations in technology are essential to make employees' lives easier (Kutschenreiter-Praszkiewicz, 2009).

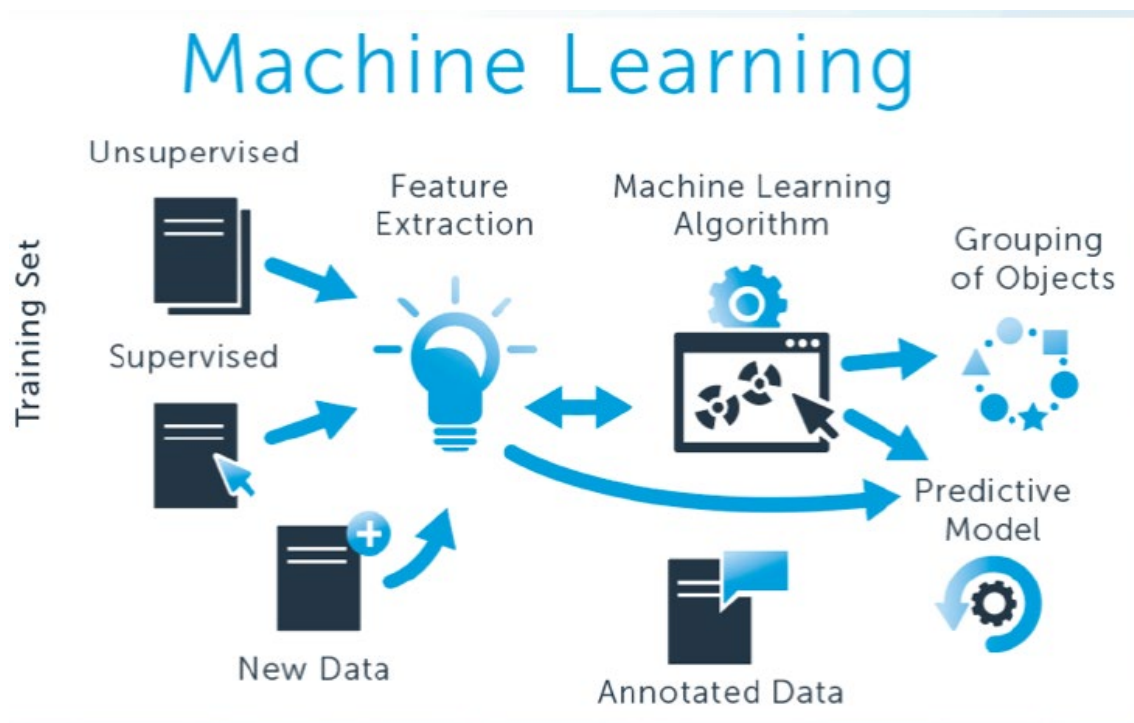


Figure 2. Machine Learning (Seedahmed, 2019) .

### First Robot CEO

According to Ivanov, Seyitoğlu & Markova (2020), a robot is defined as a mechanism that is in motion, capable of being programmed on two or more axes, in motion to perform targeted tasks (ISO 2012 n.p.). According to Wirtz, Patterson, Kunz, Gruber, Lu, Paluch & Martins (2018), robots are often seen as machines capable of performing a complex range of actions. Dyrkolbotn (2017) states that organizations should invest in robots to integrate service robots into their business. Advancing technology is transforming all service sectors as it gets better, smarter and cheaper (Wirtz & Zeithaml, 2018).

According to Elrajoubi (2020), AI has a sufficient database of specific information and, therefore, improves problem-solving and reasoning in the context of partial information (Butt, 2018). AI provides options that increase the value of decisions made while making predictions

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about the future. Using a variety of AI tools with more data (Schreck et al., 2018) offers more accurate decision results.

“One of the most gigantic video game designers in China has appointed an AI-driven humanoid robot to head its branches. The robot CEO's name is Mrs. Tang Yu. NetDragon Websoft states that Tang Yu has been appointed head of the Fujian branch, one of the company's most important branches”. (<https://www.raillynews.com/2022/09/dunyanin-ilk-robot-ceosu-sirket-yonetmeye-basladi/>)



**Figure 3. The World's First Robot CEO**

**Source:** <https://www.raillynews.com/2022/09/dunyanin-ilk-robot-ceosu-sirket-yonetmeye-basladi/> (accessed on 01.06.2022).

The fact that production robots have very detailed features and the robot technologies used to help workers in more complex tasks benefit the solutions of other industrial automation problems. From this perspective, production robots make it easier for employees to concentrate on other dynamic processes that create the basis of creativity, productivity and well-being





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(Santos, J.O. e Sá, Andrade, Lima, Costa, Costa, Galvão, 2017; Tjahjono, Esplugues, Ares, Pelaez, 2017; Vicentini, 2021).

## **Some Research on Robots and AI in the Literature**

De Vries, Gentile, Miroudot, Wacker (2020) are focused on adopting robots and combining country sector data on occupations. The researchers used group matching and classification methods in their studies. As a result of the research, they concluded that non-routine analytical studies are associated with employment.

David Brougham, Jarrod Haar (2020) explored the issue of job loss in technological transformation. The data was collected through a panel from Qualtrics as part of an employee experiences study in which ethical approval was granted, and the survey method was used. As a result of the research, it is estimated that technology can replace 57% of the jobs in the OECD.

## **Changing Attitudes to AI**

The robot was designed and built by a new Silicon Valley company called Industrial Perception. The company's engineers believe that the robot will reach the capacity to place one box per second. The human worker can place a box every 6 seconds. In this case, robots can work non-stop, do not get tired, do not sleep, do not hold their backs, and do not sue for compensation when injured (Ford, 2015; trans. Duran, 2018, p.20).

When protests began in fast food restaurants in New York and spread to more than 50 states, the Employment Policy Institute placed a full-page ad in the Wall Street Journal. "Fast Food Workers Who Want Higher Minimum Wage May Soon Be Replaced by Robots:" Considering that robots are now preferred even for the assembly of electronic devices that require high precision, it is difficult to argue otherwise that machines will soon also offer hamburgers, pizzas and lattes.<sup>1</sup> (Ford, 2015; trans. Duran, 2018, p.33).

<sup>1</sup> Economists are incorporating fast food into the service sector. However, from a technical point of view, it may make more sense to evaluate them in the "just-in-time production" class.

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## Building Blocks in the Clouds

“Prof. Simon Colton from the University of London states that the artificial intelligence program he has developed called "The Painting Fool" will one day be taken seriously as a painter (Figure 4).” (Shubber, 2017).



**Figure 4. A wall of portraits done by The Painting Fool at the "You Can't Know My Mind" Exhibition Simon Colton**

**Source:** <https://www.wired.co.uk/article/can-computers-be-creative> Shubber (2013) (accessed on 18.06.2022).

Shubber (2013) “Colton added some skills to his system, which he described as "imagination and the ability to appreciate." The Painting Fool software detects the emotions in human photographs and tries to reflect those emotions in the abstract portraits it makes. Colton's



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software can even criticize itself. For this, feedback from Darici, developed by researchers at Brigham Young University, is used to measure whether the pictures are achieving their own goals. In a detailed study of 700 types of jobs in the US published in 2013, researchers from the University of Oxford concluded that around 50% of jobs will become suitable for full machine automation in the future. One of the main driving forces behind building robots is that robots are more successful than humans at some jobs” Shubber (2013).



**Figure 5. Is There a Robot from the Managers?**

**Source:** <https://hbr.org/2014/04/can-robots-be-managers-too> (accessed on 01.05.2022).

“While it's not yet known how robots will continue to make their way into factories, offices, and homes, some studies suggest that managers may be able to take on at least some of their simpler tasks” (Young & Cormier, 2014).

## **Results**

The increase in technical progress in the digitalization process has also increased the speed of the introduction of algorithmic management applications into our lives. Especially the



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contactless experience is demanded by the hotel guests who want to access every information by mobile phone without touching anything. In a research conducted by Reyes (2018), the working speed of the cleaning staff can be monitored with algorithms in the follow-up of the cleaning staff working in the hotel. A company called Hotelogix determines the order of the rooms to be cleaned according to the blocks/floors through algorithms when sharing work (Hotelogix, 2018).

Therefore, for investors, how to invest in robotics has become one of the focus issues. Pistilli (2021), the robotics market sector is projected to grow at a compound annual growth rate (CAGR) of 13.5 percent between 2020 and 2027, reaching US\$189.36 billion (Winick, 2017). In the light of these researches, it is clear that high-quality technologies and services that make people's lives easier are being invented and shaped the future. The extra wealth recorded in the field also raises concerns that it will create demand for many jobs, but it could also displace many existing jobs, and even robots will become managers. With the rise of robotics, it is seen that the job market has changed significantly, there is a remarkable progress at the technological level of the robot industry, people; creativity, social interaction and physical speed are the focus of the work and the robot's algorithms continue to evolve.

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## Social Housing Policy in Vietnam: Analysis and Suggestions

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### Abstract

One of the fundamental human rights is the right to safe and adequate housing. However, putting this right into practice is fraught with difficulties, particularly for those with low incomes. As a result, no government can afford to ignore the issue of housing for its citizens, and Vietnam is no exception. The article summarizes the current situation and some shortcomings in Vietnam's social housing policy and makes recommendations to help the country's social housing development.

**Keywords:** Housing, social housing, housing policy, shortcomings, Vietnam.

### 1. The requirement for social housing

Most countries' goal is to settle down, which is the foundation of social stability. According to the United Nations General Assembly, "adequate and safe accommodation is a fundamental human right and is essential for fulfilling human desires" ( Resolution No. 43/181 of 20 December 1988). The Universal Declaration of Human Rights also states that "everyone has the right to an adequate life of health and well-being for himself and his family, including food, clothing, and shelter," as does the 1976 Vancouver Declaration on Human Settlement, which states that "adequate housing and services are fundamental human rights, and governments should ensure that all people have access to these rights, first through direct support to the least opportunistic throu UN Habitat (2011). Housing has an impact on the quality of life of individuals, as well as the stability of society and the economic development of each country. As a result, no government can afford to ignore the housing issue for its citizens.

Realizing the natural right to housing, however, is a significant challenge, particularly for individuals with limited financial resources and who spend the majority of their income on food, health care, and education. Countries have established a system of support policies





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tailored to the specific conditions of each country in order to improve the accessibility of vulnerable individuals' homes. Social housing is a common form of subsidy in many countries. Because each country has its own policy, there is no universal definition of social housing. However, depending on the perspective, many aspects distinguish it, such as ownership, providers, and people. benefits or funding possibilities (Sónia & Hans Thor, 2015). Although there is no universal concept of social housing, many countries have social housing systems in place to address the housing needs of vulnerable populations in society (Nataša Petković, 2016).

Under the Government's Decree No. 71/2001/ND-CP on investment incentives in constructing houses for sale and rent in Vietnam, the first social housing is known as preferential housing. By 2004, the concept of social housing had been formally introduced in Decision No. 76/2004/QD-TTg approving the orientation for housing development to 2020, at point d, clause 1, Section III, "The State implements the investment in the construction of a housing fund for sale, lease-purchase, and lease for policy beneficiaries who have difficulty improving their accommodation (from now on collectively referred to as the social housing fund". A year later, in 2005, the Vietnamese Housing Law officially recognized the concept of social housing "Housing constructed by the State, an organization, or an individual for the purposes specified in Articles 53 and 54 of this Law. This Law governs rents or lease-purchases (henceforth referred to as social housing)" (Clause 3, Article 33 of the Law on Housing, 2005). This concept is based on beneficiaries and distribution methods to determine social housing, but it rejects the form of instalment sale transactions mandated by Decision No. 76/2004/QD-TTgCP. Social housing is housing that is invested in and built to provide policy beneficiaries in two ways: rental or lease-purchase. Because the policy's beneficiaries are those in financial difficulty, they are unable to purchase a home.

## **2. Characteristics of social housing in Vietnam**

### ***2.1. Social housing for people and families with limited financial resources***

When developing social housing policies, it is critical to consider who is entitled to them. Because social housing is viewed as a solution to the housing crisis, it must be targeted at a specific audience. They are a group of people who are having difficulty accessing market



housing; they cannot afford to pay and are unable to meet basic housing needs. Real income relative to market housing prices is widely accepted as a measure of housing affordability. Housing affordability is defined as the cost of housing ranging from 30% to 40% of income, and 80 percent of people with a middle income can afford to live in housing with adequate living space and basic amenities. When developing housing policies for low-income people, policymakers must consider three factors: (i) affordability, in which the payment rate for housing is 30 percent to 40 percent of income (60 percent to 70 percent of income goes to food, healthcare, and other essential expenses); (ii) standard housing units in terms of living space and basic amenities (travel time to the workplace does not exceed 1 hour); and (iii) income threshold, in which people pay 30 percent to 40 percent of their income (Jonathan, Sangeeth, Jan, Nicklas & Shirish, 2014).

In terms of social housing, subjects who can buy, rent, or hire-purchase must be eligible to benefit from social housing policies. In comparison to affordable housing, this type of housing has incentives to provide those who have difficulty accessing basic housing. It is regarded as an effective method of addressing disparities in people's access to housing. These subjects must go through a selection procedure, meet specific standards, and be distributed according to specific procedures in order to participate in transactions for social housing.

## ***2.2. Financial incentives for social housing***

Social housing is a tool for regulating housing market failures while also receiving preferential policies and subsidies from the State, allowing the State to perform the function of redistribution, bridging the gap between rich and poor toward long-term social development (Anatasia, 2016). The State has intervened in the housing market with budget and administrative tools, ensuring people's right to a place to live when they are unable to compete in the market on their own.

The subsidy factor is regulated in Vietnam by Clause 7, Article 3 of the Law on Housing 2014, which states that social housing is housing with state assistance. Supporting policies affect two main groups of subjects, namely housing suppliers and users, so that this type of housing can be formed and developed, playing an important role in resolving housing market



unemployment. Preferential policies are critical to the development of the social housing market. Without this factor, suppliers have no incentive to create products, and consumers are unable to access their supply.

The state's assistance can take the form of tax breaks, reduced land use fees, infrastructure around the project for investors, or financial assistance for low-income people to find suitable housing. On the one hand, the government can help with demand. Buyers, renters, and employees will receive direct assistance in the form of funding, preferential loans, and interest rate relief. On the other hand, the government encourages businesses to invest in social housing by providing loan guarantees, interest rate breaks, land, taxes, and infrastructure.

Furthermore, the support policy includes other social amenities and services created in an environment of connection between people and surrounding institutions. Schools, hospitals, roads, markets, and other public utilities are all part of the infrastructure. As a result, social housing policy is not only concerned with providing affordable housing but is also integrated with other policies, particularly those concerning employment, urban planning, and transportation. In addition to land incentives, tax breaks, and credit assistance, the state provides assistance through the construction of infrastructure both inside and outside the social housing project, such as supporting part or all of the economy. Investment costs for technical infrastructure construction within the scope of social housing development projects or to support investment in technical infrastructure outside the project's perimeter (transportation, electricity supply, water supply, and drainage systems).

### ***2.3. Social housing that is affordable***

The social housing policy is implemented to address the low-income population's housing shortage, which is a result of social welfare (Maarten van, 2018). Aside from rent-purchase transactions, transactions related to social housing are not compensatory at par and rely on income and state budget support. Social housing prices are determined not only by investment costs, but also by a variety of other factors to ensure that social housing prices are within the reach of the policy's beneficiaries. The price is set by the state, and the owner of the social housing project may not change it. This factor distinguishes social housing from market prices.



For the reasons stated above, social housing is priced lower than market value while maintaining high quality to provide affordable housing for all.

Social housing prices, in order to meet the prescribed price condition, do not provide economic benefits to investors and are insufficient to cover construction investment costs. If the price of this type of housing is determined by the market price, it will exceed the low-income group's affordability. By removing these contradictions, social housing can still be built at a low cost using state incentives and the trade-off of benefits that investors receive from commercial housing projects (investors must spend 20 percent of commercial housing projects on building social housing). That is the primary distinction between social housing and low-income commercial housing. Without a clear distinction, social housing is frequently confused with affordable housing and is perceived negatively as low-quality housing.

Commercial housing, according to the market mechanism, is a house invested in and built for sale, lease, or lease-purchase (Clause 4, Article 3 of the Law on Housing 2014). Investment costs are an important factor in determining the price of commercial housing, and low-priced commercial housing is due to low investment costs. Investors have complete control over the price of commercial housing sold on the market, unlike social housing prices.

#### ***2.4. Social housing is governed by a specific mechanism***

Housing for low-income people is in short supply in many countries, including Vietnam. In an environment of insufficient supply and demand, selecting appropriate subjects to enjoy housing policies is critical. As a result, the approval and selection procedures for object selection should be strictly regulated and controlled so that housing reaches the people who need it the most while not wasting limited resources (Ha Mai, 2012).

In Vietnam, the procedure for selecting beneficiaries of social housing policies is a civil procedure. In the meantime, social housing policy aims to provide housing at a lower cost than the market. Costs are reduced by limiting investor profits, gaining access to cheaper construction land, tax breaks, and other financial incentives. As a result, administrative procedures for social housing allocation must be established to ensure that social housing reaches those who lack real housing.



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According to some countries' experience, social housing is allocated using administrative procedures. Local authorities will evaluate applications, confirm eligibility, and verify housing needs after receiving applications from subjects with housing needs. Because it is not possible to accommodate all eligible households who wish to participate, applicants who are eligible will be placed on a waitlist and evaluated on a scale. People on the waiting list whose circumstances have changed since their application must notify the local government in order for their records to be updated. The priority order for applicants on the waitlist may change depending on their circumstances and the circumstances of those on the same waitlist. Priority is given to households and the elderly over young and single people. When social housing is distributed, those on the waiting list will be assigned housing based on the order of preference and criteria established by the local government and published on the local government's electronic information portal (The Summary of Social Housing Assessments, 2017).

Every year, the local government compiles a summary of social housing assessments conducted in its jurisdiction. All households on the housing waiting list are contacted to confirm their continued eligibility for social housing assistance. They were also asked for their income, family size, and current housing situation (The Summary of Social Housing Assessments, 2017).

In short, as a specific good, social housing is subject to stricter management than other goods, particularly in terms of distribution to users. The allocation scheme of the national housing policy and the specific plan of each locality govern the distribution of social housing. Each municipality will select and decide which subjects are eligible to be included on the list of recipients of social housing policies, ensuring that social housing reaches the intended audience (John, 1997).

### **3. Social housing supply in Vietnam**

Social housing projects or commercial housing projects make up the supply of social housing. According to government regulations, investors in commercial housing projects in a specific grade, such as grade 1, grade 2, and grade 3 urban centres, must reserve a portion of the residential land area for investment in building the technical infrastructure system for construction. social housing (Clause 2, Article 16 of the Law on Housing, 2014). According to



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the Vietnamese Housing Law (2014) any commercial housing project built in these urban areas must set aside a portion of the residential land for social housing. The government set the specific rate regardless of project size. When investors are forced to build social housing alongside commercial housing projects, this regulation is expected to increase the supply of social housing and urban development. This topic is covered in detail in Decree No. 100/2015/ND-CP on the development and management of social housing. Investors in commercial housing development projects and urban development investment projects are required to spend 20% of the total residential land area in complex planning projects or the total area approved by the competent authority on the construction of technical infrastructure for social housing construction, regardless of the size of the land area in urban centres of grade 3 or higher and the planned area in urban centres of grade 3 or higher (Clause 1, Article 5 of Decree No. 100/2015/ND-CP).

Based on the Housing Law of 2014, the Decree established a specific rate of 20 percent for investors in commercial housing projects. Clause 2 of Article 5 of this Decree, however, contradicts Clause 1. For projects under 10 hectares, the investor may choose to pay in cash the value of the land fund, which is equal to 20% of the land price that the owner wishes to pay to fulfill State obligations. There are commercial housing projects in grade 3 or higher urban areas that will not set aside land for social housing construction. The following issues plague this regulation: (i) the Decree's content is a sub-law document that is inconsistent with the Housing Law; (ii) this regulation allows investors in commercial housing projects to avoid obligations by subdividing large projects into projects of less than 10 hectares. Furthermore, the investor is refunded or deducted from the project investor's financial obligation to pay the developer for the land area in the commercial housing project for the construction of commercial housing (Point a Clause 1, Article 9 of Decree No. 100/ND-CP). When choosing this method and not building social housing, the investor must pay tax on this land area as a natural obligation, not as an economic trade-off. When the investor pays the land use fee for the entire project, it is considered to have fulfilled the obligations, including the obligation to replace it, rather than spending 20% of the land area on social housing construction.





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The limitation of Decree No. 100/2015/ND-CP has been partially overcome by Decree No. 49/2021/ND-CP amending and supplementing Decree No. 100/2015/ND-CP. For projects with a land area of less than 2 hectares (for urban areas; particular grade and grade I urban areas) and 05 ha, the investor is not required to spend 20% of the land area on constructing social housing (for grade II and III urban centres). Although this regulation makes it difficult for commercial housing project investors to avoid the obligation to construct social housing in commercial housing projects, it is still a sub-law document that has not resolved the conflict. The Law on Housing 2014, in contrast to the legal document, The social housing fund is expected to grow in tandem with commercial housing projects in developed urban areas, reducing the rich-poor divide and housing inequality. Staying in these areas will not be possible for projects with an area below the prescribed level, resulting in a decreasing overall impact of the social housing fund.

The shortage of social housing is caused by a variety of factors, including a lack of capital and land fund, as well as a lack of strict legal regulations, which is one of the factors contributing to this situation. According to a Ministry of Construction report, the built-up social housing area has been 4.8 million m<sup>2</sup> compared to the target of 12.5 million m<sup>2</sup> set by 2020, only meeting 42% of the government's requirements. National housing development strategy for 2020, with a long-term goal of 2030. 207 social housing projects have been completed, totaling approximately 4,290,500 m<sup>2</sup> in area; 220 projects are still being implemented, with a construction scale of approximately 179,640 apartments (Ministry of Construction, 2022). Currently, approximately 3.4 million people are experiencing housing difficulties. These figures reflect the current shortage of housing supply in comparison to actual demand (Ministry of Construction, 2022).

In addition to increasing the percentage of social housing construction, increasing the rate of construction permits more than the regulations, such as increasing the number of building floors compared to regulations or construction density compared to the allowed construction area, is one of the solutions to increasing the supply of social housing. However, this regulation only attracts investors when the projects are implemented in a central location and have a high value. For projects in suburban areas, the cost of increasing the number of floors or building



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density is insufficient to compensate for the difference created by saving land area (UN-Habitat (2011). According to Vietnamese law, project investors can adjust to increasing construction density or land use coefficients up to 1.5 times higher than current construction standards (Clause 1, Article 7 of Decree No. 100/2015/ND-CP).

#### 4. Conclusion

Housing in the market is distributed based on people's ability to pay and willingness to pay; that is, those with good financial ability will have many options, while those with resources will have few. People with limited financial resources, such as those with low or no income, such as the elderly, people with disabilities, and the unemployed, will have few options or may be unable to meet their housing needs. Without assistance, this group of people may not have access to the most basic housing, and they may become homeless or live in makeshift housing with inadequate physical conditions (Betty, 2008). The social housing policy is intended to meet the most basic housing needs of those who are unable to find housing on their own in the free market. Because this housing is only for those in financial difficulty, it is priced to be within the means of low-income people. At the same time, this housing distribution is not based on market forces. However, it is controlled by the state according to a specific machine so that housing can reach the policy's intended target audience.

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## Diversity as a Daily Practice – A Global Survey on How Diverse One's Life is

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### Abstract

This study uses the concept of diversity from Science applying it to Social Studies to understand the diversity of relationships and inputs present in human everyday living. Diversity requires a multi-ethnic, cultural, age, gender, religious background to be developed. This means diversity in relationships need diversity as a concept in all human relations. Diverse living and lifestyle can potentially support the individual through harsh periods meanwhile diminishing prejudice and intolerance. The present study applied the Diversity Survey Questionnaire (DSQ) containing 47 questions (40 questions using a 5-multiple choice scale ranging from always to never, and 7 questions with written answers). A total of 333 individuals participated in the research. The DSQ was created by Dr. Monica Mastrantonio to measure how diverse and inclusive a person's life be can possibly be. The results were collected and measured using the Google platform, and automatically using metrics to reach quantitative results. The collected data shows that diversity has crucial importance in everyday living. Nevertheless, data also showed that people lack significant opportunities to engage in multiple life experiences. Participants also agreed on various aspects that can be done to improve diversity as a method of living. It is concluded that this survey brought important aspects in how people engage in a plural and diverse society, and what needs to be done in that direction.

**Keywords:** Diversity, Everyday Living, Globalization, UN Goals, Digital Humanities

### 1. Introduction

Diversity in humanities means the inclusion of different cultures, identities, and people with emphasis on underrepresented races, ethnicities, genders, nationals, languages, abilities, classes, among others (Alan, 2020). Therefore, the concept of diversity in social practices and research is recent. However, the use of diversity dates from long history; for instance, there is plenty of evidence that the Roman empire was relatively



diverse, as might be expected from an empire that encouraged trade and mobility across different territory (Handley, 2011). In a brief search at the University of York database, diversity in biology brings 1.432.591 results, whilst diversity in humanities has only 440.383 results. Morris (1998) calls out for the importance of understanding the movements between diversity and extinction. Diversity is more than a natural state of the human race that makes it capable of adapting to different circumstances. Although, it is only in the latest 2010 that diversity becomes a recognized way of avoiding one-dimensional ideas, cognitive dissonance, and unlimited language use of the word is part of the contemporary discourse. Humanity needs new ideas, views, practices, which are fundamental to the surveillance of the species. This leads to assuming that although diversity is a survival concept in Life Sciences, its application in Social Studies is limited. Natural sciences have long taken diversity as part of environmental and survival practices and used this concept to plea for diversity as part of a healthy habitat. In humanities, this same association begins to develop in diverse areas of knowledge as in family relationships (Widmer, 2010), college (Turner, 2015), school curriculum (Donald, 2007) or work (Wilson; Baruch; Boulaye; Hartog, 2015). With the rise of the call for diversity and equality as one of the UN goals, more attention has been given to this topic (Ramirez; Bromley; Garnett Russell, 2009). However, what is diversity from the individual perspective? How diverse are someone's surroundings and background? How open are people to accepting diversity as part of their lives? What does it require to have a diverse living style? Would this help against prejudice and intolerance? Diversity in this study implies being in contact with a wide variety of experiences capable of creating heterogeneous thinking, less prejudice, more tolerance, and a wider variety of influences and inputs. Mass media and globalization have contributed to the standardization of individuals and loss of diversity richness (McLuhan, 1964). Somehow, this seems to run in parallel to the endangerment of species in the biology field, while its effects on humanity have not been given proper attention. As nature and biology diversity threats become more frequent, biodiversity conservation is due to the loss of varieties (Holmes, 2015). Nevertheless, how can diversity be understood in everyday living? How are diversity and inclusion present in linguistics, art, culture? Inclusiveness can bring light towards the path of building a democratic and equally participative society. The cross-disciplinary nature of humanity requires interdisciplinary research and methodologies to understand how people experience and live diversity in practical aspects. Further on, it requires the development of different resources, like the Diversity Survey Questionnaire - DSQ (Mastrantonio, 2021), collaboration, and the creation of assessment and measures to understand the process and escalate it. The diversity in science subjects is also important to exchange knowledge and collaboration. (Baron, Donn, 2000). Despite the lack of material in approaching human diversity in research and academia, future professionals will deal necessarily with a multicultural world, or at least while it still lasts (Spence, Brandao, 2021). For Rescher (1985), the valorization of diversity on a global scale poses new challenges to society along other dimensions. Technological environments require





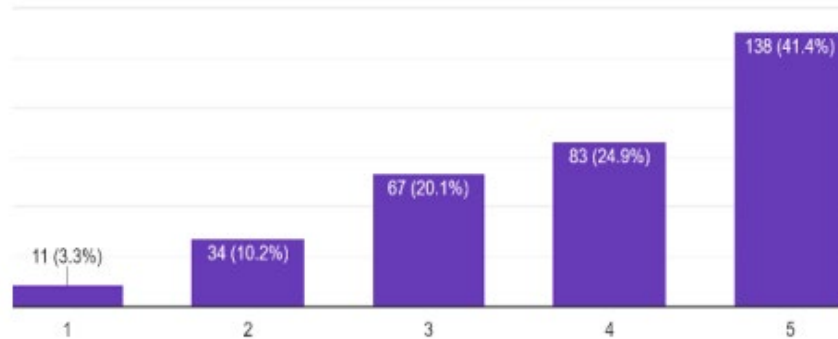
global perspectives, but, to enhance democracy and well-being, diversity and socioeconomic inequalities need to be addressed (Haworth, John T.; Hart, Graham, 2007). Extremists, nationalists, monoculture narratives pose exclusive, singular perspectives, which take for granted or even despise everything differently. Diversity drives excellence (Swartz, et al, 2019). A global multi-cultural perspective is much needed, including being the condition for effective implementation of the 20-UN-goals. This research asks, how do people live diversity in their everyday living? Do they consider diversity important? Is diversity experienced differently according to each aspect of daily living? What aspects can be worked out to build a more diverse and inclusive life? To do that, a Diversity Survey Questionnaire was developed and applied to responders across different countries and continents.

## 2. Methodology

A survey with 47 questions about diversity was developed and applied to different people across the world. Diversity was translated into aspects of everyday living, for example, diversity in music, books, friendship, relationships, trips, food, and other social and cultural aspects; measuring the impact of these factors in everyday living. The survey was composed of 40 multiple-choice questions with the following choice of answers: 'never' (0%), 'rarely' (25%), sometimes (50%), most often (75%); always (100%). The objective of these answers was to measure the frequency of diversity in people's daily influences and interactions. This article presents twelve (12) of these questions throughout figures with the percentage quantity for each answer. The responders were all treated anonymously, and a follow-up answer with the results was automatically emailed to each participant. Two hundred and twenty-two of the responders said they wished to receive a followup email with tips for developing a more diverse lifestyle. The data shows that there were 57% of the responders from Asia, followed by 16.5% from Europe, and 10% from the Americas. A total of 19.6% of them were at the age of 20 to 30 years old, 26.9% from 31 to 40 years, and 26% from 41-50. In terms of education, 49.7% had masters or doctoral degrees, and only a small fraction was high school level. They all spoke English as the Survey was applied in English.

## 3. Results

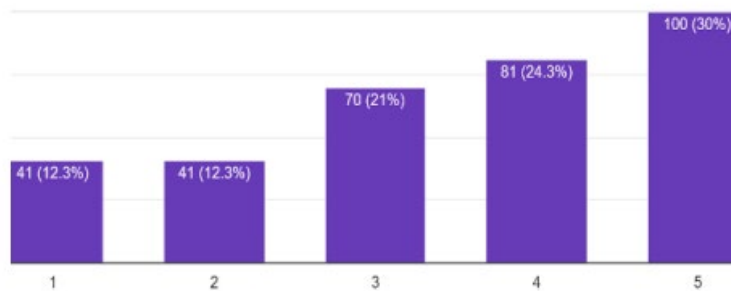
The results were automatically processed and figures for each question of the survey are shown below. The answers for each of those questions are allocated as follows: 1 (never), 2 (sometimes), 3 (usually), 4 (often), 5 (always) with the correspondent percentage. In the figure 1, which comes next, diversity in friendship received a high percentage of 'always' answers.



**Figure 1. Diversity in friendship**

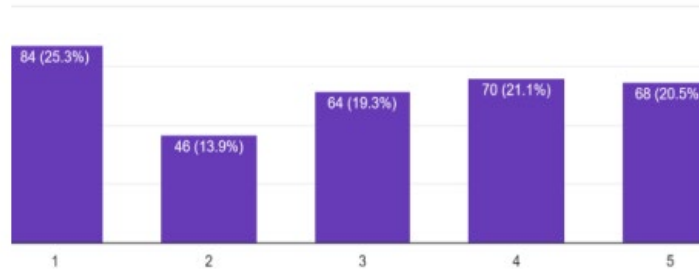
The figure above shows that 41.4% of the responders do have friends from diverse backgrounds that means from different ethnicity, culture, religion, social class. However, there are still 10.2% plus 3.3% who rarely do, which makes 13.5% altogether of respondents whose friends are not diverse from themselves.

The below figure shows if the responder has already lived with someone from a different religion, culture, ethnicity.



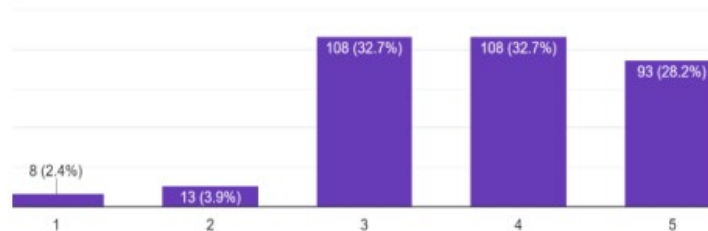
**Figure 2. Diversity in living with someone from a different culture, ethnicity, gender, religious, or economic aspect**

As can be seen, by the figure above, 30% of the participants have already lived with someone who differs from their background, but 24.6% rarely or never did it. It is important to note that 1/4 of the interviewed have never had such an experience. Figure 3 shows Diversity in dating someone from a different background (cultural, ethnic, religious, economic, age).



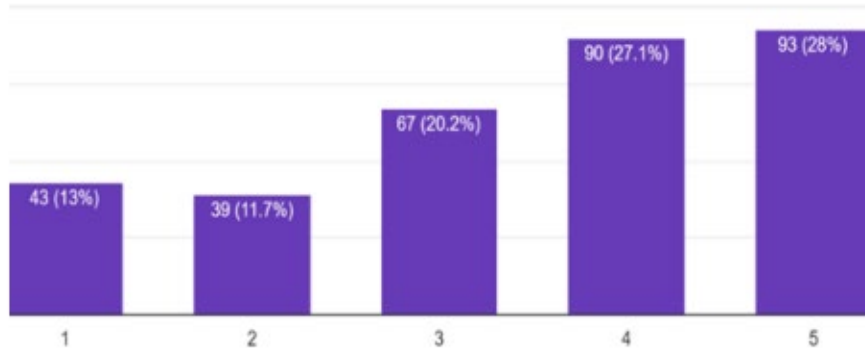
**Figure 3. Diversity in dating someone from a different background  
(cultural, ethnic, religious, economic, age)**

Moreover, when asked if the responders have been on a date with someone from a different background (cultural, ethnicity, religious, economic, age), the positive response rate is 20.5%, meaning “always.” The smaller number of responses is 13.9% of the 46 respondents among other levels of response rates. However, the impressive data in this question is the “never” choice, gathering 25.3% of the answers. Again, over ¼ of the responders have never experienced diversity in this area.



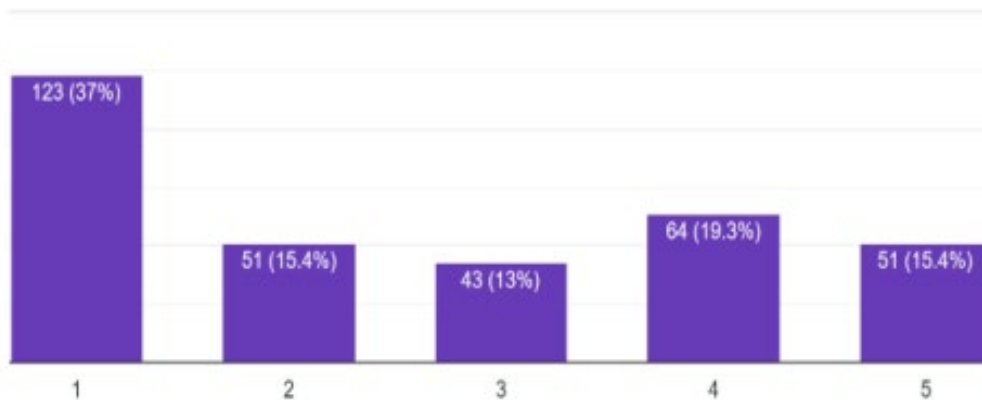
**Figure 4. Willingness to buy foreign products**

For the above question ‘willingness to buy foreign product’, 28.2% of participants out of 333 participants responded favourably when asked if they would buy a product made in another country, (buying a ‘foreign product’). A negative response from the participants was only 2.4% of 8 for this question or 3.9% for rarely. Nevertheless, the greatest response rate is set in the middle with ‘sometimes’ ranking with 32.7% percentage of answers. The below Figure 5 brings the diversity concept applied to the neighbourhood around someone showed the following figures.



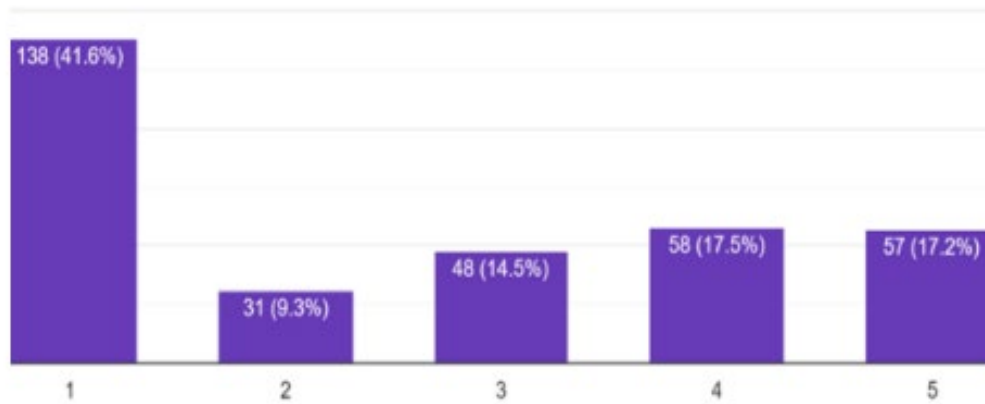
**Figure 5. Diversity in habiting, living in a multi-ethnic, cultural neighborhood**

When asked if they had ever lived in a multi-ethnic, multi-cultural neighborhood, 28% out of 333 responses said ‘yes.’ At the same time, 11.7% of 39 responses, which is the lowest answer rank said they rarely lived in a diverse neighborhood, whilst 13% never did it. Adding ‘never’ and ‘sometimes,’ the result will be 24.7%, which corresponds to ¼ of the responders having never experienced diversity in the neighborhood. The next figure will show how diverse were the first friends and classmates from primary school were.



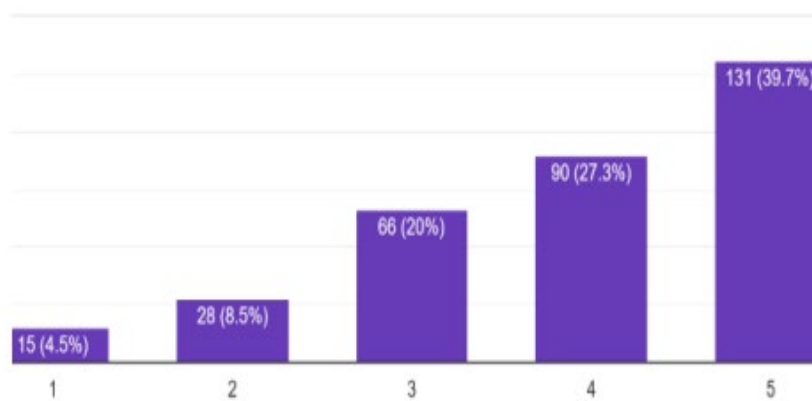
**Figure 6. Diversity in primary school friends**

With the percentage of 37% out of 333 responses as ‘never,’ that was the answer, which received the highest rate. This means that primary school did not count on having classmates from other countries, cultures, or religions. The lowest score for the above question is 13% of 43 responses, and that was for the category with the lowest score and selection. Next figure of number 7 shows diversity in living abroad.



**Figure 7. Diversity in living abroad**

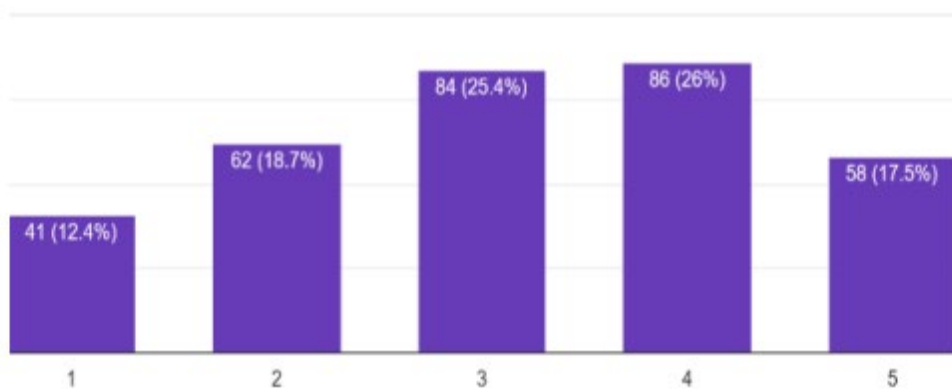
Figure 7 shows 41.6% of 332 responses is the higher rate of response percentage for the question on living abroad, meaning 'never.' The least number of responses for the above question is 9.3% with 31 responses, meaning 'sometimes.' The next figure of number 8 presents diversity in literature, that is reading authors from a variety of backgrounds.



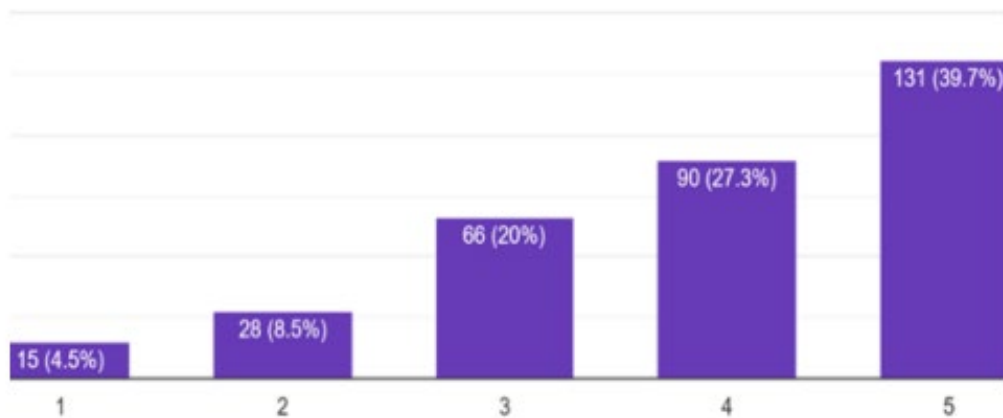
**Figure 8. Diversity in literature - reading authors from a variety of backgrounds**



How participants responded to the question of reading authors from different backgrounds is 39.7% with the highest rate as 'always' among the 333 of the responses received. The number with the lowest score is 4.5% with 15 participants' responses. Respectively, other responses were in average level when compared with the medium response rate, and 'never' received the lowest score with 4.5%. Figure 9 demonstrates diversity in films – watching Bollywood films and other off circuit films.



**Figure 9. Diversity in films – watching Bollywood films and other off circuit ones**

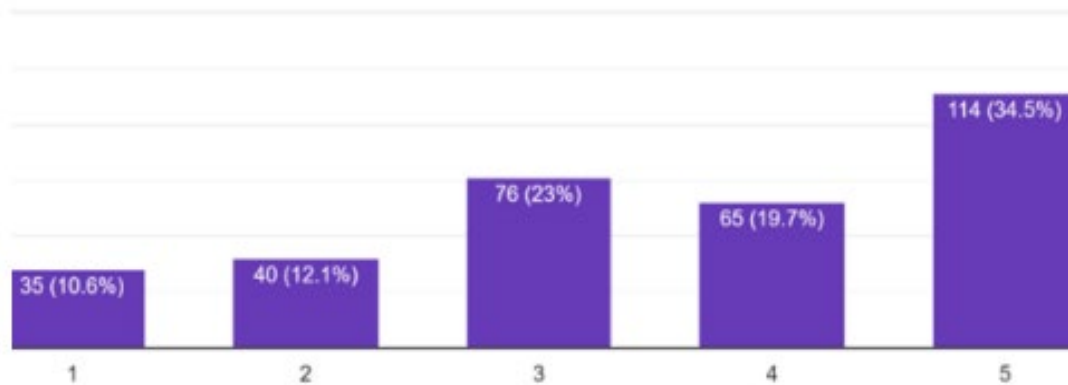


**Figure 10. Diversity reading, reading foreigner's authors**



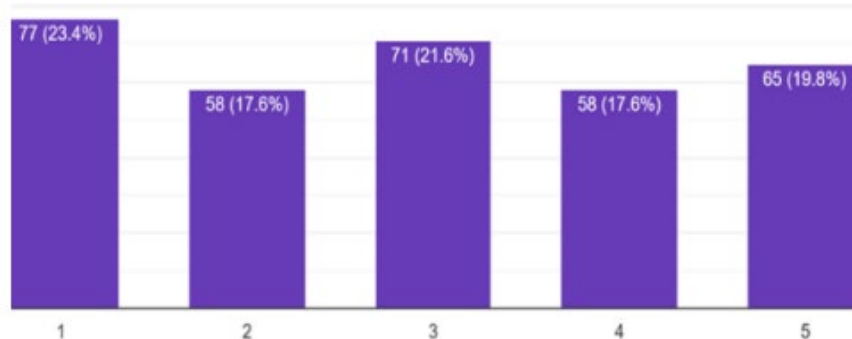


The above figure shows how participants responded to the question of reading authors from different backgrounds. The highest score was 39.7% with 'always' reading different sources among the 333 responses. The option with the least number of responses is 4.5% with 15 participants' responses. In between, there is a crescent number of responses going from 'never' to 'always.' The other noted point in this figure is that diversity in literature is the response that received the highest score in terms of experiencing diversity in everyday living, which may indicate this field is the closest to equality. Respectively, other responses were in average level when we compare the overall response rate. The next figure 11 will show the diversity on comments on social media.



**Figure 11. Comments on social media from diverse people.**

In Figure 11, participants' responses for the question of comments in social media profiles from different countries and ethnicities are 34.5% (always) with the highest score out of 333 responses. At the same time, 'never' with 10.6% of responses are the lowest score for this question. In conclusion, there is a high percentage of diversity interaction in social media for some of the responders. On the other end, for 23% this only happens 'sometimes.' The following figure of number 12 shows if responders keep track of other currencies apart from their own.



**Figure 12 - Record and follow-up of other currencies**

For the question above on how people keep track of other money currencies apart from the ones in their own country, the response rate of 23.4% of participants mentioned that they 'never' do it. The smaller number of responses is 17.6% saying they 'rarely' follow any other currency apart from their own. Different from that, 19.8% and 17.6% say they 'always' or 'frequently' do, respectively. The survey also counted with some open questions at the end of it, and the following answers described activities that could incentive diversity in everyday living. The list is as follows,

1. Spending some time abroad
2. Engaging in activities with diverse groups
3. Learning more about other cultures
4. Living in a diverse and inclusive city
5. Using apps that have diverse-inclusive agenda
6. Questioning Social Media and Internet Algos
7. A better presence of people from diverse backgrounds guiding mass media (both for entertainment and informative purposes)
8. Attending Seminars & Symposium
9. Experiential learning about other cultures
10. Learning new languages.
11. Formal education/courses in cultural safety and competence
12. Watching other cultural movies



13. Connecting with other cultures

14. Education in school. I'm mostly referring to LGBTQ acceptance and more gender diversity

15. Interreligious dialogue

16. Chatting with people of different nationalities on social networks...

17. Developing personal relationships with people from different cultures and sexualities.

It is important to note that the responders gave very important tips on building a more diverse lifestyle, and all of their suggestions can be incentivized since early years through multiple stakeholders and entities.

#### 4. Discussion

Diversity is indeed a most important topic and category in human relations as well as in Life Science. It is through diversity that people learn different perspectives, and together with it, to interact with diversity in respectful ways. This survey showed that the initial aim was reached. It demonstrated the impact of diversity in everyday living, and how this concept is not homogenous. Some aspects of diversity tend to be more developed than others, as it can be noted mainly by figures 2, 4, 8, 10, 11. Contrary to those, some aspects like school friends, dating, currency, living abroad, the diversity aspect is very low. This is very important to note because diversity is not a steady concept, it fluctuates throughout multiple interactions and particularities. Nevertheless, it is possible to infer that although there is some penetration of the concept of diversity throughout social media, and its objects like films, books, living with someone from a different background, when it comes to more specific and intimate relationships – the act of immersing oneself into diversity, there is still a large gap to being covered. This is specifically found in the question of dating someone from a diverse background. Perhaps, if society and schools offered a diverse surrounding from early age that could be diminished. Another aspect that is relevant in this research is that the responders were very willing to participate, receive tips on how to develop a more inclusive and diverse life, and collaborate towards it. The suggestions given by the responders to a more diverse lifestyle are very pertinent and can be implemented by governments, agencies, institutes, and multiple organizations. Some organizations have already been taking the lead in calling attention to diversity while implementing programs and agendas.

However, there are still miles to go in that direction. Cities, neighborhoods, schools, mass media companies, all have their parts in this. It is mister to note that the focus of this research were the individuals, the perspective adopted was from the individual elaboration and experience of diversity. In sum, most of the individuals who took part in this research said they were willing to participate and know more about it. One possibility might be that agendas include motivation and training of individuals as leaders and collaborators of diversity. Such guidelines could potentially work as pro-UN goals while building and spreading diversity towards a respectful and inclusive humanity.



## 5. Conclusion

Diversity is indeed a most important topic and category in human relations as well as in Life Science. It is through diversity that people learn different aspects of the world, and concomitantly, learn to respect them. To build a diverse and equal society requires diversity as a key concept crucial for a future that includes everyone.

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**A non- financial methodology to assess the relationship between  
multi-nationality and performance in US large capitalization  
multinational companies**

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**Abstract**

It is generally assumed that the performance of a company improves with greater multi-nationality and that there is a direct relationship between the two variables; however, there is a third critical strategic variable between multi-nationality and a firm's performance: the strategic management performance. This paper reports a study of 12 multi-national companies (MNCs), examining how their multi-nationality dimension requires an adequate strategic management performance, and how that is reflected in their performance, expressed in stock price and return on investment (ROE).

**Keywords:** multinational corporation; multi-nationality; strategic management; return on equity (ROE); stock; stock price

**Introduction**

The foundation of international business studies rests on the assumption that increasing multi-nationality is good for a firm's performance. Vernon (1971) reported a positive relationship between performance indicators such as return on investment (ROI) [or return on sales (ROS)] and the extent of multi-nationality of the firm. An increase in multi-nationality allows the firm to capture economies of scale, or geographic scope (Kogut





1985). Dunning (1993) asserted that less saturated foreign markets provide companies with the means to maintain and expand distribution and gain overall market share by exploiting their current stock of assets; those companies then can reap internalization benefits, circumvent market failure, and avoid trade barriers, moral hazards, and broken contracts.

Additionally, next to multi-nationality rests another equally important variable: the corporate strategic positioning. Ansoff's 1965 book on corporate strategy, the first to concentrate solely on the subject, was described by Mintzberg (1994) as "the most elaborate model of strategic planning in the literature." (p. 59) "Corporate strategy" (Ansoff, 1965), an early term to define what later became "strategic management," started with the aim of producing "a resource allocation pattern that will offer the best potential for meeting the firm's objectives" (Mintzberg 1994, p.). One of the main goals of strategic management was for the work to be a set of concepts, procedures, tools, and practices intended to assist organizations determine where they are, what they should be doing, how they should do it, and why (Bryson, 2004). Mintzberg and Lampel (1999) added that the deciding characteristics of a formal strategic planning process were "that the process is not just cerebral, but formal, decomposable into distinct steps, delineated by checklists and supported by techniques" (p.21).

### ***Research objectives***

The major aim and objective of the said study is to explore the relationship between multi-nationality and strategic positioning in companies, purport is not as direct as most literature indicates, but rather quite indirect because of the introduction of a few strategic



variables that determine a MNC' strategic performance. This particularly association cannot be examined clearly but it is possible by generating the various aspects of the multi nationality.

- To examine the association among the MNCDM and OSPP-COG
- To explores the relationship between OSPP\_COG and ROE
- To identify the correlation between OSPP-COG and PERF-19

### ***Research questions***

The major research question of the said study is: what is the relationship between multi-nationality and performance in companies? The purpose is not as direct as most literature indicates, but rather quite indirect because of the introduction of a few strategic variables that determine the performance generated by a company strategic management. This particularly association cannot be examined clearly but it is possible by generating the various aspects of the multi nationality.

- What is the association among the MNCDM and OSPP-COG?
- What is the relationship between OSPP\_COG and ROE?
- What is the correlation between OSPP-COG and PERF-19?

### ***Research significance***

The research study significantly contributes to the literature review by offering the various aspects related multi nationality of the companies as well as various related to



other performance. It offers the good source to enhance the performance of the various organizations by focusing on its international sales. The aid significantly contributes to the performance of the firms that are selected as sample size in this document. This study contributes to the knowledge of the policy makers to perform better on this topic.

### **Literature Review**

International expansion requires superior strategic management that determines the multinationality company (MNC) performance. A large MNC could fail if its international expansion is not supported by an equally capable and effective strategic management performance.

### ***Definition of MNC***

The evolutionary theory developed by Kogut and Zander (1993) marked the transition from knowledge-based theories regarding the MNC. The most relevant contribution of this prominent theory is based on the following argument: firms are social communities that serve as efficient mechanism for the creation and transformation of knowledge into economically rewarded products and services. The relevant benchmark for whether a firm will transfer a technology internally is its efficiency in this respect relative to other firms. (Kogut and Zander, 1993, p. 627)

Kogut and Zander (1993) define a MNC as being a “social community”; they indicate the notion of efficiency of the MNC as the criterion for knowledge transfer, and they also refer the MNC as the unique “reservoir” for knowledge creation. In the 21<sup>st</sup>



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century, after a process of massive globalization, the old fundamental assumption of a firm being regarded as a “social community,” and the statement that this “social community” is the most efficient mechanism to generate and disseminate knowledge across boundaries can be critically evaluated. Nowadays, the presumption of the existence of one single common identity within the firm can also be challenged. It is more in line with the nature of the firm to view it as a rich pool of individuals with similar interests and goals rather than one common identity. It can also be postulated that it is not valid to accept the efficiency of the firm as the criterion for knowledge transfer, rather some other aspects should be taken into account (i.e., intellectual rights protection like licensing), as well.

The limitation of regarding the firm as a unique reservoir for knowledge creation can be reduced by introducing the contribution from the external environment outside of the firm. My brief critical evaluation of the evolutionary theory of Kogut and Zander (1993) has prompted me to elaborate my own collective definition of MNC as a network of multiple identities working under principles of co-operation collaboration and integration; this decentralized system contributes to enhancing the level of efficiency of the MNC in creating and transferring knowledge.

Why would a company decided to develop into a MNC? Advantages of international expansion include:

- (1) Spreading common and central overheads over more and more nations: this is especially critical in R&D-intensive industries that require amortization of R&D from more than a few markets (Kobrin, 1991; Tallman & Li, 1996).



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- (2) Greater learning of international experience (Kobrin, 1991).
- (3) Access to cheaper resources in foreign countries: these could include cheaper labor, better technology, or any country specific resource (Porter 1990; Jung, 1991)
- (4) The abilities of the MNC for global scanning of competitors, markets and other opportunities (Contractor, Kundu, & Hsu, 2002).
- (5) Better price discrimination and arbitrage potential with larger geographic scope. In general, the greater the number of countries the MNC serves, the better its “appropriability regimen” (Teece, 1986).

There is a vast majority of literature that argues for a relationship between performance and degree of multi-nationality, such as Contractor et al., (2002), who state that “the core international business theory argues for a positive relationship between the performance of the firm (measured by a variety of indicators such as ROI, ROS, ROA, ROE, growth) and its degree of multi-nationality” (p.6). My interest focuses on the literature that postulates a linear, direct, positive relationship between multi-nationality and performance, generally defined under the form of a financial ratio (examples as follow):

- ROE, Asset Turnover, Profit Margin (Han, Lee, & Suk, 1998).
- “(After-tax net income)/(Total Assets)” (Jung, 1991).
- ROI, ROS (Vernon, 1971).
- Excess Market Value; Tobin’s Q (Kim & Lyn, 1987).
- Excess Return (Errrunza & Senbet, 1981).



- ROA, ROE, and ROS (Grant, 1987).
- ROA, ROE, and ROS (Grant et al., 1988).

As previously mentioned, we are adding to the relationship a 3rd critical variable of “action” of strategic management of the MNC.

***Transactions cost theory (TCT) vs. resource-based theory (RBT): The implications for strategic management***

Transaction cost theory was developed as an economic theory; however, it has an important influence on research in strategic management. The focus of TCT is the definition of the determinants of coordination of the transactions and its costs, thorough market or hierarchies (Joskow, 1988). In this sense, the boundaries of the firm (and/or the multi-nationality degree) should be a function of the governance structure (Holmstrom and Roberts, 1998; Williamson, 2002 & 2005), especially when we consider that this governance structure would assure the optimal adaptability of the firm to changes in the conditions of supply and demand.

The main research question that TCT addresses is why economic transactions are organized in the way that they are in modern society (Williamson, 1994). More specifically, why are some economic transactions internalized within the boundaries of firms while others are procuring to external parties? The general answer is that activities are internalized when (transactional) costs are less than conducting the same activities externally in the market. TCT claims that the firm provides a relatively more efficient method of organizing relative to the market because of optimization of transaction costs





or overall value. TCT factors strategic management as the top of a hierarchy, adding value by economizing on transaction costs. There are some negative implications of TCT such as “asset specificity” and “uncertainty.”

The degree of “asset specificity” ranges from nonspecific to mixed to idiosyncratic (Williamson, 1979, 1985). The “asset specificity” assumption can be referred to as the driving assumption of TCT, as Williamson (1979) states “the importance of asset specificity to transaction cost economic is difficult to exaggerate” (1985, p.56). Uncertainty is the assumption that past, current, and futures states are not perfectly known for various reasons. (Williamson, 1985). Notwithstanding the impact of TCT on strategic management research in the last decades, TCT has thus been subject to multiple criticisms.

The following centered on the aspect of cost minimization (Ghoshal, & Moran, 2004): There is a set of theories named “resource-based theories,” which emphasize that organizations would have to make and exploit transactions specific investment under conditions of uncertainty to gain long-term competitive advantage. But minimization of transaction costs (the central point of TCT), would have little advantage if transaction specific assets are not valued in the market. If that is the case how can the value of those assets be measured? A similar problem can be extended to uncertainty, how can it be quantified and measured?

The resource-based view (RBV) argues that firms possess resources, a subset of which enable them to achieve competitive advantage, and a subset of those that lead to superior long-term performance. Resources that are valuable and rare can lead to the



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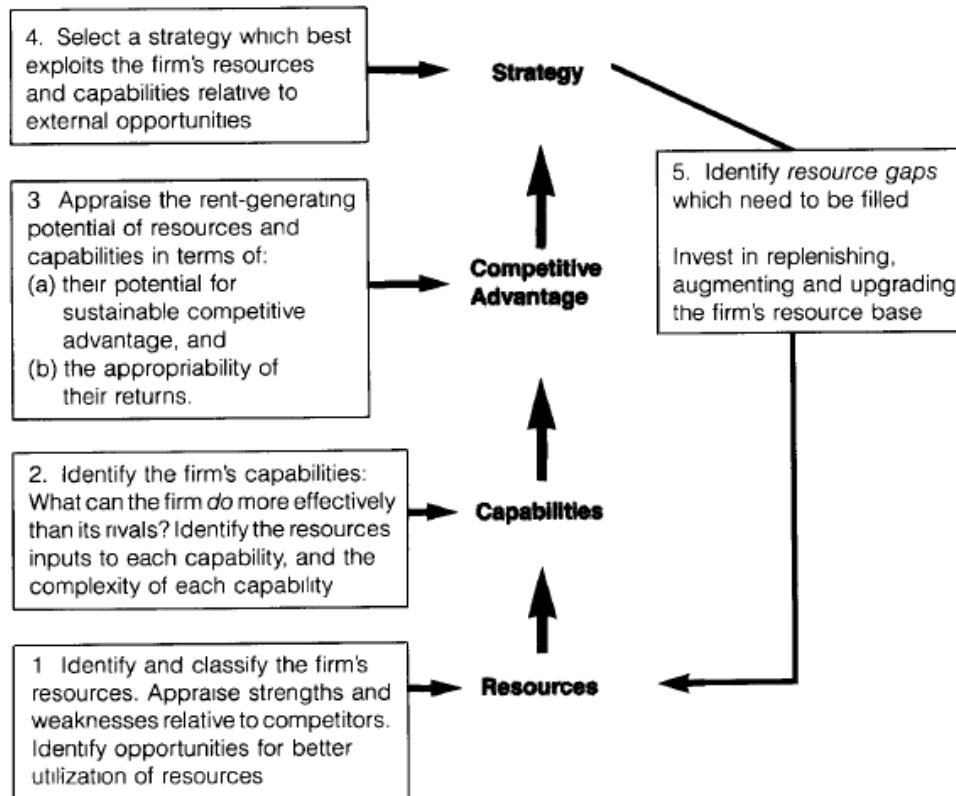


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creation of competitive advantage. That advantage can be sustained over long time periods to the extent that the firm is able to protect against resource imitation, transfer, or substitution. (Barney 1991)

Similarly, to TCT, RBV has been originally developed as an economic theory, that subsequently has assumed important implication in regard to strategy: “The resource and capabilities of a firm are the central consideration in formulating its strategy: they are the primary constants upon which a firm can establish its identity and frame its strategy, and they are the primary sources of the firm’s profitability. The key to a resource-based approach to strategy formulation is understanding the relationship between resources, capabilities, competitive advantage, and profitability – in particular, an understanding of the mechanism through which competitive advantage can be sustained over time. This requires the design of strategies which exploit to maximum effect each firm’s unique characteristics. (Grant, 2001). See Figure 1.



**Figure 1.** A Resource-based approach to strategic analysis: A practical framework

(Grant, 1991).

### *Strategic management as evolution of RBT*

Resource-Based Theory represents a considerable advancement of TCT, especially when linking the MNC and its performance. However, in the RBT relationship among variables, there is a critical one missing: the environment. The addition of it enriches the definition of strategy as: “the match an organization makes between its internal resources and skills...and the opportunities and risks created by its external environment.” (Porter 1990).



The importance that Porter lends to the environment (as an addition to RBT) has been shared by the Ansoff (1976) strategic management theory. Ansoff and Sullivan (1993) focused on identifying and improving a firm's strategic-performance potential through the analysis of the industry's environmental turbulence level relative to the firm's aggressiveness and responsiveness of capability. Ansoff strategic management theory holds that the fundamental goal of planning is to produce a strategy which achieves a "match," "fit," or "alignment" of internal resources and capabilities with external opportunities and threats (Mintzberg, 1990). Ansoff states that "Strategy represents a fundamental congruence between external opportunities and internal capability" (Mintzberg, 1990, p.1992).

This important concept led Ansoff to the development of his hypothesis of strategic behavior, which enables a quantitative analysis of the relationship between the environment, its strategy, and its performance. The Ansoff hypothesis states that:

"For optimum profitability the levels of both the strategic aggressiveness and general management responsiveness of the firm must be aligned with the environmental turbulence level" (Ansoff & Sullivan, 1993, p.14). Ansoff (1993) developed his hypothesis based on environmental turbulence, strategic aggressiveness, and the capability of a firm's strategy and performance.

This formulation illustrated that the profitability of a firm is optimized when its strategic behavior is aligned with the environment. In Ansoff and Sullivan (1993), the Ansoff hypothesis and its components were presented and discussed, as well as some empirical results of its application in different firms. Accordingly, the hypothesis



indicates that at each level of environmental turbulence there exists a strategic aggressiveness and general management capability, which will produce optimal financial performance. When there is a mismatch/gap between the variables, then the financial performance drops in a non-proportional manner (Ansoff & Sullivan, 1993, p. 14).

In 2012, Kipley introduced a more articulated model based on Ansoff hypothesis, merging it with other epistemic modeling techniques, envisaging Porter's generic strategic position (Strength, Weakness, Opportunities, Threats aka SWOT), and elements of RBT as useful methodologies (Porter, 1980). The method represents a comprehensive attempt to classify the future firm's future competitive position. These efforts utilized matrices to depict the firm's position, such as the Boston Consulting group, point positioning, and dispersed positioning.

The GE/Mc Kinsey model later enhanced this typology by expanding to 3x3, contributing to a deeper understanding of the firm's positioning. Both types of assessments, the Ansoff hypothesis and positional matrices, are effective tools for all kind of firms. On the other hand, it could be argued that these positional analyses singularly reflect a blind spot in modeling the firm's future strategic performance potential, as neither considers the interaction of the other. The Optimal Strategic Performance Positioning (OSPP) Matrix, as an alternative, represents a robust model combining elements of RBT, Ansoff hypothesis and performance matrices to provide a capability to evaluate both firm's current and future performance position.



### ***The optimal strategic performance positioning (OSSP) variables***

The OSSP matrix model measures 4 strategic variables and predicts firm performance. The OSPP matrix is supported by a software application (utilized in this paper) comprised of 11 data collection screens and a data summary output screen, and it is based on the following variables:

- (1) Strategic Posture
- (2) Strategic Investment
- (3) Future Competitive Position
- (4) Future Industry Prospect

### ***Strategic posture***

Kipley (2012) substantially re-elaborates the components of Ansoff hypothesis, which remains the foundation for determining strategic posture. Strategic performance is defined as the combination of the Environment Turbulence Level (ETL), Strategic Aggressiveness (SA), and general management Capability Responsiveness (CR). Initially, a detailed analysis (through 22 turbulence level descriptors on a scale from 1 to 5) of the industry's future ETL is performed. Thereafter, the firm's SA level measuring both their Marketing Aggressiveness and Innovation Aggressiveness is assessed through a series of 22 aggressiveness descriptors (11 innovations and 11 marketing). The last component, the Strategic Posture variable, is the assessment of General management (CR). The CR is assessed in two complementary ways: (a) by observing the characteristics of the firm's responsiveness behavior- for example, whether the firm





anticipates or reacts to discontinuities in the environment, and (b) by observing the capability profiles of the firm that produce different types of responsiveness. These data are generated by measuring (by completing 5 assessments) General Management Capabilities, Firm Culture, Firm Structure, Firm Systems, and Firm Technology and Capacity of Management.

### ***Strategic budget***

This variable is derived from RBT, which is also derived from Ansoff's work. Kipley (2012) revisited the concept but rendered it more meaningful and quantifiable: SB is defined as the percentage of financial resources a firm invests relative to the market leader. It is divided in the areas of R&D and Operations. There is a critical mass defined as the strategic break-even point: each component of SB must be at or above its own critical mass level; misallocation of budgets can have negative consequences for a firm.

### ***Future competitive position***

The future competitive position is defined as assessment of a firm's position relative to the industry using both hard data (financial, profits current, and estimates) and soft data (professional opinions) (Kipley, Lewis, & Jeng 2012). Such factors assess the likelihood of the firm achieving a competitive advantage allowing greater sales or margins/or retain more customers than its completion.

### ***Future prospect of the industry***

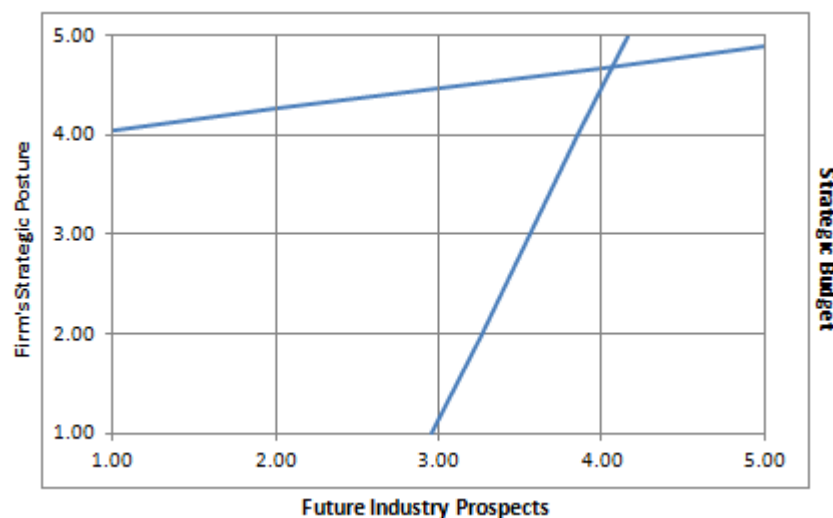
The future prospect of the industry is defined as a comprehensive assessment of multiple



growth factors that are determinants of the future sustainability of the industry (Kipley et al,2012). Such factors also illuminate the Future Stage of the Industry Life Cycle, and if within such stage, growth will support the firm's viability to compete (Kipley et al, 2012).

### *OSPP matrix*

The results from the four measured variables (Strategic Posture, Strategic Investment, Future Competitive Position and Future Industry Prospects) are plotted in a matrix (see Figure 2).



**Figure 2.** Firm's future competitive position (COG of IBM).

The nexus of the vertical variables (Strategic Posture and Strategic Budget) and the horizontal variable (Future Competitive Position and Future Industry Prospect) indicate the firm's "Center of Gravity" (COG). The COG is the firm's performance position (on a scale from 1 to 5) relative to optimal performance positioning (level 5 on



the scale). The higher the COG, and closer to the right corner of the OSPP matrix (5, 5) the higher the optimal future financial performance of the firm will be.

### ***Hypotheses***

The proposed study will not analyze one single hypothesis (one relationship: multi-nationality – performance or strategic management – performance), but also hypotheses including a third variable that will further articulate our hypotheses and the relationship taken into consideration.

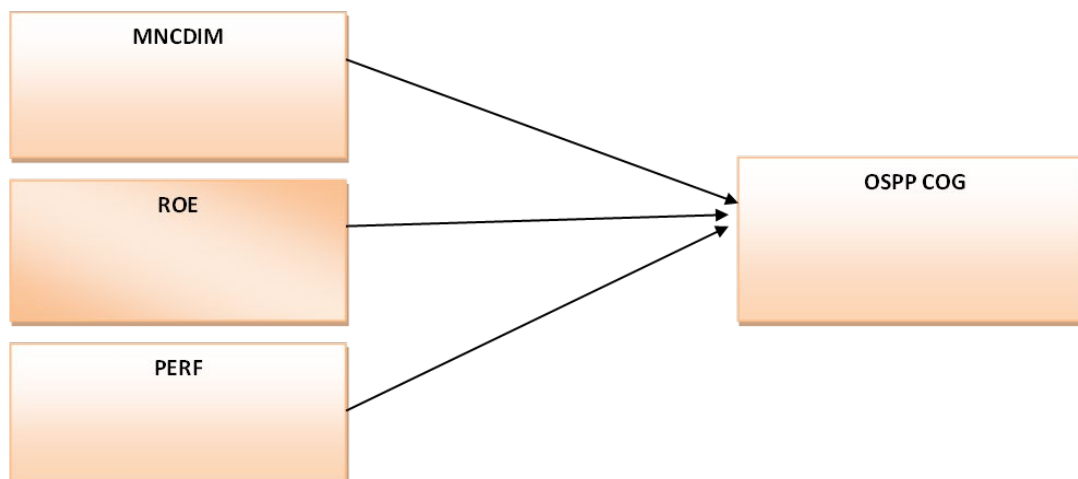
***Hypothesis 1:*** The greater the MNC dimension (MNC absolute foreign sale 2019), the better the strategic management (OSPP COG).

***Hypothesis 2:*** The better the strategic management “action” in terms of OSPP COG value, the higher the MNCs Return on Investment (ROE 2019).

***Hypothesis 3:*** The better the strategic management “action” in terms of OSPP COG value, the higher the performance of the MNC’s stock (PERF 2019).

### ***Research framework***

The research framework is shown in Figure 3.



**Figure 3.** Research framework

- The above given framework illustrating the total four variable from which three are independent meanwhile only one is dependent. That is OSPP-COG, The COG is the firm's performance position (on a scale from 1 to 5) relative to optimal performance positioning (level 5 on the scale). The higher the COG, and closer to the right corner of the OSPP matrix (5, 5) the higher the optimal future financial performance of the firm will be. It has been examined by considering the various other variables according to OSPP matrix.
- MNCDIM is defined as the total foreign sales expressed in absolute US\$ amounts. According to the data supplied by the Dow Jones, Standard and Poor Index Services, it is effective
- ROE is defined as "the amount of net income returned as a percentage of shareholders equity. Return on Equity measures a corporation's profitability by revealing how much profits a company generates with the money shareholders have invested"



- PERF is illustrating the stock performance, when market conditions are good, stock performances tend to be higher; when they are poor, stock performances are lower

## Methods

The MNC dimension is defined as the total foreign sales expressed in yearly absolute US\$ amounts. According to the data supplied by the Dow Jones, Standard and Poor Index Services, I selected five top MNCs in absolute US \$ (on average in the last decade) domestic sales among those of the index Standard and Poor 500 for this study (see Table 1).

**Table 1.** Top companies' standard & poor 500 for absolute dollar sales (\$Billion)

Company	Ticker	Sector	Tot. Int. Rev. 2019	% Tot. Rev. 2019
WALMART STORES	(WMT)	Cons Staples	\$120.82	23.35%
EXXON MOBIL	(XOM)	Energy	\$136.86	51.65%
APPLE	(AAPL)	Inf Tech	\$143.27	55.06%
INTL BUS MACH	(IBM)	Inf Tech	\$57.540	53.04%
PROCTER GAMBLE	(PG)	Cons Staples	\$30.45	45.00%

(Data provided by Dow Jones – Standard & Poor)

With the same criteria above, I selected five bottom MNC of the S&P500 for yearly absolute sales (on average in the last decade) for this study (see Table 2).



**Table 2.** Bottom companies' standard & poor 500 for absolute dollar sales (\$Billion)

Company	Ticker	Sector	Tot. Int. Rev. 2019	% Tot. Rev. 2019
INTUITIVE SURG	(ISRG)	Health Care	\$1.35	30.13%
CERNER CORP	(CERN)	Health Care	\$0.65	11.42%
RYDER SYST	(R)	Industrials	\$8.92	12.10%
US STEEL	(X)	Materials	\$2.42	18.70%
HESS	(HES)	Energy	\$1.19	18.33%

(Data provided by Dow Jones – Standard & Poor).

For the 2019 performance of the stock of the 10 MNCs (top foreign sales and six bottom foreign sales), I used the data of Bloomberg Financial to determine the percentage of stock appreciation or depreciation). It is assumed that there is a high correlation between the financial results of a MNC (Net Income) and the stock performance of it. Additionally, I selected for every MNC another financial indicator: Return on Equity (ROE). The ROE is calculated as:

*Return on Equity = Net Income / Shareholder's Equity*, and it is defined as “the amount of net income returned as a percentage of shareholders equity.

Return on Equity measures a corporation's profitability by revealing how much profits a company generates with the money shareholders have invested” (Investopedia.com, 2013). I selected the ROE because this is a popular indicator used by financial analysts and strategy scholars, alike. Furthermore, differently from stock price, ROE is not distorted by the moderating effect of “General Stock Market Conditions.” When market conditions are good, stock performances tend to be higher; when they are





poor, stock performances are lower. In 2019 market conditions are defined as being robust and the S&P 500 appreciated by 28.9% its biggest one-year gain since 2013, when it rallied 29.6% (Standard & Poor data). See Table 3 for a description of the variables used in this study.

**Table 3.** Ten MNCs for COG, stock performance and ROE (2019)

Company	Ticker	Sector	COG	% Stock Perf 19	ROE 19
WALMART STORES	(WMT)	Cons Staples	3.5	27.58%	9.20%
EXXON MOBIL	(XOM)	Energy	3.7	(0.31%)	7.24%
APPLE INC	(AAPL)	Inf Tech	4.0	89.10%	55.90%
INTL BUS MACHINE	(IBM)	Inf Tech	4.7	17.92%	51.35%
PROCTER GAMBLE	(PG)	Cons Staples	4.1	26.87%	9.29%
INTUITIVE SURG	(ISRG)	Health Care	3.5	20.61%	18.17%
CERNER	(HSP)	Health Care	3.0	29.62%	11.39%
RYDER SYST	(R)	Industrials	3.0	17.45%	(0.95%)
US STEEL	(X)	Materials	2.8	(16.46) %	(14.96%)
HESS	(HES)	Energy	2.8	36.15%	(4.02%)

### Data preparation

**Table 4.**

Company	Sector	MNCDIM	COG	% Stock Perf 19	ROE 19
WALMART STORES	Cons Staples	120.82	3.5	0.28	0.09
EXXON MOBIL	Energy	136.86	3.7	0.00	0.07
APPLE INC	Inf Tech	143.27	4.0	0.89	0.56
INTL BUS MACHINE	Inf Tech	57.540	4.7	0.18	0.51
PROCTER GAMBLE	Cons Staples	30.45	4.1	0.27	0.09
INTUITIVE SURG	Health Care	1.35	3.5	0.21	0.18
CERNER	Health Care	0.65	3.0	0.30	0.11
RYDER SYST	Industrials	8.92	3.0	0.17	-0.01
US STEEL	Materials	2.42	2.8	-0.16	-0.15
HESS	Energy	1.19	2.8	0.36	-0.04

### Results and Analysis

I analyzed the data using SPSS statistical software. Descriptive statistics (see Table 5) indicate the means for the predictors OSPP\_COG = 1.4167; for PERF\_19 = 1.0017; and, for ROE = 3.06. and the mean value for 17.262. The variable Multinational Company Dimension (MNCDIM) was coded: 0 = “Least 5” and 1 = “Top 5.” There are no missing data with  $N = 10$ .



**Table 5.** Descriptive statistics

	N	Minimum	Maximum	Mean	Std. Deviation
COG	6	.09	3.51	1.4167	1.64072
ROE	6	.07	8.92	3.0620	4.53773
PERF	6	.11	2.42	1.0017	1.10847
MNCDIM	6	-.01	50.35	17.2623	25.63125
Valid N (listwise)	6				

A regression analysis is following below:

### *Regression analysis*

**Table 6.** Regression analysis table

Model Summary <sup>b</sup>				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	1.000 <sup>a</sup>	1.000	1.000	.00000

<sup>a</sup> Predictors: (Constant), MNCDIM, ROE, PERF

<sup>b</sup> Dependent Variable: COG

### *Interpretation*

The above given table of the model summary is representing the values of the R square and R. In Table 7, the value of the R is representing simple correlation among the variables and the value of the R is 1.00 that is indicating correlation with the high degree.



It has been indicated by the value of R square that how much total variations are occurred among the dependent and independent variables.

It represents that the 100% variations are occurred among the dependent and independent variables. It shows that the 1% change in dependent variable, the independent variable is changing 100%.

**Table 7.** The Values of the R square and R

ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	13.460	3	4.487	.	.000 <sup>b</sup>
	Residual	.000	2	.000		
	Total	13.460	5			

<sup>a</sup> Dependent Variable: COG

<sup>b</sup> Predictors: (Constant), MNCDIM, ROE, PERF



**Table 8.** Coefficients Table

Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients			T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.085	.000	.	.000	
	ROE	.071	.000	.196	.053	
	PERF	.061	.000	-.041	.002	
	MNCDIM	.068	.000	1.064	.013	

<sup>a</sup>Dependent Variable: COG

**Table 9.** Residual statistics Table

Residuals Statistics <sup>a</sup>					
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	.0900	3.5100	1.4167	1.64072	6
Residual	.00000	.00000	.00000	.00000	6
Std. Predicted Value	-.809	1.276	.000	1.000	6
Std. Residual	.	.	.	.	0

<sup>a</sup>Dependent Variable: COG

### ***Interpretation***

The above given table is representing the values of the coefficients. It has been observed that the values for all these variables are positive meanwhile the entire variables are



significant because the significant value for all variables are less than 0.05. It shows the relationship exist among the variables but not significantly.

### *Pearson correlation*

In Table 10 the Pearson correlations can be found

**Table 10.** Pearson correlation table

Correlations		COG	ROE	PERF	MNCDIM
COG	Pearson Correlation	1	-.360	-.391	.991**
	Sig. (2-tailed)		.483	.444	.000
	N	6	6	6	6
ROE	Pearson Correlation	-.360	1	.990**	-.484
	Sig. (2-tailed)	.483		.000	.330
	N	6	6	6	6
PERF	Pearson Correlation	-.391	.990**	1	-.511
	Sig. (2-tailed)	.444	.000		.301
	N	6	6	6	6
MNCDIM	Pearson Correlation	.991**	-.484	-.511	1
	Sig. (2-tailed)	.000	.330	.301	
	N	6	6	6	6

\*\* Correlation is significant at the 0.01 level (2-tailed).

### *Interpretation*

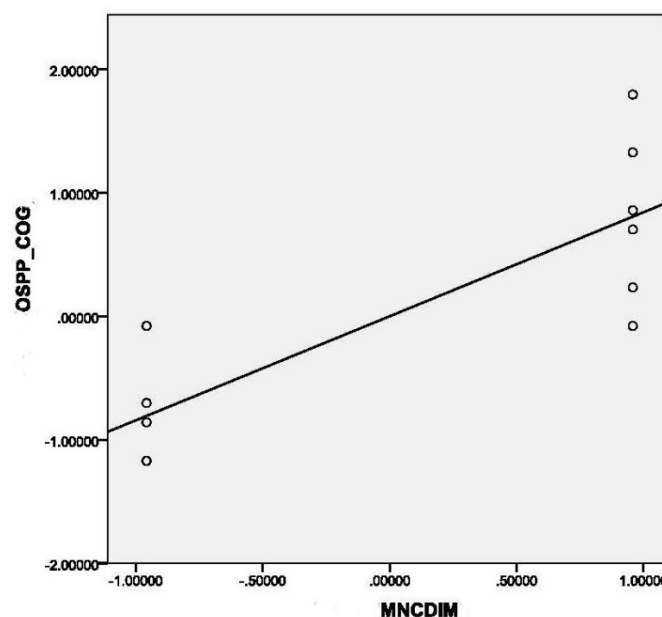
The correlation analysis has been applied to explores the relationship among the variables this analysis shows that there is positive significant relationship with each other. Following the outcomes of statistical test of correlation, we can conclude that all variable





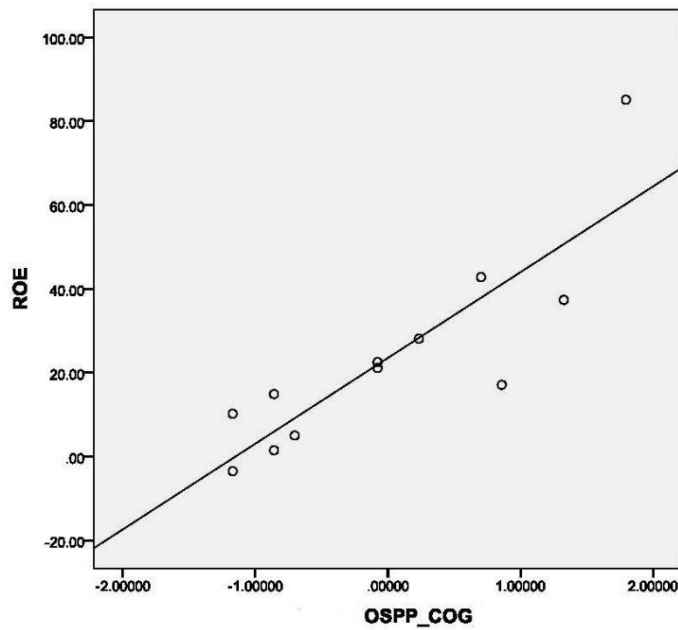
is having positive direct relationship. Changes occurred in one variable are causing to bring changes in other research variables as well. The selected significance level for the correlation test is 0.01. Comparing results with the significance level we can say that all research variables have strong positive relationship, and they are strongly correlated with all of these factors as they represent a greater correlation significance value of 0.951.

It was then necessary to standardize the scores for each variable (because they were measured on different scales) to conduct correlational analysis. Utilizing Pearson's  $r$  analyses (which accommodates point-biserial correlations), the results indicate that there was a large, positive, significant relationship between MNCDIM and OSPP\_COG,  $r = .84$ ,  $p \leq .05$ . There was also a large, positive, significant relationship between OSPP\_COG and ROE,  $r = .86$ ,  $p \leq .05$ . Finally, there is a large, positive relationship between OSPP-COG and PERF-10,  $r = .48$ ,  $p = .12$ . Figures 4 – 6 illustrate the relationships mentioned above via scatterplot, respectively.

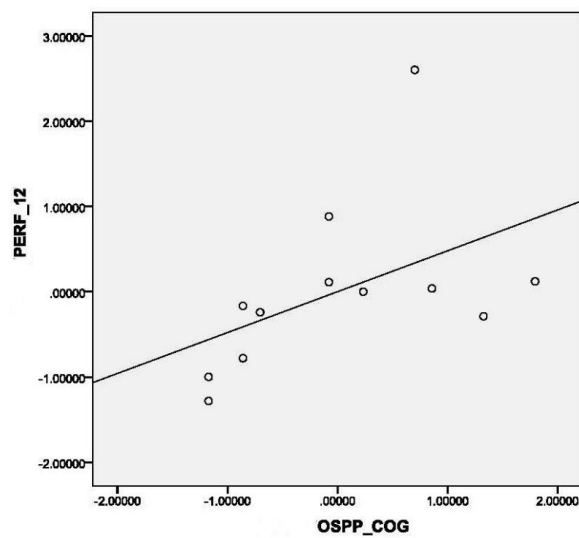




**Figure 4.** The positive, linear relationship between MNCs and COG.



**Figure 5.** The positive, linear relationship between COG and MNCs-ROE.





**Figure 6.** The positive, linear relationship between COG and MNCs-Perf 12.

These results support all three of my stated hypotheses.

## Discussion

The multi-nationality dimension is significantly correlated with the action of a superior strategic management performance of a firm and vice-versa. That indicates that the best performance of the largest MNCs is not due just to their wide international expansion and critical mass, but how expansion and critical mass have been managed sustained and built by a capable strategic-management qualitative performance. In other words, the results indicate that the advantages of an international expansion of a MNC are not direct (often indicated by the classic literature) but are influenced by OSPP as the combination of 4 Strategic variables generating a firm's positive strategic performance.

The variable OSPP\_COG was used as an indicator to determine and quantify the position of a firm's strategic management performance, and that was significantly correlated to the MNCs financial performances. The correlation is stronger in the case of the (direct) relationship between OSPP\_COG and ROE. It is less significantly correlated, when we considered an indirect relationship between OSPP\_COG and MNCs stock price performance as a proxy of MNCs performance. This may be due in part to the moderating effect of the stock market.

The significant results in terms of the correlation between OSPP\_COG and performance is also relevant from a methodological point of view. They confirm the empirical validity of the OSPP (Kipley, 2012), and make it suitable for further studies



with the objective to analyze the relationship between a firm's strategic management and financial performances.

### ***Limitations***

The main limitation of the study resides on the fact that our sample was restricted to 10 companies out of the 500 of the Index Standard and Poor 500. However, even given this limitation, the importance, and the relevance of the action of a superior strategic management performance in evaluating the financial performances of a MNCs can be inferred.

### **Conclusion**

In this study, I attempted to give to the MNC a definition more in line with the ongoing process of a MNC massive globalization and increasing complexity. I illustrated how the traditional literature on MNCs postulates a direct relationship between multi-nationality and performance. I also summarized the Transaction Cost Theory (TCT) and the implications on the definition of MNC and its important influence on Strategy Research. Equally, I summarized the Resource Based Theory (RBT) and its logical evolution conducted and how its evolution relates to known Ansoffian concepts. Finally, I introduced into the relationship between MNC and its performance a third variable, the OSPP\_COG. The results support my hypotheses of positive linear relationships between multi-nationality and OSPP\_COG, and OSPP COG and performance (in terms of stock price and ROE).



## Acknowledgements

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## Disclosure statement

No potential competing interest was reported by the author.

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## **Social Media: Marketing Approaches in Hotel & Restaurant Management in India**

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### **Abstract**

Communication, the process of by which people can get information through sending and receiving messages, it is crucial for understanding and providing knowledge to people. It helps to people to understand and venerate their environment, and facilitate relationships between and among listener and speaker. In the revolutionary phase of social media there are a lot of modes by which customer can get to know about the catering establishments facilities and feedback as well as the review and suggestions. It helps to them about the make a mind set about the services which is provided by the hotels. Social media application help to assist the management about the need and demand of their valuable customers as well as it help to guests to update their self about the latest trends and events.

**Keywords:** Social Media applications, Strategies, Marketing, Tools

### **Introduction**

Communal media is one of the major platforms now a day which help to increase the guest footfall in the catering and hospitality sector. And both can update their self about the latest concept and trends.

(Adetunji, 2018) Communication can be many types few of these are verbal or written, formal or informal, verbal or nonverbal, traditional or modern It doesn't matter whatever form it is, the main motive of communication is to pass the information through one person to another. Social media is one of the source by which anyone can pass the information or promote their self-entire the globe.

In the modern era Social media has developed one of the greatest widespread tools for advertisement, by which any of the sector including hospitality industry can promote their business



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entire the globe. (Alves, 2016) With the growth of reasonable cell handsets, acquaintance in computer operation and easy access to the internet, social media has reached the hands of everyone. “The appearance of social media has ultimately showed the straight connection between the professionals & its conclusive buyer. Social media has completely become the mode of branding, publicity & promotion”. (Khan, 2015) None of the business can escape from the effect of social media in the current age. Over the past couple of decade, technology in communication & transportation has transformed the hospitality industry and it is also important that how social media and internet technology with the guest. (Anderson, 2010) Almost all the hotels are providing the mobile check in facilities, UPI payments transaction and CRS and many other facilities. The revolutionary uses of the social media added Millions of users and number of users also getting increases too. In this book chapter I am trying to analyze how social media act like as the marketing tool in hospitality sector.

(Curley, 2014) Hospitality is one of the fastest rising businesses in the domain nowadays. In past between 18<sup>th</sup> to 20<sup>th</sup> century many of the travellers use to travel entire the globe due to the religious purpose, later on that religious tour become the habit of human life and then they try to roam entire the globe for leisure purpose. And the revolutionary phase in technology and transportation make it easier. Early of 21<sup>th</sup> century a bit of uses of technology changed the human life but last one decade technology completely changed the lifestyle of human being as well as the way of doing business in market. Millions of the e shops are available now a day and also hospitality industry does influenced by the uses of social media.

(Dwivedi, 2015) In Catering industry or customer oriented businesses social media have transformed the proportions of registration, reservation, communications, and cash disbursement methods. There are as many of the advantages of social media also there is a dark side of social media. A lot of care must be taken care as the time of uses of social media as the promotional purpose. If it is used in a proper manner & taken care, it can contribute any business a enormous paybacks but if it unsuccessful to do so it can ruin or spoil the image in a short span of time.

(Erdoğan, 2010) Social media is a very useful part of everyone lives. With millions number of user are active in social media on daily basis Now that social media application become noon payable to pay and then play, now all the hotel brands are sharpening their social media strategy to get ahead of the game, because now a days if hotel brand are not active in social media that means definitely they will lose their business as well as customers. Once hotels brans lost their base customers it's impossible to get back them. So for that hotels have their social media experts' team who make them alive in the market.



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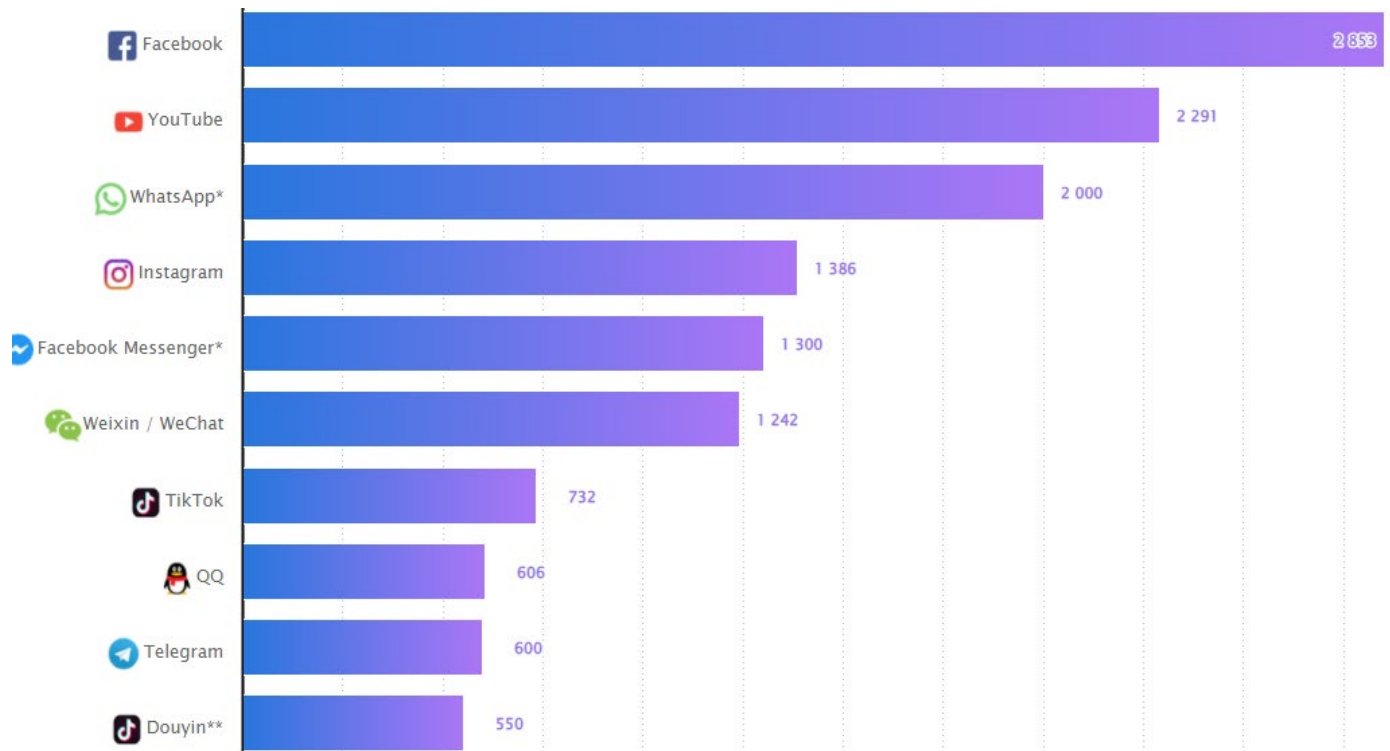
(Bashar, 2012) Social media marketing platform increases the uses of available application sites identify the presence of product on internet or virtual mode and increases the sale and promote the hotel services in market. Social media sites help to associated and enhance the social networking of business. With the help of social media networking application industry substituted the concepts and information. Social media marketing uses podcasts, wikis, vlogs, virtual videos, snap sharing, bulletin sharing, communication boards, and updates related to hotel or business promotion on social networking sites such as Facebook, Instagram, twitter etc. to reach a maximum number of targeted audience.

## **Specific social media channels**

There are many of the social media channels which provide a platform to hospitality sector to showcase their product and market them and enhance the reputation and popularity of hotel or restaurant. Some of those are following which act as a marketing tool in hospitality sector.

### **Facebook**

Facebook is one of the major channel by which most the hospitality property market themselves and make themselves familiar in market. As per the Acodez survey in last quarter of 2021 there were 2853 million of active users of Facebook and India is the first where it stands on top. Most of the hotels have their Facebook page and over there they share all the information about the event in written form or video form. Page was followed by the customer once they were aware about the same. It is the responsibility of hotel staff to inform their customer about the same and the experts of the social media team responsible about the same how they can make it creative and share with customer. Social media creative team uses the Picture of hotel's interior and exterior decoration, share live video, post video, vlogs and many other and Inspire targeted audience to put location tags or to tag you property in their photos and videos in exchange for a return so that you can increase rendezvous.



**Fig.1. Number of Active users in millions**  
(Source: <https://acodez.in/facebook-users-worldwide>)

The above data shows the number of active users of various social media applications. The data was got through the Acodez survey. It reflects that Facebook, WhatsApp, YouTube Instagram and Messenger are the top five applications which are used by the public and hotel promote their self on that platform with the help of video, messages, catboats and templates etc. also share the latest celebration and activities which is planned for future, it helps to make their face familiars in market. And customers try to visit the property.

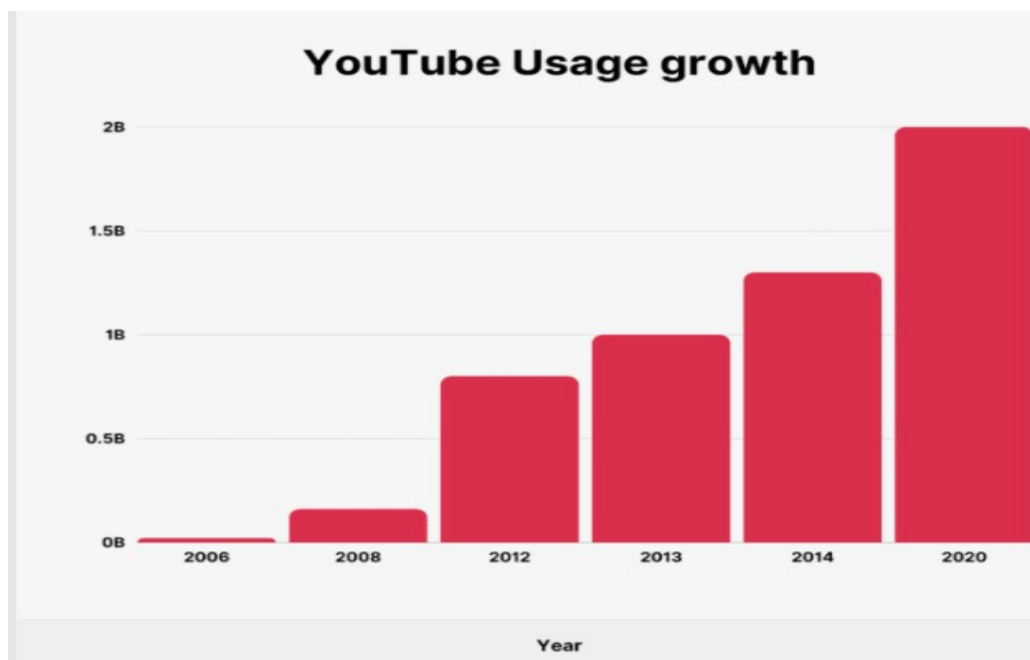
### YouTube

YouTube has itself about two billion users monthly. This is succeeding largest exploration engine behind the Google. Without YouTube none of the marketing strategies can make stood themselves in market. With the help of YouTube hospitality sectors can create their channel directly and connect with their customers.



Also social media team does the training session for the employee about the same how can they make their customer subscriber of the hotel's YouTube channel. In the modern Covid19 era YouTube is one of the primary key tool for marketing strategy by which hospitality sector can give the virtual tour to their customers about the amenities and hotel facilities.

Because Covid19 Changes the entire perception about the hotel visits. Now many of the guest first do the virtual tour then confirm the reservation with hotel, restaurant and other catering establishment.



**Fig.2 You Tube's user growth**

(Source: <https://backlinko.com/youtube-users>)

### TripAdvisor

TripAdvisor is one of the most popular channels in Hospitality sector. Here guest can give their feedback and suggestions as well. It is one of the popular marketing strategic channels for catering industry.





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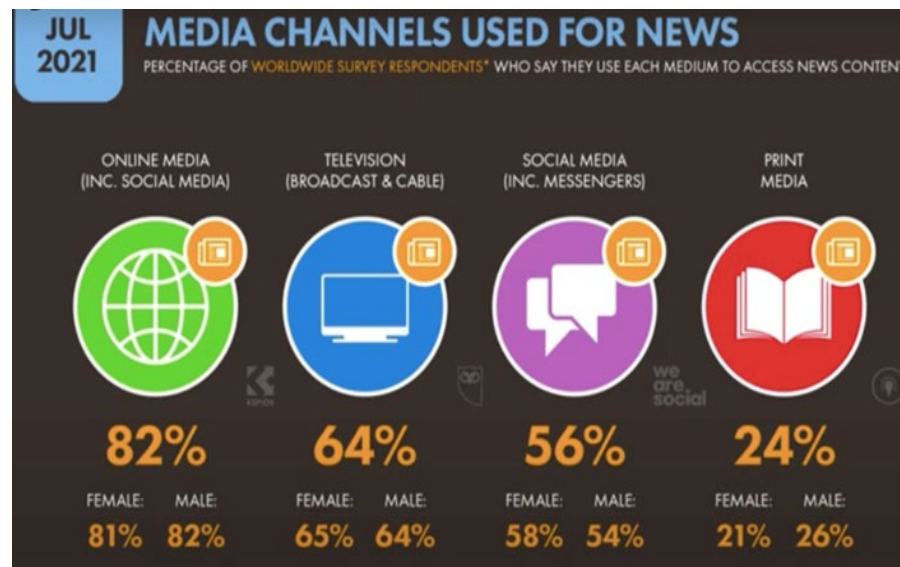
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As per the TripAdvisor website, they itself receive 463 millions of users in a month. And also millions of users use the channels for giving and getting the positive or negative review about the hospitality industry. And it is a tremendous tool for marketing strategy. Now a day's marketing is depends upon the maximum number of positive reviews. More number of positive reviews gives maximum number of profit to the any of the sector. Many f the customers after completion of the visit uses the TripAdvisor channel for giving their feedback. The maximum reservations you have, that means maximum number of review hotel or the individual will get, so it's a great way to spread word of mouth without spending a single penny.



**Fig.3 Channels used for news**

(Source: Global social media statistics research summary 2022)

## Instagram

Instagram is one of the utmost popular virtual platforms which is available for all the travelers entire the globe. Most if the travelers keep themselves updating over there also promote the hotel or restaurant brand. With the help of Instagram, Hotel Social media marketing team increase the guest fait and make it easier for all the guest to share their experience and view about the property through the virtual mode, and it help to them the market their product without any expenses. Marketing team help travelers to find out the information about hotel or restaurant location as well as the information about future functions and events.



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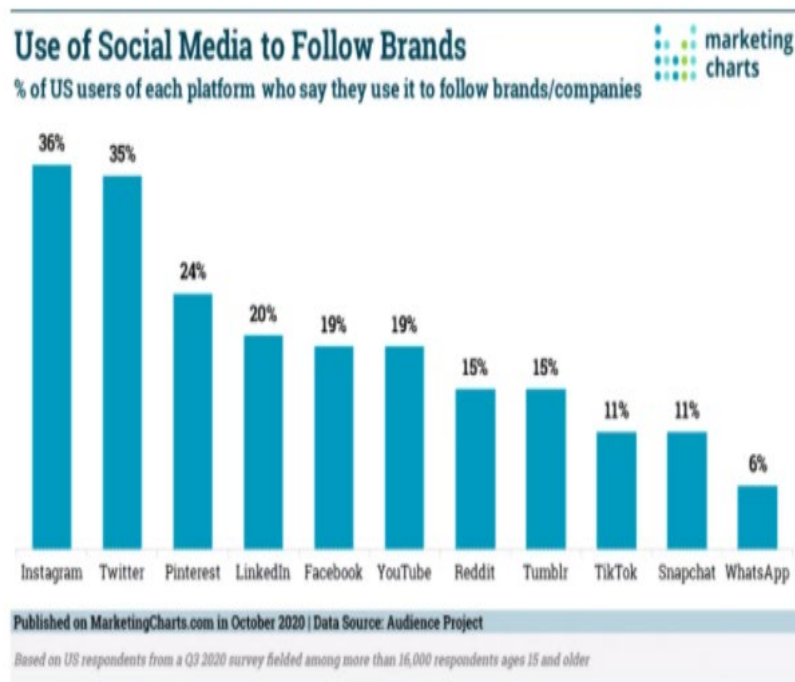


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Here few of the steps need to follow for consistently increasing the hotel business through social media.

- Identify your target audience for increasing business.
- Regular update on social media post event or live update.
- Consistency makes you brighter.
- Engage with Audience.
- Don't make it complicated to share the images through social media app



**Fig.4 Use of Instagram as compare to other social media**  
(Source: <https://sproutsocial.com/insights/instagram-stats/>)

## Conclusion

This study helps to recognize the perception and significance of social media in the hospitality sector. This study helps to identify the conception of virtual media marketing and its promotion approaches in the hospitality and catering industry. In modern era doing business is not an easy task, all the sectors including hospitality sector need to be more active on communal media. And use it as a promotion instrument, because more visibility makes you more powerful in market, and



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promote the business. Although hospitality sector have their own websites, but most of those have need to be more active on social media application such as Meta, Twitter, Instagram, TripAdvisor etc. And post informative and interesting videos and photographs. With the help of that kind of activity they can increase their business and increase their brand value. Social media engineering is very important for sustaining the business in market. Through using social media channels Hospitality and other food and beverage outlets can connect straight with consumers and target audiences, to endorse their brand more professionally, improve status, revisits of clientele, increase clients loyalty and increase the transactions of organization.

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## **The Importance of Vocabulary in Teaching and Learning in Applied Linguistics**

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### **Abstract**

The importance of teaching and learning vocabulary and presenting a comprehensive survey of modern English vocabulary, focusing on various linguistic descriptive frameworks and pedagogical contexts. The linguistic approaches to the analysis of the modern lexicon in English are discussed in detail, emphasising vocabulary and language learning, dictionaries and lexicography, and the literary and stylistic study of vocabulary. The perspective of this study is a vital resource for students and researchers to investigate the terminology of vocabulary within English language learning and its importance.

**Keywords:** Importance of Vocabulary, teaching and learning, applied linguistic.

### **1. Introduction**

Classroom vocabulary is the most challenging aspect of communication and is labelled the most problematic area by teachers (Celik & Toptas, 2010). Even though learners know the language's grammar, communication will break down if they do not know the correct word. Various researchers, scholars, and language teachers have conducted studies over the past several decades to find out which strategies are effective for vocabulary learning (Levenston, 1979). Oxford (1990) argued that fluency in a language involves the memorization of vast





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volumes of vocabulary. A cause of forgetting was noted by Celce-Marcia (2001), Krashen (1997), and Brown (2000). Pupils who have limited word awareness aren't able to combine information from different sources and generalise from words they've already learned to new words, says Schouten-van Parreren in 1989, Rashid, M. H., & Sipahi, E. (2021).

One way to train your language skills is to teach you essential words and show you techniques to understand more words (Hulstjin, 1993, cited in Morin & Goebel, 2001). A hundred trillion bits of information is technically feasible, but not enough of it can be used until recall techniques come to the learner's assistance. During vocabulary learning, words serve as inputs and are allocated to memory (intake). To forget a phrase, learners have to be unable to recall it. Mnemonic devices (memory strategies) help words stay in long-term memory to be appropriately assimilated and promote later retrieval. The problems that students have with long-term vocabulary and the problems that teachers have with teaching it well are solved in the current research.

## **2. Importance of Vocabulary in Teaching and Learning in Applied Linguistic**

Students would not comprehend others' ideas or communicate their own ideas if they did not have a broad vocabulary. Wilkins (1972) observed that while spelling is essential, word use is all-important. This represents my own experience: even without syntax, I can interact with some sufficient vocabulary and phrases. Language's nature is known as "lexis." When students' fluency and speech in English increase, it is essential for them to improve their word awareness and learn their language learning techniques. Students have a deep urge to learn new words. "Learners carry dictionaries around and not grammar books" (Schmitt, 2010). Learning vocabulary increases students' English speaking skills. Voltaire purportedly said, "Language is challenging to put into words." "I think most English learners will approve. When teachers are trying to figure out what a word means, they should pay attention to three things: the shape, the context, and the use.



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According to Nation (2001), a word's shape includes pronunciation (spoken type), spelling (written form), and any terms that constitute this object (such as a prefix, root, and suffix). An instance of word pieces can be found in the word "uncommunicative," which features the prefix "un-" and the suffix "-ive," indicating that someone or someone is willing to do something. Everybody uses this term when talking about people that are unable to speak. The definition, the objects it applies to, and the meanings that come to mind as people think of a particular word or expression are all facets of meaning.

As described, use includes grammatical roles of words and phrases, collocations that go with them, and restrictions on use, such as frequency, degree, etc. According to Nation (2001), there are two dimensions: receptive and productive. Vocabulary is among the most critical language-learning skills. This is the foundational strength for all other talents. Vocabulary is the students' fundamental way of using English efficiently. When students watch a movie, listen to an English song, read an email, or send a letter to a friend, they will still need to use the English language. For the remainder of this introductory chapter, the emphasis will be on why vocabulary is essential, what makes words challenging, and the key explanations for why students miss their studies.

### **3. An Importance of Language Teaching and Learning**

Students required a wide array of unique word-learning techniques. Word definitions, word relationships, and how we can use words in various contexts are repetitive, in-depth teaching is more likely to affect comprehension (Graves, 2006; McKeown and Beck, 2004). Take aim is an accurate and efficient application of the vocabulary learning techniques listed. The vocabulary goal is for children who can read at least at a fourth-grade level. Target is available in two formats.

### **4. Critical Teaching and Learning in Vocabulary**

The instructor is critical in helping students develop their vocabulary. Sadly, vocabulary instruction has not tackled these concerns, and teachers have not seen the value of encouraging their students to acquire an extensive vocabulary. For a long time, English teachers used teaching methods such as Direct Process and Audio Linguicism, which stressed the primary importance of teaching grammatical structures. In classes where the accent was on grammar,



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the new vocabulary was restricted and only applicable to the grammar constructs taught. A substantial change happened at the beginning of the 1970s: direct Process and Audio linguisticism lost emphasis to the Communicative Technique, which stressed teaching vocabulary. Students learned different vocabularies and speech practices.

Words were incorporated in those classes, and students were advised to speak as soon as possible. Today, the number of approaches to use in English class is more available. The syllabus is made up of vocabulary and grammar constructs. Since there are many classes for each lesson, teachers have time to study and learn vocabulary. Words are no longer an add-on. Teachers now understand that words and their pronunciation, collocations, and word frequency, are essential. Students also face problems communicating themselves fluently and find speaking practices tiring.

## **5. The Significant Areas of Vocabulary Research in Teaching and Learning**

Teachers must first understand the difficulty of the English language for their pupils. Since English is the most-used language by far, understanding enough of its vocabulary can be a challenging task. Other languages frequently add prefixes or suffixes to create entirely new words (like German) or ones like Spanish. Because when you know the processes behind word creation, you can quickly think up and understand many new terms. Because of this, learning English requires acquiring multiple vocabulary that are not formal. This vocabulary would likely form a crucial restriction on how well English is understood (Nation & Meara, 2002). In the 2,000–3,000 community, vocabulary is of better value for speaking, but the experience of about 3,000 families is the minimum threshold for beginning to read authentic documents. Thousands of words are more than sufficient for readers to understand open records. Many novel words should be grasped because of their meaning and to comprehend most of the text's communicative content.



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A vocabulary of this magnitude is required for university study in a second language. In the past two decades, research about learning and teaching L2 vocabulary has increased, and so both teachers and researchers can benefit from reading an entertaining and open work on the subject. In the L2 vocabulary analysis, the authors have provided significant articles, such as step-by-step reviews, that help readers better consume research. The book's 14 chapters can also act as a diverse complement to any library's lexical analysis collection. Both Nation and Webb are well-known lexicographers. The most recent book clarifies how to study different facets of vocabulary, provides expert reviews of current studies, and increases the possibility that readers might perform lexical research. The text was written to serve students interested in the study who want to further their knowledge of vocabulary learning problems and research and teachers who want to use more evidence-based activities in their classroom. The book is aimed at L2 learners interested in vocabulary and not as an introductory text on the study of architecture.

The organisation of Nation and Webb's book simplifies navigation. Readers with a pedagogical perspective will undoubtedly be drawn to the first two parts, that is, the first seven pages, which outline intentional and incidental vocabulary learning and provide some teaching methods for vocabulary teachers to incorporate into their classrooms. Corpus-based analysis involves the construction and usage of word lists. The final section includes material on vocabulary evaluation. Readers interested in science will benefit from seeing several studies in each chapter as the authors discuss and criticise notable studies relating to the chapter's subject. Also, the writers' recommendations for undertaking investigations, reviewing research findings, and recommending studies to bridge differences in information would support researchers. The statistics listed above are realistic, and many learners achieve these standards. These numbers help determine pupils' learning expectations, but they do not inform us which vocabulary the students must know to work in English. The exact terms to be taught often stand out. For example, rookies in a classroom would, among other things, require vocabulary such as "book," "pencil," "read," and "say." Medical students would need to learn the technical vocabulary needed in that field. It is clear that situational and technological vocabularies are



good vocabulary targets, but which vocabulary to teach is not apparent. The best criteria we have for selecting target words is their level of use. Frequent words in English are among the most versatile and quickly acquired. Text coverage significantly affects the utility of frequent terms. Knowing a limited number of English words helps you access a considerable percentage of the standard written text.

## 6. Acquisition in applied linguistic (AL) from the period 2000 to the present

"Operant" activity develops due to environmental feedback and formation. Children learn language by recording and managing reward contingencies. Human language learning is disconnected from reinforcement learning. In Feodor's view, all human languages have a distinct intrinsic language faculty. Both human languages have physical and emotional limits for all species, says F. Feodor (1955), one of Feodor's domain-specific, informationally encapsulated, and intrinsic language definitions, Rashid, M. H., Shamem, A. S. M., & Hui, W. (2022).

## 7. Developed and became Dominant from the 1980s to the Present

NO	THEORY	AUTHOR	YEAR
1	Expedia	Chen	2013
2	Snappy Words	Avinash	2016
3	Quizlet	Imrie	2014
4	Vocab Sushi	Angalakuduru	2014
5	My Dictionary (Usami et al	Usami et al	2015
6	BBC Learning English	Gibbs,	1992

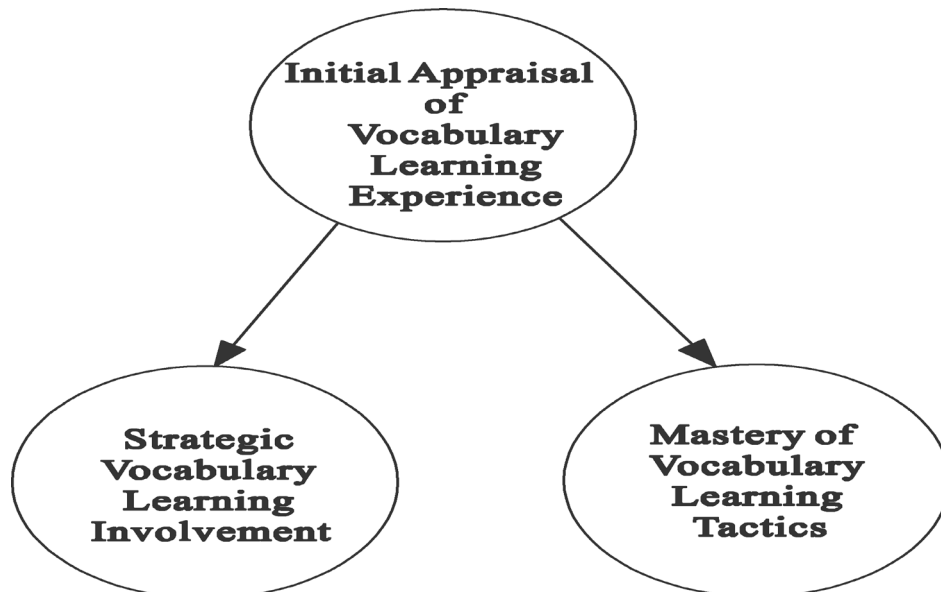


The researchers mentioned above believe that vocabulary learning is necessary for all languages. Vocabulary involves using words in day-to-day communication. Since vocabulary knowledge is involved, you may conclude it would be challenging to learn. There is no generally known theory of vocabulary acquisition. Frey and Fisher (2014).

#### A. Motivation

Geller & Watson, 1995, we can infer that motivation also assists in vocabulary learning; however, to date, there have not been enough empirical or theoretical studies on motivation to firmly conclude on this subject (Laufer & Hulstijn, 2001). Few research has explored the role of encouragement in vocabulary learning (Elley; Gardner & MacIntyre).

**Model of Motivated Vocabulary Learning Schmidt & Watanabe, 2001).**







## **B. Elements of the Model**

We will use structural equation modelling (SEM) to build our model of inspired vocabulary learning. SEM is a new multivariate statistical methodology that helps analyse different relationships. SEM is a verifying test, not an exploratory one. A model is developed from a literature review and then sent for empirical testing in certain instances. We continued by defining the key elements that are essential for inspired vocabulary learning. In conjunction with our previous literature study (Tseng et al., 2006), we came up with six latent variables that SEM researchers often call latent variables. These are the six variables that we came up with.

## **C. Initial Appraisal of Vocabulary Learning Experience**

The latent variable "initial appraisal of the vocabulary learning experience" (IAVLE) is conceptualised as the initial motivational level of vocabulary learning, which can be indicated by value, interest, effort, or desire. The motivation generated at this stage (i.e., choice motivation) has to do with goal-setting, intention formation, and the initiation of intention enactment (Dornyei, 2001).

## **D. Self-regulating Capacity in Vocabulary Learning (SRCvoc)**

The current view of the nature of self-regulating capacity is that it is an aptitude (Winne & Perry, 2000). Moreover, it is viewed as developable and can be influenced by experience: [Self-regulated learning] is now modelled as a "developable" aptitude, an aptitude that changes incrementally with experience and instruction for dynamically adapting how one changes with tasks (Winne, 1996).

## **E. Vocabulary Learning Strategy**

As mentioned earlier, in this study, we divide vocabulary learning strategy use into two components: strategic vocabulary learning involvement (SVLI) and mastery of vocabulary learning tactics (MVLTA). The former refers to the quantity dimension of strategy use, which concerns effortful covert or overt acts to discover or improve particular tactics' effectiveness. The latter refers to the quality dimension of strategy use, which concerns mastering specific or unique covert or overt learning methods to acquire vocabulary knowledge. (Oxford, 1990).



#### F. Vocabulary Knowledge (VOCKno)

As suggested in the introduction, the construct of vocabulary knowledge is quite complicated. However, it has often been conceptualised in terms of vocabulary size and vocabulary depth. It is clear from a wide range of research that specific vocabulary sizes are necessary to do certain things in the language (e.g., Adolphs & Schmitt, 2003; Hazenberg & Hulstijn, 1996; Laufer, 1988; Nation & Waring, 1997).

#### G. Post appraisal of Vocabulary Learning Tactics

We speculate that the use of PAVLT will support future vocabulary learning. This step of the model denotes the time when the mission loop has ended. According to Dornyei (2001b),



#### H. The Hypothesized Model

The latent variables and hypothesised relationships within them shape a cyclic model of driven vocabulary learning. Both paths are used to show how the model will grow in the future (Gardner et al., 1997).

#### 7. Most Prominent Academics in the Field of Vocabulary and their Contributions

Willingness to study vocabulary in TESL is scarce. This study focused on teachers' and students' perspectives on vocabulary teaching and learning. EFL teachers are strongly encouraged to use de-contextual and entirely contextual approaches. A second option is to introduce students to multiple vocabulary learning strategies. Vocabulary mastery was linked to vocabulary learning techniques. Students spent hours studying the language and reviewing their textbooks. Cards will help students comprehend the message. People can acquire a broad vocabulary as well. The image cards will expand and enrich their language and awareness. Students were also facing difficulty comprehending the texts because of a shortage of vocabulary and long texts (Octaberlina, L. R., & Anggarini, I. F. (2020). The ability to recognise both the intent and meaning of words in language exercises, particularly reading, is



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called "vocabulary mastery." This study aims to discover if there is an impact of reading preferences, vocabulary mastery, and critical thinking on sixth-grade students' reading comprehension in elementary schools in South Jakarta. The quantitative study used the route analysis predictive test method, Path mapping is used to analyse interfering variables, Rashid, M. H., Husain, H. J., Islam, J., Sipahi, E., & Hui, W. (2021).

According to these studies, reading, vocabulary mastery, and critical thinking affect reading comprehension among elementary school students. Well-developed vocabulary significantly increases reading comprehension. Students' critical thinking is often affected by critical thinking in conjunction with reading comprehension (Fahrurrozi, R., & Hasanah, U., 2020). Teachers' classroom activities are related to their values. Awareness of this relationship is essential for promoting vocabulary instruction, learning, and learning outcomes. It is helpful to guide existing instructional methods and methodologies by making teachers aware of their ideas about learning. These results can help understand the role evaluation plays in EFL undergraduate programme decision-making. This paper analysed the views and activities of one hundred Jazan University professors on vocabulary learning strategies. Results found that teachers are excited about new vocabulary expansion techniques but ultimately return to innate instruction, disregarding new advances in the area. They recognise that there is a difference between their values and their practises in class. Finally, the study established that teachers recognise that EFL learners' vocabulary problems can be handled, but they need English learners to appreciate vocabulary development highly. According to the results, teaching students' English vocabulary using the game Spelling Bee may be helpful to them. Using the game allows students to learn English vocabulary simply because of the implementation of the method. Among schoolchildren in Turkey, "Spelling Bee" is one way to develop vocabulary and is a popular new game on the playground. Students develop inspiration and language skills; skills while playing also help improve students' self-esteem and self-confidence—efficient preparation and time for autonomy (Al-Awaid, S. A. A. (2020).



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## 8. Teaching & learning of Vocabulary in TESL

A broad vocabulary is a definite aid to students learning English and its four primary skills. Richards and Renandya (2002) stated that vocabulary is essential for foreign language learning and language proficiency. It affects how well learners speak, listen, read, and write. Tan (2001, cited in Utami, 2014) said vocabulary is also essential for language fluency. Teaching vocabulary should be given a great deal of importance in TEFL teaching to develop students' vocabulary mastery. Receptive vocabulary is considered necessary since the language would be first recognised receptively. Practical knowledge necessitates a vocabulary that learners understand, pronounce correctly, and can write and communicate with. Schmitt and McCharty (1997) said that responsive and efficient knowledge can be the only way to accurately measure students' vocabulary skills, so this is what they said, Rashid, M. H., Ye, T., Hui, W., Li, W., & Shunting, W. (2022).

## 9. Conclusions

It has been found that students, in a sense, appear to ignore vocabulary and vocabulary mastery. English teaching will face difficulties and challenges where English is a foreign language. Teachers are unaware of the value of vocabulary acquisition techniques. Survey shows that vocabulary instruction and learning have not been discussed by those studying English as a foreign language. These studies investigated the impact of integrating explicit and implicit vocabulary teaching techniques on students' vocabulary size and reading capacity. The results showed that the mixture of explicit and implicit vocabulary strategies effectively increases vocabulary size and reading ability.



However, previous research reported that students applied metacognitive techniques the most while using social strategies the least. This aligns with most other related research. From the clarification above, it can be deduced that understanding vocabulary instruction and teaching, and learning techniques play essential roles in improving students' vocabulary skills. Significantly, few comprehensive studies have addressed vocabulary teaching and vocabulary learning in context, including the functions and strategies.

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## **A Constructivist Approach to the Teaching of Mathematics in Secondary School**

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### **Abstract**

Constructivism has been an extremely strong model for making sense of how information is delivered in the world as well as how understudies learn. The researcher contends that constructivist educating has frequently been misconstrued and abused, bringing about learning rehearses that neither test understudies nor address their necessities. The researcher frames a portion of the routes in which constructivism has been misjudged and examines multiple manners by which constructivist showing has been abused. The study aims to explore the progress and the trend of researches in this field. The studies are analyzed in terms of their formats, content and methodologies. The constructivist approach depends on the possibility that information can never be passed starting with one individual then onto the next. This study was content analysis research in the field of teaching and learning with constructivist approach. The best way to get information is to make or build them. The constructivist approach changes likewise the job of the educator in the instructive cycle, the errand of them is to coordinate the climate so the understudy himself could built the mental structures that educator needs to give him. The idea of the constructivist approach is recognized, various viewpoints seeing science schooling are dissected as well as the likely effect on the advancement of mathematics skills with regards to manageable improvement was talked about it. This study demonstrated that the constructivist approach fundamentally changes the most common way of instructing and learning science, interfacing it with day-to-day existence, instead of showing just dynamic equations and utilizing an innovative way to deal with numerical undertakings settling. This study shows that utilizing constructivist way to deal with the educating of science, the skills required for maintainable advancement are supported. The benefactors are students, teachers, school managements and the parents.

**Keywords:** *Teaching, Constructivism, Secondary & Mathematics classroom*

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## 1. Introduction

A seed of my way of life as an educator was established in the second seven day stretch of the case courses in the Master of Teaching program, when we inspected "The BIG Four Learning Theory-Isms" - behaviorism, cognitivism, humanism and constructivism. Constructivism seemed like "genuine" figuring out how to me. As I keep on encountering, research and notice constructivism in real life, my vision as an educator has developed. The researcher desire is to be an educator in full sprout, working with understudies' numerical comprehension in an optional class room grounded in constructivism. The researcher examines the idea of instructing and learning in view of the academic uses of constructivism in optional arithmetic training. In view of an assessment of the benefits and hindrances of this way to deal with training, The researcher has presented areas of strength for a for embracing constructivism for educating Mathematics subjects. Meaning in this way that an individual's methodology towards schooling decide his/her exhibition and practice inside or outside the homeroom. Homerooms that training constructivist exercises engage the students to get to their encounters and convictions that reshapes their earlier information in the illumination of the applied course happy. Notwithstanding, to have powerful instructing and learning in the study halls the significance off's how educators might interpret constructivist hypothesis, standards and instructional method ought to likewise be underlined. Olsen (1999), contends that normal viewpoint of constructivism is the understudy's development of information which is essentially an educational experience that includes change. Since the development is the most common way of learning, instructors play a major part like (a) to impact, or make propelling circumstances for understudies, (b) assume a sense of ownership with making issue circumstances, (c) encourage obtaining and recovery of earlier information, (b) make the method involved with learning not the result of learning (Olsen, 1999). Rahimi and Hematiyan pinpoints that incredible weight is on the educators' shoulder; since, he/she as a teacher or like a film chief who should prepare to have an innovative homeroom and make the understudies inspired (Rahimi & Hematiyan, 2012). Learning, as far as neurological, mental and humanistic viewpoints show that development of information is an all-encompassing cycle and includes both social and full of feeling components as opposed to being unadulterated conduct or mental peculiarity (McCombs, 2000). Twenty first century necessities have changed the training climate from educator fronted structure to student focused homerooms. Moving starting here, showing approaches are progressively planned around constructivist approach where students are accepted to make new understandings by coordinating their current information with new encounters (Fer, 2009).

## 2. Review of Literature



Review of literature has many topics were reviewed, what is constructivism, today constructivism needs, traditional teaching and constructivism in the mathematics class room.

## 2.1. What is constructivism

Constructivism is characterized as "that philosophical position which holds that any alleged the truth is, in the most quick and substantial sense, the psychological development of the people who accept they have found and examined it" (Saunders, 1992, p. 136). According to this point of view, learning is perceived to be a self-controlled course of settling internal contentions that become clear through substantial experience, conversation, and reflection (Brooks & Brooks, 1993).

There are three major tenets of a learning theory based on constructivism (Saunders, 1992).

- Meaning is constructed in the mind of the learner as a result of the learner's interaction with the world and cannot be communicated by a teacher to a student. "Wisdom can't be told" (p. 136).
- "The construction of meaning is a psychologically active process which requires the expenditure of mental effort" (p. 137).
- "Cognitive structures are sometimes highly resistant to change, even in the face of observational evidence and/or formal classroom instruction to the contrary" (p. 138).

Thoughts regarding constructivism are not new. Parts of constructivism can be found as far back as 470-320 B.C. as Socrates, Plato and Aristotle portrayed the development of information. Vico, in any case, first formalized constructivism when, in 1710, he made sense of that, "the fact of the matter is equivalent to the made". In the eighteenth hundred years, Locke and Kant (Crowther, 1997) further definite constructivism. They accepted that no individual's information could go past their experience. Ceccato and Dewey again developed these thoughts in the 20th hundred years (Von Glasersfeld, 1987a).

Nonetheless, the significant improvement of constructivism as a way of thinking is for the most part credited to Jean Piaget (Crowther, 1997; Opper, 1979) working in the 20th 100 years. Piaget's constructivist learning model or mental constructivism (Saunders, 1992) starts with a progression of data from the understudy's faculties into the design of their brain. The understudy then has three options: (1) don't completely accept that the perceptions, (2) don't mind for sure, or (3) adjust seeing so the perceptions fit the expectations. This last decision is called mental rebuilding or significant learning. That's what Piaget's examination showed assuming mental rebuilding is to happen, the understudy should be furnished with rehashed, exploratory, request situated action that will exhibit that his past comprehension is at this point not helpful (Opper, 1979).

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Piaget contended that understudies advance by building their own comprehension while doing involved assignments that are formatively suitable, and by moving from cement to additional theoretical thoughts. He hypothesized that understudies effectively build a comprehension of a static group of information at formatively suitable times, and use language to offer their viewpoints. The conceptualization of constructivism keeps on advancing today to incorporate revolutionary constructivism, and constructionism. Extremist constructivism, proposed by von Glasersfeld (1987b), broadens building information to genuinely extreme cutoff points, expressing that information is absolutely emotional, since it is built in the personalities of people in light of their exceptional individual encounters. Constructionism, as characterized by Harel and Papert (1991), recognizes that learning is a functioning and socially subordinate development unlimited by age or formative stage, however stresses the need to connect with understudies in the plan and additionally genuine development of by and by huge ventures.

## 2.2. Today needs of constructivism

Constructivism has had significant ramifications for instructing. During the most recent twenty years, academic uses of constructivism have been embraced broadly all through the United States (especially in Minnesota, Oregon and Connecticut), the United Kingdom, Germany (Saunders, 1992) and Taiwan (Pirie & Kieren, 1992). The United Kingdom was the first country to broadly command constructivism in quite a while with the distribution of the Cockcroft Report in 1982 and the National Curricula in 1989 and 1991. Be that as it may, starting around 1994, this nation has encountered a "simple" crusade away from constructivism (Boaler, 1998).

In 1989, the National Council of Teachers of Mathematics gave its Curriculum and Evaluation Standards for School Mathematics (NCTM, 1989), which supported constructivism as the norm for the United States. This report was considered a "top notch norm" (Stein et al, 1998, p. 17). Alberta Learning (1996) has now taken on the NCTM guidelines for arithmetic. The Alberta Assessment Consortium (1997) states that Canada is "amidst a significant change in our contemplating learning and educating. The conventional perspective on the student as a detached beneficiary of data has given way to an arising perspective on the student as a functioning member" (p. 4). Cobb et al (1992) trust that "math teachers generally acknowledge that learning is a constructivist cycle" (p. 4).

## 2.3. Traditional teaching

Customary instructing, as it is utilized here, is characterized as objectivist, instructor as-data provider, content-based, conspire drove or formal sensible educating. The 'old style didactical group of three model' addresses this customary approach to instructing, mirroring the possibility that understudies, instructors and subjects are commonly free elements. This model addresses



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advancing as "a course of gaining exact mental portrayals of fixed numerical designs, connections and such, that exist freely of individual and aggregate action" (Cobb et al, 1992, p. 29).

The researchers perceive or recollect the common example displayed in a customary numerical illustration.

- The educator surveys by rectifying the schoolwork.
- The educator presents another idea or strategy by doing models on the board while the understudies take notes.
- The educator coordinates the class through some training issues.
- The understudies work separately on training issues.

Ongoing examination has recorded the positive connection between understudy achievement and instructors' information, both of math and understudy insight. Further, educator information on the student has been demonstrated to be an all the more impressive indicator of understudy outcome in math than the instructor's information on critical thinking or number truth systems. Streams and Brooks (1993) accept that the most significant nature of an educator applying teaching method in view of constructivism is the "immediate and instinctive vision of the student's brain as it grabs and bobbles to get a handle on a novel thought" (p. 20).

Instructors should likewise foster a profound and exhaustive comprehension of the math educational plan, which empowers them to pace and direct encounters with the goal that the educational plan is covered. This information empowers educators to realize which inquiries to develop and which bearings to push toward. Instructors should likewise be exceptionally adaptable daring people (Confrey, 1990). Together, these abilities permit educators to have a great time surprising inquiries and deviations, which then, at that point, permits understudies to expand on their past learning and pertinent encounters.

## 2.4. Constructivism in the mathematics classroom

The class was simply starting to concentrate on insights. The educator started by having understudies perused a few papers in little gatherings and afterward conceptualized in an enormous gathering about the sorts of articles they had tracked down that contained measurements. Understudies were surely excitedly taken part in these undertakings and numerous certifiable inquiries emerged! They were then generally anxious to deliver their own factual paper articles, in an organization fitting their personal preference. The educator gave freebees, which suggested conversation starters to address during the time spent delivering these papers. Despite the fact that the understudies were at this point new to the measurable terms in the freebees, they were extremely propelled to deal with the job needing to be done. They isolated themselves into more





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modest gatherings and quickly started to apply their inclinations and assets to find out about insights by creating a paper.

To additionally advance constructivism in my homeroom, the researcher needs to post the "Ten Myths of Mathematics" conspicuously on the notice board for conversation, alongside understudy work, persuasive messages, pictures of nature that have been numerically displayed, math web addresses, normal numerical formulae and images, and opportune issues that understudies and specialists raise. Planning the learning climate in this manner might give open doors to understudies to begin with what they know and develop new numerical implications, as well as improving numerical correspondence and associations. The researcher would welcome understudies to get math periodicals or fascinating articles or stories with numerical applications, or histories of mathematicians to impart to different understudies in a class library. Live plants and shells would likewise be in the class to help understudies to remember this present reality, which math is made to display.

### 3. Methodology

Methodology of the study is literature review and content analysis was applied to collect data. Studies published between 2002 and 2013 in Science Direct, Eric and EBSCO are scanned and examined for this study, 161 studies matching with the criteria of this study are analyzed.

#### 3.1. Content analysis criteria

- |                        |                       |
|------------------------|-----------------------|
| ➤ Publication year     | Data collecting tools |
| ➤ Number of authors    | Field of study        |
| ➤ Number of references | Research countries    |
| ➤ Sample groups        | Analysis techniques   |

#### 3.2. Data Analysis

Collected data are analyzed using SPSS. 16 .00 Packages.

### 4. Findings & Discussions:

In total 161 studies published in Science Direct, Eric and EBSCO met the criteria of constructivism in teaching and learning and are analyzed. In accordance with the purpose of the study, the data of each criterion is given below in tables.



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## 4.1. Publication Year of the Studies

Journals published between 2002 and 2013 in Science Direct, Eric and EBSCO are given in Table 1. Indicating the number of articles published.

**Table 1**

Year	Number of Studies
2008	6
2009	3
2010	9
2013	6
2014	32
2015	28
2016	18
2018	43
2020	12

As it is seen in Table 1 the lowest research publication on constructivism is in year 2009 as 3 and the highest is in year 2018 as 43 studies.

## 4.2. Method

**Table 2.** The applied method and the number of studies

Method	Number of Studies
Qualitative	80
Quantitative	37
Mixed Method	37
Experimental	3

As seen in Table 2, qualitative method is applied by 80 articles, followed by 37 articles that used both quantitative and qualitative & quantitative method. The minority method applied is experimental.



### 4.3. Number of references

Scientific studies acquire academics to reference another work for a particular scope of study.

**Table 3.** Reference numbers and the number of studies

Number of References	Number of Studies
1 - 15	69
16 – 30	52
31 – 45	30
76 – 90	3
91 – 105	3
105 plus	4

As it is seen in table 3 majority of the studies references are between 1 and 15, references between 16-30 are also seen to be high. However, references starting from 76 to 105 plus are seen to be the minority.

To carry out constructivist approach, it ought to be planned, carried out, and afterward directed through the course of joint effort and communication between understudies, so that learning is built by the gathering, instead of simply the individual (Fernando et al., 2005). Constructivism expects that learning is a social cycle where people learn through cooperating with others (Pritchard & Woollard, 2010). Various examinations show that learning is a functioning cycle wherein singular proceeds with new information and understanding in light of existing experience of picking and changing data.

### 4.4. Discussion

Not every person, nonetheless, sees the magnificence and worth in constructivism. This instructive change in technical studies, particularly math, has begun a "Science War." Morrison (1997) offers the viewpoint of many guardians, researchers and even teachers that, "a hurtful vision of science has been consistently assuming control over training in schools and colleges" (p. 1). Morrison accepts that logical information isn't only an emotional conviction framework however genuine truth, that school principals are too low, that reflection and verbal articulation are not piece of math, as well as those understudies don't have the opportunity or capacity to develop math without any preparation.

To start with, in light of the case that teaching method in view of constructivism mistakenly changes math from a good, goal and static group of information to an emotional and socially developed no man's land, there are many undeniable claims showing that numerical information

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is for sure a social development that can be abstract. Ernest (1991) accepts new number related information is emotional, since it is made by a person. "Numerical elements have not any more long-lasting and getting through self-means than some other widespread ideas like truth, excellence, equity, great, underhanded or even such clear develops as cash or worth" (Ernest, 1991, p. 57). "The premise of math information is etymological information: shows and rules, and language [are] a social development; relational social cycles are expected to turn a person's emotional numerical information, after distribution, into acknowledged objective numerical information; and objectivity itself is comprehended to be social (Ernest, 1991, p. 42).

The subsequent inconvenience related with constructivism is the misinterpretation that understudies can build and trust lies (Morrison, 1999). Cobb et al (1992) stress that understudies are not allowed to build their own confidential bits of insight about math. In a class directed by the standards of constructivism, all number related information is open for correction, is impermanent and is a social build. The objective of learning science isn't to have every understudy remember foreordained realities from a decent discipline to find right solutions on tests, yet to keep on making math in view of a profound comprehension of the historical backdrop of the discipline and the understudies' own cooperation with the world. This doesn't debilitate math, yet keeps it alive by permitting it to develop and advance with humankind.

## 5. Conclusion

Only a long time back, it was for the most part acknowledged that teachers put information into understudies' heads and instructive scientists tracked down better approaches to getting this move going. Presently, an ever-increasing number of individuals are pondering educating and learning with regards to constructivism. It is my expectation that this request has shown the positive and critical ramifications constructivism has for schooling, particularly in science.

Various examinations demonstrate that learning is a functioning cycle where a singular keeps on getting new information and understanding in view of existing experience of picking and changing data. There are various techniques for way to deal with constructivist draws near - issue and task based, corporative and cooperative strategies. Additionally, experiential and request advancing as well as exploration and revelation advancing as principal techniques in math training with regards to feasible advancement are suggested absolutely can possibly reform instructing for all levels and subjects.



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## Digital Transformation Shapes Post-Covid-19 Geopolitics

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### Abstract

The impact of the Covid-19 pandemic has changed the world's new political order with the emergence of several government policies. The Covid-19 pandemic has caused a weakening of the economy in almost all sectors. The Covid-19 pandemic has created a new lifestyle. Our society is getting used to using digital technology. The method used is qualitative with descriptive analysis and literature study. Geopolitics is used as a theory to analyze. The results of this study are that world geopolitics shifted, in the past traditional geopolitics seized an area and gave physical influence to shift along with the development of the era and triggered by covid-19 making the role of information technology strengthened to post covid-19 geopolitics. Digital technology is increasingly confirming the identity and strength of a country in the geopolitical arena of the world economy.

**Keywords:** Digital Transformation, Geopolitics, Post Covid-19, New World Order

### Introduction

The impact of the COVID-19 pandemic has changed the world's new political order with the emergence of new policies from both national and international governments. A pandemic is not a geopolitical 'game changer' as it will only accelerate a pre-existing trend. will surely create a 'new normal': a completely different world from before. Countries around the world are struggling on three fronts: Allocation of resources to strengthen against COVID-19, How to minimize its impact on the general public. Designing stimulus packages to revive the economy in the post-COVID-19 era. (imcnews.id, 2022) To anticipate the future, countries have begun to design tools to mitigate these impacts. China has allocated US\$ 16 billion to anticipate and prevent the spread of Covid-19 (Ilyas, 2020).



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Technology is one of the determinants of contemporary geopolitics because it can influence and shape global alignments and determine the contours of global engagement. Frontier technologies, in particular, are driving the rapid Fourth Industrial Revolution led by emerging technologies such as Artificial Intelligence (AI), blockchain, and 5G. The economic potential of border technologies has been rated as transformational in its impact on countries globally. Countries are looking for integrated border technology schemes where progress in one sector can lead to breakthroughs in another (Patil & Mishra, 2022).

Today's major powers engage in comprehensive global technology politics. The weaponization, mastering, and control of digital technologies is the new 'Great Game'. These power dynamics are helping shape technological spheres of influence. Countries in Latin America and the Caribbean, Africa, and the Indo-Pacific, but also in central Eastern Europe and the Balkans, have fallen or may soon fall under Chinese or Russian technological influence or dominance. China is luring countries into technological dependencies to undermine their political sovereignty through its Digital Silk Road (DSR) initiative. Beijing also shields its own citizens from foreign influence with its 'great firewall' and develops industrial strategies to secure its technological autonomy from the West. It uses digital disinformation to influence public opinion in other countries, mounts cyberattacks and cyberespionage to strengthen its industrial base, strategically deploys attractively-priced 5G technologies abroad to gain control of telecom networks, and tries to impose its technical standards through international organizations (Torreblanca & Ringhof, 2022).

The life of a nation lies among the lives of other nations as a larger international environmental entity. Every change that occurs in the life of a nation can affect the lives of nations in other regions, either directly or indirectly. Thus, every nation must also be able to understand the regional geopolitical dynamics that occur as a capital for geopolitical views both regionally and globally. In terms of geopolitics, the policies of each nation must be adjusted in order to achieve optimal benefits for the interests of the nation. The increasingly complex geopolitical vortex both regionally and globally has given rise to various uncertainties that make it difficult to determine a nation's policies. Therefore, in the context of the nation's interests, it must be faced together in a unified view and perception based on the nation's geopolitical knowledge (Himawan, 2017) (Himawan, 2017).

This research aims to analyze the transformation of technology digital one of factor to shape geopolitics new world order pasca Covid-19. From traditional geopolitics to



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modern geopolitics in international dynamics.

### Literature Review

The term geopolitics was originally defined by its originator, Frederick Ratzel (Stogiannos, 2019), as political earth science (Political Geography), the term geopolitics was developed and expanded further by Rudolf Kjellen (Kjellén, 1921) and Karl Haushofer (Haushofer, 2002) into Geographical Politic. The difference between the two meanings lies in the focus of attention. Political Earth Science studies geographical phenomena from a political aspect, while geopolitics studies political phenomena from a geographical aspect. Geopolitics can be defined as Applied Political Earth Science (Himawan, 2017).

Based on Kusnanto Anggoro's 2017 research entitled Geopolitical Change and National Resilience: A Theoretical Exploration, it contains technology that plays an important role and becomes a new driving force in geopolitical change. However, in some cases, technological needs clash with conservative cultures. Indonesian culture remains in the shadow of past colonialism and domestic turmoil as a unitary state, thus further strengthening geographical boundaries as borders rather than bridges to the outside world. The challenge, therefore, is an inward-looking geostrategic conception. Although nation building is basically a long-term promotion approach, it is also necessary to emphasize the challenges of developing the country in the near future. This is because it needs to be responsive and anticipatory as a democratic country. Geopolitical changes pose serious challenges to national security. A more creative and imaginative realignment of national security policies, including their integration into national security policies, has increased Indonesia's chances of surviving, progressing, and developing into a modern nation-state (Anggoro, 2017). This means that technology is becoming the strongest today in geopolitical change.

China's Belt Road Initiative: In View of Classical Geopolitical Theory by Iqbal Ramadhan in 2018, explaining about issue Belt Road Initiative (BRI) China in the view of classical geopolitical theory, McKinder Theory and Mahan Theory. BRI China's policy in the construction of terrestrial trade corridors that pass through the Eurasian region and the maritime silk road that crosses the strategic waterway. Through this policy, China will not only benefit economically but also be able to transform the geopolitical constellation of the world. This BRI project has the potential to make China the next superpower (Ramadan, 2018).

Based on research from Hendrajit in 2017, entitled The Central Shift of

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International Geopolitics, from Heartland to Asia Pacific, explains that the development of international geopolitics has been in recent decades. There is a tendency to shift the interests of major powers to the Asia Pacific region. Indonesia, located in the Asia Pacific, has strategic geopolitics in global interactions. In addition to its position between the two oceans and two continents, it also has a diverse natural wealth (SDA) in abundance. This is the Geopolitics leverage that Indonesia has to be able to maximize its national interests (Hendrajit, 2017).

Kris Wijoyo Soepandji in 2019 entitled *Geopolitics, The State and Nation today*, explains the Geopolitical problems of the present. Geopolitical issues concern how nations, states and societies interact by not giving up their respective interests. At the same time the development of technology has led to a fast-paced and easy condition in the history of mankind. The existence of this high interaction can have an impact, both positive and negative for mankind. This can happen depending on how the actors understand and utilize geopolitical capabilities. This understanding will encourage actors to take strategic policies. A geopolitical understanding can be developed if it recognizes the importance of the existence of the concept of nation and state in the present. (Soepandji, 2019) Changes in every aspect encourage humans as the main actors to adapt to these changes. Including technological developments that have an impact on geopolitical decisions that can make a nation and country survive.

In 2020, Dafri Agussalim, through a study entitled *From Traditional Security to Non-Traditional Security: The Evolution of the Security Concept and Its Relevance for Efforts to Strengthen Indonesia's National Security and Resilience*, explained that the evolution of traditional security towards non-traditional security. In terms of traditional concepts, public analysis and perception of security tend to follow the mainstream way of thinking or approach of realists/Neo-Realists that focus more on national security or state security. In this context, state security is generally and primarily associated with war and peace or armed conflict of one or more countries with another. However, along with the development of politics, economy, social and information technology today, the security problems faced by the world community are also developing and expanding. Security concerns are now no longer associated solely with state security as traditionally conceived, but are beginning to be associated with what became known as "non-traditional security threats". These "new threats" cover many issues, including; human trafficking, drug trafficking, illegal migrant, ethnic conflicts, terrorism, transnational crimes, threats due to environmental damage and the spread of infectious diseases (pandemic) as is sweeping the world today. For Indonesia, the development of this "new security" concept is very important in its efforts to maintain its national resilience and security. This is because Indonesia is the country most vulnerable to

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various forms of non-traditional threats. Therefore, it is important for Indonesia to respond to the development of the security concept in a systematic, structured and sustainable manner, both from the aspect of institutional readiness, resource availability and from the aspect of policy making accuracy (Agussalim, 2020).

In the same year 2020, Muhadi Sugiono conducted a study entitled Asian Geopolitics and the Challenges of Indonesia's Structural Diplomacy, writing That Asia's geopolitical landscape is increasingly dominated by competition between the US and China. This strategic competition between the two great powers puts Asian countries in a difficult position as a consequence of the zero-sum option, either the country falling to China or the US. Structural diplomacy is an alternative where Asian countries can avoid this dilemmatic position. As a middle power, Indonesia is in a position to conduct structural diplomacy. Indonesia has experience in the past in shaping the behavior of the country in the region. More recently, ASEAN's view of the Indo-Pacific reflects Indonesia's capacity for structural diplomacy (Sugiono, 2020).

### **Method**

The research method in this study is a qualitative approach with descriptive method. The data collection used is a literature study. The researcher collects, examines and describes about world geopolitics as a unit of observation and the unit of research analysis is the geopolitical transforming post Covid-19. The locus of this study is geopolitics international nowadays.

### **Result and Discussion**

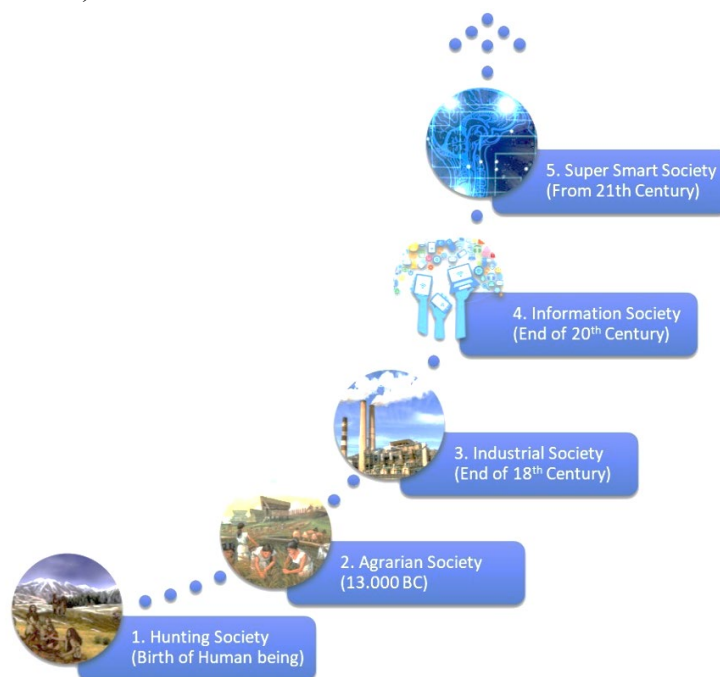
The development of telematics is one form of social change. One form is the growth and development of information and communication technology and its use in various aspects of life. Due to the development of technology, information and communication, it has brought humans to a new civilization. At first humans lived in the real world, everything could be seen and felt physically, but as technology developed, humans began to transform into a virtual society. All aspects that make up society, which are often referred to as social systems, have shifted into digital components. Human individuals who gather physically, regionally, socially dynamic and socially static. Technology has changed the shape of society and its civilization. McLuhan said society is transforming from a local world community to a global world community called unlimited society.

Below is a picture of the transformation or evolution of society from hunting





society, agrarian society, industrial society, information society until super smart society (Deguchi et al., 2020).



**Figure 1. The evolution of Society**

The development of technological progress started from the discovery of the steam engine by James Watt, in 1750-1850 marked by the Industrial Revolution 1.0, with the Theory of Productivity Factors of Production 5 M (Man, Method, Machine, Money and Market) so that the Administration and Trade theory developed that human work requires wages, absenteeism, and bonuses and allowances (THR) as factors that provide morale for employees (The Theory of Administration).(O'brien, 2017).

There have been massive changes in agriculture, manufacturing, mining, transportation and technology and have had a profound impact on the social, economic and cultural conditions of the world. Listed in the history of this revolution has succeeded in increasing the economic growth of countries in the world. The Industrial Revolution 2.0 emerged in 1870-1914 at the beginning of World War I, marked by the development of Theory Humans Resources as the beginning of Planning, Organizing, Actuating and Controlling in managing HRM, at that time the manufacturing revolution had begun to lead to the manufacture of spare parts and the manufacture of machines. industry, war equipment and war vehicles as well as aircraft and combat, telephones, cars, along with the development of power and the impact of countries and changed the face of the world significantly and the world economy began to experience destruction





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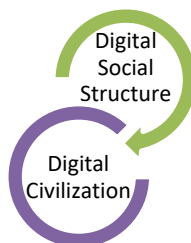
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due to war and hunger and budget deficits. Until finally the end of World War II in 1945-1949.(FAO, 2017)

The Industrial Revolution 3.0 appeared in 1950-2000, where the perspective of Sociology was highlighted in the process of utilizing space and time by marking the launch of the Apollo Aircraft to the Moon, so that the use of computers and digital technology had begun. Human Resources are no longer as production factors whose function is the same as machines, but social factors and investment in human resources have started, humans are the most important assets so that a lot of training and knowledge improvement as well as hard skills and soft skills are carried out. The Industrial Revolution 4.0 appeared at the beginning of 2001 to 2020, where the Humanity point of view, meaning that technology is to serve humans, where the large size of the company does not guarantee mutuality, but the company's agility is the key in dealing with VUCA (Velotility, Uncertainty, Complexity, Ambiguity), Circular changes in circumstances, uncertainty in changes in business competition, as well as uncertainty in the complexity of regulatory conditions, and uncertainty in difficult situations as well as cross-geosectoral openness, supported by technological advances and competition make the Industrial Revolution 4.0 era make the world and business without boundaries of place and time , as if the world is spinning so fast with various changes and competition in maintaining life in every corner of the sides of life, the flow of goods and services and even the flow of population movement in the labor sector, urban due to political policies, urban due to the need for labor talent, which is not spared. From climate change, epidemics, and the effects of natural and geotectonic shocks, humans have to move forward, backward, squeezed, and stop being crushed. Industrial Revolution 5.0 comes in 2021, where life is at your fingertips and has begun to change that "Life is Mind" life is how your mind is currently, and life is shaped and colored by the movement and direction of thought and life design based on the implications of technology as a support service. Time and place are no longer a barrier in fulfilling human desires without any limitations.(Maulana, 2021) Society's civilization turned into digitalization. But the elements that make up society itself do not disappear; they just change shape. In the social system forming society, there are elements of social dynamics and social structure. It is from this community-forming component that later incarnates and forms a new societal civilization, namely digital civilization. Below is a picture of the transformation of digital society:



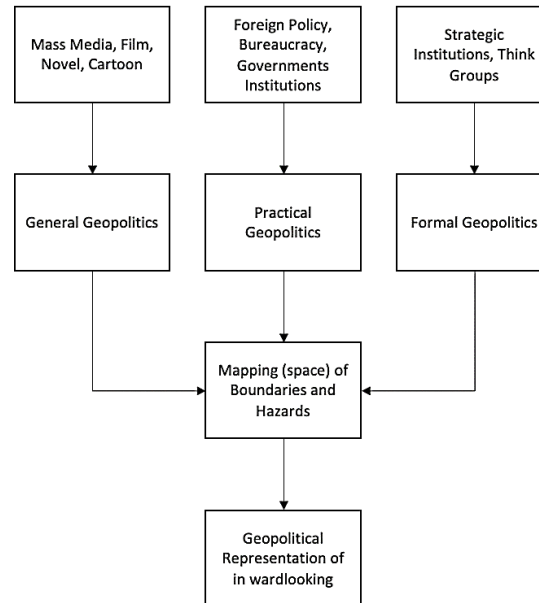
**Figure 2. Digital Society Transformation**

### Digital Social Structure

The use of digital technology is not only a matter of instruments, but is inherent in the individual and collective behavior of society. Quantitatively and qualitatively digital technology clearly shapes the digital social structure of people's social lives. All types of activities and activities of modern society are almost inseparable from the digital world. Today's humans are born until they die, from waking up to sleeping, it seems that it is inseparable from the concept of the Internet of everything (IoE). Digital penetration is so fast that it penetrates all aspects of life. This is the basis for the creation of a digital social structure. Multinational digital companies will always be visionary in creating hardware and software products, such as computers, mobile phones, tablet computers, web browsers, platforms, and social media.(Wahyono, 2021)

Countries that rule digital technology will always take advantage of their position in geoeconomics to analyze and predict the economic behavior of consumer countries. Big data from consumer countries is a weapon to formulate strategic economic steps to be carried out in the future. Through data, it is not difficult for analysts and business people to create commodities that sell well in the market. In the context of politics and security, digital technology can be used by technology-powered countries in surveillance strategies for other countries. In the geopolitical constellation of the world in the future (Wu, 2020).

First the digital realm as a deliberative democratic public space. Second, the digital realm as the object of management and control of global digital companies and state intelligence agencies. In the first view, freedom of opinion and freedom of action in the digital world are sometimes not clearly visible. The second view is that there is strong interference from the government (state intelligence agency) or private party (service management company) in terms of managing or monitoring the digital world.(Pramadi, 2020). The following is a picture of some of the factors that influence geopolitics:



**Figure 3. Factors Influencing Geopolitics**

The field of geopolitical and geostrategic studies cannot be separated from the development of time, space and people. Changes in one of these three aspects will also change the other two aspects. This refers to a historical fact, where in each different timeline something different will happen related to space and also people, struggle, or politics. Therefore, in the study of the new world order, there are three periods of geopolitical and geostrategic change.

The first periodization is uneven development. The background of the time aspect in this first periodization ranges from the occurrence of the first World War to the end of the second World War. At that time, the gap between core and peripheral countries was very visible, between north and south. The struggle that occurred was an attempt by Europeans to develop their country, expand their territory, expand to other regions such as Asia and Africa, and to maintain the existence of powers from other countries. These European nations fought for power and competed to expand their territory. In line with the geopolitical theory put forward by Ratzel, that in essence the state resembles a living being that will continue to grow over time, where this growth is carried out by expanding other regions in order to maintain the existence of the power of a country. Their motivation is none other than to be number one. These conditions persisted until the end of the Second World War.

At the end of the first World War, the situation and condition of the European

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countries was chaotic due to the war that had been carried out so far. The rise of Germany which evolved into a great power after previously receiving severe war sentences was something that surprised Britain and France, which incidentally were the strongest European countries at that time. The condition of the constellation which is like horse racing continues. Near the end of the second World War, a struggle for power and/or influence took place between America and the Soviet Union. Armed with economic and military power, they take advantage of other countries, such as developing countries, as pawns through proxy wars.(www.history.com, 2009)

Entering the periodization of rise and fall supremacy with the backdrop of the Cold War. When the Soviet Union collapsed in 1991, America automatically rose to become a super power that could hegemony over the world and other countries. Without the presence of a second party that hinders, America can freely expand through covert ideological cultivation, under the guise of liberalist democracy and cooperation. If it is associated with Mackinder's Heartland theory, what America does as its geopolitics and geostrategy is very relevant to that theory. "Who rules East Europe commands the Heartland; Who rules the Heartland commands the World-Island; Who rules the World-Island commands the World". Meanwhile, in reality, America's efforts to establish relations and communication with the countries that were broken up by the Soviet Union and also Middle Eastern countries can be seen. In a certain part, America's ambition to control oil in the region is also visible. When the Soviet Union had collapsed and America became the sole hegemon, the development of technology, communication, and transportation became the latest fabric. These developments led to globalization to develop more rapidly. This certainly changes the geopolitical map of the world. America, which was initially considered a hegemon, then 'decreased' along with the emergence of the new rising state. Although America in general is still a country that has strong economic, political, and military power, other countries such as China and India have grown to become strong countries, although only in certain sectors. The emergence of countries as well as other actors that can influence the global constellation gives rise to a multipolar world order. In such an arrangement, almost all countries have expertise and roles in certain sectors.(www.loc.gov, 2020)

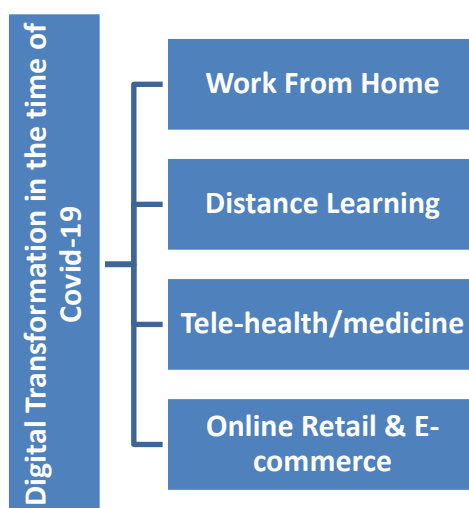
The geopolitics and geostrategy of the world as well as the countries have changed along with the shifting aspects of time, space, people. Beginning with the periodization of the First World War, geopolitics and geostrategy applied by Europeans, in particular, generally aimed to maintain their existence and at the same time to expand their territory. They compete with each other to be the most influential country. Until entering the periodization of rise and fall supremacy, the race to be number one continues. This time the dominating actors were America and the Soviet Union. When the Cold War ended



and the Soviet Union disintegrated, America became the only super power. America can easily, without any barriers, to spread its influence. However, when entering the era of increasingly rapid globalization, a new world order emerged. America is no longer the only hegemon actor. This is marked by the emergence of new countries that can compete with America in certain sectors.

China's rapid economic progress in recent decades has spurred its expansion as a new military and political power at the regional and global levels. The Belt and Road Initiative (BRI) campaign and the country's ability to cope with the outbreak of the Covid-19 pandemic, which has left the US powerless, have solidified China's position as a world superpower new. China's maneuvers in various regions, especially the Asia Pacific, have also faced an assertive response both politically, economically and militarily by the US, Japan, India and Australia in the field and multilateral diplomatic forums, because they have changed the existing world order, with new implications. which it causes.(Falahi & Nainggolan, 2020)

The current pandemic is thus giving us lessons on how geopolitical challenges might play out in future and where pressures are already accumulating. Countries have moved quickly to protect their own citizens, such as by seeking to outbid rivals for personal protective equipment or to gain exclusive access to vaccines for their own population (Nabi & Brar, 2022).



**Figure 4. The Digital Transformation in The Time of Covid-19**

At this time, who controls the information, they were the real master. With every piece of information they had, they could control the world. No longer physically but digitally whose reality can be felt. Today's society is an information society. All without



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limits. This will be very dangerous if it enters the realm of national defense and security. Not only secret information can be spread, but when a country has been left behind from the aspect of using technology, it means that it is left behind in this civilization. A country is formed so that its nation can survive, but the question is how can it survive if the country cannot keep up with the technological developments of other globalized countries.

For example, when faced with a pandemic such as covid-19 which prohibits everyone from meeting physically, when a country is not ready with technology, how can the education system in a country continue to run, how is it possible for everyone to learn and exchange knowledge. This means that the country cannot survive. It's the same with a country, if it can't adapt to technology, not only education problems but other aspects of life will also be threatened.

So that each country needs to understanding of geopolitics in their respective countries. Not only traditional geopolitics but non-traditional. After the COVID-19 pandemic, the country is faced with a new normal life. New normal life means how a nation in a country can live mingle with technology that has become one. It is not an object of technology but a subject of technology. The new civilization of society towards digital civilization (super smart society).

### **Conclusion**

The existence of revolution 5.0, requires countries in the world to move faster, be able to adapt and fully integrate themselves with digital transformation. This phenomenon is not only a process of technological transformation, but also forms a new ecosystem in life. For a visionary country, controlling the digital world is like controlling the world. Transportation, communication and information are at the core of exchanges between countries such as trade and war and intercultural relations between groups of people. Technology imposes geographic contraction, shortening distances so that it becomes a driver of social harmony, political order, and national security.

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## Minimisation of Logistical Risks with Blockchain

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### Abstract

The logistics sector is enormous and intricate. Controlling the distribution of commodities at different levels may be quite challenging since the process involves several locations and stages. Even worse, this industry requires a tonne of documentation and invoices, and if even one slip of paper disappears, the product delivery might be delayed. Companies in the logistics industry are looking for new technology that may streamline their current operations, save costs, and increase supply chain transparency. Blockchain technology has the potential to totally transform logistics and drastically help in reducing logistical risks.

**Keywords:** Logistics sector, logistical process, blockchain, logistical risks

### Introduction

The backbone of almost all global commerce may be attributed to the logistics sector, which is an industry. Of course, there are obstacles in the logistics business, which is a very large one. It is quite difficult to manage today's logistics, which include all the connections involved in producing and delivering commodities. Depending on the goods, today's supply chain might include hundreds of steps, take place in many places throughout the world, and involve a boatload of payments and invoices.

Transporting goods to clients involves a number of stakeholders, some of whom may prove to be less reliable than anticipated, including logistics. In a nutshell, the supply chains of today are broken in several ways and are too convoluted. Additionally, due to misunderstanding in the chain of custody, goods are lost, damaged, or delayed much too often. Due to the fact that many businesses are still using paper documents, "pen and paper" alterations occur when a document is altered without anybody knowing who made the change or why.

Blockchain, a distributed database system created by Satoshi Nakamoto, is described as being able to record transactions and preserve their data across several computers with a high level of security and transparency and without a centralised, controlled organ.



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Regardless of whether there are numerous stages in a supply chain or just one online payment at each transaction's conclusion, every sequence of transactions from beginning to end is recorded in the blockchain ledger as they occur.

Data sharing on the blockchain is done via a peer-to-peer network. It demonstrates that data cannot be modified in the past, proving that it is immutable. Using the blockchain in place of a single centralised authority allows the community as a whole to certify the veracity of the document.

## **Importance of Blockchain in Logistics**

For financial applications, blockchain technology has become the top layer. Many believe blockchain will have just as big of an effect as the internet had in terms of changing the game. The logistics sector may make extensive use of the technology's capacity to safely and permanently record transactions between parties. The ability for every organisation to adopt the technology in accordance with its requirements makes blockchain solutions the most exciting aspect of the uptake of technology.

In addition to using, it for banking and crypto-currencies, many startups are also beginning to employ it in other fields. Blockchain technology is used by well-known companies like Google, Microsoft, Amazon, and others, and some of them even provide it.

A growing number of businesses are prepared to use blockchain since it offers the logistics sector so many advantages. According to a 2018 Gartner poll, although 23% of CIOs have genuine intentions or interest in implementing it, just 1% of them have acknowledged investing in and deploying it so far.

On account of the glaring lack of transparency in our current logistics system, it is very difficult for consumers or purchasers to understand the genuine value of items. Analogously, it is quite challenging to look into supply chains when there is a suspicion of unethical or unlawful behaviour.

## **How to Get Started with Blockchain**

The blockchain technology is attracting the attention of several businesses throughout the world, which have begun to consider various implementation options. Consequently, if the blockchain is as revolutionary as it seems to be, why hasn't every firm adopted it? Indeed, advancements are not immediately apparent. Permissionless blockchains will probably accomplish the same thing as the internet did when it finally replaced intranets as the dominant technology.



Educating oneself is a must for logistics organisations, who must then digitise, standardise, and sanitise their data. Companies must practise a supply chain ecosystem of partners in order to employ the standard in a shared permissionless blockchain environment once this industry standard is put into place. The shipping and logistics sector is a venerable one, yet it makes sense for it to be among the first to embrace blockchain technology.

## **Risks Involved in Logistics Management**

### **Inventory management related risk due to poor practises**

The cost of keeping inventories has gone up with the global economic slump. warehouse storage, insurance, obsolescence, and transportation costs should all be considered in inventory management. inventory problems may result from inadequate planning and forecasting. By minimising this risk and making sure you compare storage and distribution options, you can prevent the expense of keeping inventory from hurting your company.

### **Risk resulting from logistical management bottlenecks**

A lot of the time, the control levels for logistical operations are lower than what is required. Streamlined warehousing and logistical administration should be possible with the aid of a strong logistics policy. In actuality, even the best product in the world won't be able to satisfy the consumer if it is delivered late, is broken, or vanishes in transit. By setting the bar at the appropriate level, it is possible to decide who to deal with and how to evaluate supply chain risk while also taking risk mitigation into account.

### **Risk on account of not being able to integrate logistics related activities**

The logistics sector relies on third party logistics (3PL), which has developed to do so. Your priorities cannot be established by other parties, not even the best shipping companies. There will always be a slide away from perfection in aligning 3PL with organisational goals, regardless of how excellent your warehouse space may be.

### **Risk on account of dependence on technology-based operations**

A firm may grow stronger, more streamlined, and more quickly with the use of technology. An unintended effect of this is that it may sometimes lead to organisational mindsets that are limited by the capabilities of the programme. This may indicate that supply chain workers invest a lot of effort into entering data into the system but have difficulty extracting the knowledge they need to make wise business choices from it.

Making strong alliances with important partners and suppliers is one way to make sure of this. Working with the best in the business allows an organisation to learn about new systems and technologies without having to take the risk of investing in them before being sure that the investment will be worthwhile.





## How Blockchain Reduces Logistical Risk

Analysing actual experiences of organisations that have benefited from the same is crucial for improving our comprehension of how logistical risk is being managed. The following are just a few instances of how businesses are using blockchain to innovate in the logistics sector:

### ShipChain

ShipChain was established in 2017 and focuses on assisting the shipping process from beginning to finish. It also gives you the ability to trace any items from the time of shipment from manufacture to final delivery. It gathers data on the movement and circumstances of cargo transportation in real-time using IoT sensors and the immutability and decentralisation of blockchain technology.

### Provenance

Provenance, a company founded in 2014, utilises blockchain to promote transparency in the retail sector by providing essential data about each product, including its materials, components, suppliers, production procedures, equipment used, storage, and transportation. The supply chains of the specified goods/product are shown by retailers on a ledger, together with details on the storage and transit circumstances.

### Waltonchain

Waltonchain, a 2016 startup, uses RFID and IoT data to incorporate blockchain in logistics to increase efficiency and safety. Oracles and central institutions are unnecessary as a result of this.

Furthermore, it prevents a company from becoming too dependent on outmoded technologies. Working with reliable partners guarantees that even the tiniest firm doesn't fall behind in the logistics sector's rapid advancements, which include autonomous vehicles and drones.

### Conclusion

Blockchain can do more than simply store data; it is not only a database or other kind of data storage system. It is secure and safe to share with others. Blockchain provides a secure alternative to conventional banking and data storage methods that can preserve assets without unauthorised change.

A developing economy may benefit from blockchain's ability to streamline operations and speed up related procedures. The logistics sector would benefit from these qualities since they would allow for better client transparency and process automation.





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## **The Role of Meteorological and Geographic Specifications in Formation of Radioactive Precautions**

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### **Abstract**

The worldwide growing number of hazardous nuclear facilities and their wastes create a real danger to the populations of states where these facilities are located. When modelling radioactive contaminations and/or fallout, it is important to take into account factors, which are able to replacing wastes to neighboring territories and countries as well as the climatic and geographical patterns of the area under research.

For controlling radioactive wastes generated in a possible explosion of radioactive substances (RS) and other sources of ionizing radiation, it is necessary to develop a radiation safety service. This service will carry out radiation monitoring, which means a) monitoring a compliance with the radiation safety standards (RSS) and b) compliance with the health regulations.

The RS which fall on neighboring territories while the trans-border displacement of air masses have global character since can be replaced on very far distance. For ongoing and preventive detection of radioactive fallout, it is worthwhile to use remote methods and means of sensing/scanning the Earth's surface. This approach gives an opportunity to operatively monitoring the environment all over the world.

**Keywords:** climate, radionuclides, fallout, rain, clouds, turbulence, frost, remote sensing, radiological monitoring



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## Introduction

As a result of accident at a Nuclear Power Plant (NPP), radioactive wastes fall out in form of precipitation which are formed because of long-lived explosion products from atmosphere. If the parameters of explosion (intensity, geometry, type of explosion etc.) determine the qualitative composition of radioactive products, then the effects of meteorological impact ultimately leads to the transfer and influence on the concentration of radioactive contamination.

The scattering of radioactive impurities is determined by stratification, turbulence, and other parameters of the atmosphere, thereto the direction, and the speed of their spatial distribution are determined by the parameters of wind. The rate of precipitation of these substances depends on the dimensions of the solid particles on which they condense by forming radioactive dust. There are three types of fallout:

- Near (local), they consist mainly of large and medium-sized particles more than 100 microns, which fall out within a few hours after a nuclear explosion and cover an area up to several hundred kilometers far away from the explosion center;
- Intermediate (tropospheric), they consist of particles with a diameter up to several tens of micrometers that fall into the upper troposphere and fall out for several months, creating weak radioactive contamination over a large area;
- Global (stratospheric), consist of particles up to tenths of a micrometer in size, falling out of the stratosphere for several years around the globe. In radioactive accidents, the range of propagation of the fallout depends on the height of the lift of radioactive substances, can run from hundreds meters to thousands kilometers (Zeynalov, 2020).

The radioactivity of precipitation is due to the capture of radioactive aerosols and gases from the atmospheric air by particles of clouds and precipitation. Washout by precipitation is the main mechanism for cleaning the atmosphere from radioactive contamination. The distribution of fallout



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of radioactive aerosols from the atmosphere in neighboring regions usually corresponds to the distribution of the amount of precipitation (<https://www.mchs.gov.ru/ministerstvo/o-ministerstve/terminy-mchs-rossii/term/2616>)

Meteorological conditions greatly influence precipitation, especially local precipitation. Atmospheric winds can bring precipitation over large areas. Snow and rain, especially if they come from a considerable height, accelerate local precipitation. Under special meteorological conditions, such as a local downpour occurring over a radioactive cloud, limited areas of severe contamination can form immediately downwind of a nuclear explosion (<https://www.booksite.ru/fulltext/1/001/008/094/881.htm>).

Taking into account several climate formation factors, as well as the ability of radionuclides to be replaced over vast territories, the authors in this article have considered the possible principles of the relationship between meteorological conditions and their influence on a) the movement of radionuclides, and b) precipitation on a regional and global scale.

Some principles of this correlation have been considered in recent paper of the authors (Hasanov & Zeynalov, 2020). It was proved that the most undesirable case for radioactive fallout from atmosphere after explosion is such a meteorological factor as constant wind by value and direction throughout the altitude. Also, the “pure density” of atmosphere (density without radionuclides) is a managing factor for radioactive precipitations form and intensity. In this matter, meteorological observation of the Earth could play sufficient role for prediction of radioactive fallout characteristics such as the area of spread, intensity of wastes and so on. It would be highly reasonable to integrate meteorological satellites into the systems for the radioactive pollutions modeling. Meteorological satellites will monitor the Earth’s atmosphere permanently in different channels and provide full information about the atmosphere consistency, after that one may make a conclusion about the fallout level. This approach gives an opportunity to completely use meteorological peculiarities at this area for precise estimation of the fallouts.



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For example, it might be noted research in (Kurnaz, Rustamov & Zeynalov, 2009) the statistical characteristics of the high rates of outgoing observation measured from satellites of the NOAA series were calculated in all five channels (two channels in the visible color region, two channels in so-called “atmospheric density windows” of the range 10–12  $\mu\text{m}$ , and a channel in the near-infrared region of the spectrum) AVHRR instruments for clear and cloudy conditions when averaged within 2 x 2 bins.

It can be considered some of examples of interpretation to be received information production for the purposes of investigation of climate variability of selected two foregoing mentioned Near-Caspian region for the last 20 years (UNESCO/Keizo OBUCHI, 2002).

The effect of geographical factors on radiation-forming processes on the territory occurs under the influence of some geographical factors. The main of these factors, which form the distribution of radionuclides in the atmosphere are geographical longitude and latitude, the sea level, distribution of land/sea (in general words, dry/wet surface), ocean flows, soil character, vegetation cover, snow and ice cover, air composition ([https://hmong.ru/wiki/Radioactive\\_fallout](https://hmong.ru/wiki/Radioactive_fallout)) As it is obvious, the density of air at high latitude is more than at lower latitude more close to equator, since the precipitation of heavy radionuclides at high latitude is less intensive than the same process at lower latitudes under otherwise equal conditions.

Table 1 clearly shows, for comparison, the amounts of radionuclides exploded into the environment as a result of nuclear weapons tests and the accident at the 4th power unit of the Chernobyl Nuclear Power Plant (CNPP). Underground tests have been still carrying out, but they are not usually completed by the formation of radioactive fallout (Klyuchnikov, Pazukhin, Shigeru, Shigeru, 2005).

**Table 1. Comparison of the amount of radionuclides in the environment as a result of nuclear weapons testing and the accident at the 4th Unit of the CNPP**

Radio-nuclides	Half life $T_{1/2}$	Nuclear tests MKi	Total in the MKi reactor	Release from the accident at the CNPP		Percentage of nuclear weapons testing
				%	MKi	
<sup>90</sup> Sr	26.8	57.5	6.0	5	0.3	0.5
<sup>137</sup> Cs	30.17	87.0	7.02	30	2.1	2.4
<sup>238</sup> Pu	87.74	$0.55 \cdot 10^{-2}$	0.0254	3	$0.76 \cdot 10^{-3}$	13.8
<sup>239</sup> Pu	24118	0.36	0.0256	3	$0.77 \cdot 10^{-3}$	0.2
<sup>240</sup> Pu	6570	0.5	0.040	3	$0.12 \cdot 10^{-2}$	0.2
<sup>241</sup> Pu	14.35	23.0	4.97	3	0.15	0.7
<sup>242</sup> Pu	$3.763 \cdot 10^5$	$0.45 \cdot 10^{-3}$	$0.56 \cdot 10^{-4}$	3	$0.2 \cdot 10^{-5}$	0.4
<sup>241</sup> Am	432.2	0.79	$0.37 \cdot 10^{-2}$	3	$0.11 \cdot 10^{-3}$	0.01
<sup>242</sup> Am	7380	$0.25 \cdot 10^{-2}$	$0.14 \cdot 10^{-3}$	3	$0.4 \cdot 10^{-5}$	0.2
<sup>244</sup> Cm	18.1	$0.1 \cdot 10^{-6}$	$0.48 \cdot 10^{-2}$	3	$0.14 \cdot 10^{-3}$	-

Accordingly to the issue of "Chernobyl" dated in September 1986, in which are objectively described the data on the accident submitted to the IAEA (International Atomic Energy Agency), in particular, the data about the source of the radioactive products explosion from the destroyed reactor \*18+, it is indicated that the spread of the earlier portions of radioactive products at the first time after the accident on far distances take place in the north-western and western directions (Yu & Israel, 1990).

To our opinion, while an accident with explosion into the atmosphere, the monitoring manual for nuclear or radiation accidents should include several monitoring groups. And, each group has to determine the danger level to public by independent defining the extent of the cloud, the concentration of radionuclides in the cloud, and fallouts from the cloud. Monitoring teams will need





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to measure the ambient dose rate from the cloud, from deposition, or directly from the source. Monitoring teams should be expanded early in the accident to ensure maximum protection of the public, taking into account the need to ensure the protection of the monitoring team members also. If the emergency is expected to be lasted for longer time, some alignments should be made for arranging the shift work for the monitoring and sampling teams in the field (<https://www.booksite.ru/fulltext/1/001/008/085/225.htm>) . For these purposes, the combination of aerial and terrestrial measurements may be used.

The values of the specific effective scattering area (abbreviated as ESR) of radioactive emissions used in the experiment are due to:

- a) Turbulent homogeneities of air near the NPP exhaust tube. As it was shown in recent paper of the authors ([https://www-pub.iaea.org/MTCD/Publications/PDF/te\\_1092R\\_prn.pdf](https://www-pub.iaea.org/MTCD/Publications/PDF/te_1092R_prn.pdf)) , this issue is highly critical for forming zones of radioactive contaminations;
- b) Extra-high density of macro particles (water drops, aerosol, clusters). This point is urgent since radioactivity makes a contribution into the formation of clusters, which consequently affects the growth of large drops. Accordingly to the model developed in (<https://www.booksite.ru/fulltext/1/001/008/085/225.htm>) size and density of surrounding particles essentially change the distribution of radionuclides throughout the atmosphere along all the three ortho-vectors of Cartesian reference frame;
- c) Climatic and weather conditions like how the speed of wind distributes by the altitude, air viscosity and non-homogeneity etc.

For making these researches more operative and money saving one can develop space-born or satellite systems that can be targeted to radar monitoring of radioactive emissions from various nuclear enterprises. This approach will give an opportunity to earlier detect hazardous doses of radioactive contaminations and more effectively adopt the measures for minimizing the risks.



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Active radars to be embedded into satellite constellation will provide more precise information about radioactive fallouts of the territory under control. For this, it is necessary:

1. Creation of specialized multi-frequency active and passive radars with increased energy potential;
2. Map of climatic and weather features of the study area;
3. Data from meteorological satellites for making more detailed studies;
4. Development of special algorithms for processing reflected radar signals ([https://www-pub.iaea.org/MTCD/Publications/PDF/te\\_1092R\\_prn.pdf](https://www-pub.iaea.org/MTCD/Publications/PDF/te_1092R_prn.pdf)).

## Conclusion

The paper discusses the main meteorological and geographical factors that form the impact of radioactivity on the environment through precipitation. This environment may be close or far from the emissions epicenter in dependence on indicated meteo- and geofactors. These both factors define the form and intensity of precipitations, which follow the emissions.

This new approach will allow to minimize the risks connected to the spread of hazardous phenomena associated with radioactive fallouts and their distribution over the geographic longitude and latitude, and build the 3D model of radioactive pollutions of territory under the pollutions. Additionally, it is suggested to take into account the climate-forming factors of the study area to extent the model up to time-dependent version.

For operative and money saving realization of the developed model, the authors suggest using satellite systems, which could make synergy with terrestrial measurements to identify forms and levels of radioactive contaminations of the areas under research.



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## **Successful organizational business communication and its impact on business performance: An intra and inter-organizational perspective**

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### **Abstract**

Intra-firm communication is critical for building synergy amongst internal business units of a firm, where employees from various functional departments and ranks incorporate their decision-making, understanding of organizational objectives, as well as common norms and culture for better organizational effectiveness.

This study builds on and assesses a framework of the causes and consequences of effective communication in business interactions between customer and supplier firms, and also the path for efficient communication within a firm. The proposed study's structural equation modeling (SEM) analysis based on 352 sample responses collected from firm representatives at different job positions ranging from marketing to logistics operations, reveals that, in the frame of reference of intra-organizational communication, organization characteristics and shared values, top management support and style of leadership, as well as information technology, are all significantly related to communication effectiveness. Furthermore, the frequency and variety of interactions enhance the outcome of communication, that improves a company's performance.



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The results reveal that cultural factors are significantly related to communication effectiveness, as well as the shared beliefs and goals. In terms of organizational factors, leadership style, top management support and information technology are significant determinants of effective communication. Among the contextual factors, interaction frequency and diversity are found to be priority factors. This study also tests the relationship between supplier and supplier firm performance in the context of communication effectiveness, and finds that they are closely related, when trust and commitment is built between business partners. When firms do business in other multicultural contexts, language and shared values with destination country must be considered significant elements of communication process.

**Keywords:** Intra-firm communication, inter-firm communication, business performance

## Introduction

The process of corporate globalization includes resolving barriers to good cross-cultural communications between stakeholders (Scollon & Scollon, 2001). Cross-cultural communication involves executives, salespeople, suppliers, and customers. Effective communication can involve an oral manner of presenting information to a party with the goal of enabling the passage of the points across, such as when an individual chooses to actively listen with the goal of acquiring a clear comprehension of a conversation or message communicated to them. According to the findings of the study, individual variables have a significant influence on communication performance and organizational outcomes.

According to Xu and Smith (2005), when small and medium sized enterprises (SMEs) strive to extend their operations globally, they face communication barriers with foreign



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merchants, customers, distributors, and others, resulting in misunderstanding and disagreements.

The term “business communication” relates to messages sent and received by persons for the objectives of business activities and management. Effective communication is critical to the success of any business. Business communication occurs between companies, inside organizations, and among various groups of individuals, such as owners and employees, sellers and buyers, service providers and consumers, salespeople and possibilities (Bisen & Priya, 2009).

The study revealed two types of communication strategies: internal and outward contact. Previously, little attention was paid to communicating effectively as a mediator between the primary determinants and the external factors in commercial contacts between firms and their foreign commercial partners (Bisen & Priya, 2009). We believe that bargaining is a crucial part of business communication. Because of the negotiation process, business partners share opinions, regardless of competing ideas or common interests, in order to find a successful conclusion and strengthen their collaboration. When bargaining partners from different ethnic backgrounds attempt to connect, confusion and conflict can occur (Zhu & Zhu, 2004).

According to the experts, being aware of the distinction can assist break down barriers in information dissemination. Considering the aforementioned factor that affect basic communication outcomes, the purpose of this study is to broaden its investigation and investigate the antecedents of adequate global business information exchange and their relationship to company results obtained, as well as the formation of social connections among trade agreements.





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## **Literature Review** **Effective Communication**

Communication is defined as the process of passing information or messages from one place to another or from one group to another using similarly clear symbols or semantic norms. When there is a purpose or cause to share or exchange information or messages, communication can occur (Lunenburg, 2010). According to Stiff and Mongeau (2016), companies have a defined communication framework that gives norms and regulations for workers to follow while dealing with one another or other stakeholders. Organizations have a clear communication framework in place that gives standards and regulations for workers to follow while dealing including one another or other stakeholders. A smart selection of communication structures may help a firm build the ideal culture. Some companies may permit a randomized or free communication network. This, however, may result in a less strong communication process. According to Watson (2016), every organization must develop a communication system that properly meets their demands. Effective communication methods may be explained even further by a succession of communication theories, such as critical theory, information theory, process of communication model, linear model, transactional model, and post-positive theory.

With the advent of the internet and, in particular, social media, information sharing has continued to evolve in recent years. According to Lipsman, Graham, Rich, and Bruich (2012), social media has had a profound impact on society, altering the way individuals communicate and characterize relationships. Social media encourages people to plan, create, and share information with one another. According to Leonardi, Huysman, and Steinfield (2013), social media incorporates a sophisticated system of web networks that allow the sharing of information or messages with individuals online.



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Organizations use social media platforms to communicate with their customers, which includes telling them about their products and services via marketing initiatives and campaigns. This may assist in acquiring new clients for their products or services, as well as retaining strong connections with existing ones. According to Khang et al. (2012), social media is used in enterprises to handle problems both internally and outside, such as with shareholders, stakeholders, and especially consumers, such as rectifying errors and responding customer inquiries. In this way, the organization fosters a close interaction with the general population. According to Gelms (2012), social media in organizations is helpful in conducting awareness campaign, giving organizations a competitive advantage in the market through product marketing and even brand reputation expansion.

## **Challenges and Barriers of Effective Communication**

Communication is one of the most basic mechanisms that both individuals and organizations must have in place. According to Lunenburg (2010), communication is a critical aspect that allows individuals or organizations to progress in all areas, including engaging with others.

According to Fujishin (2016), the message sent by a sender to a recipient may be less clear than intended. In this regard, the sender must always guarantee that he or she receives some type of response from the information/receiver message's in order to evaluate whether the message/information was fully comprehended. Communication difficulties or hurdles are seen at any stage of communication. According to Rogala and Biaows (2016), when there are problems or hurdles in a process of communication, the messages or information may be lost.



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According to Satapathy, Bhatt, Joshi, and Mishra (2016), a *physical barrier* in businesses includes marked-out portions, such as barrier screens, and locked office doors, which can prohibit outsiders or guests from approaching others for a dialogue or engagement.

Another type of problem that both individuals and organizations may face in their everyday operations is a *physiological barrier*. Some people have physical problems that make it difficult for them to communicate with others, such as those with impaired hearing, reading, or vision. A *perceptual barrier* is defined as a hurdle caused by the fact that some people perceive the world or things distinctively than others. According to Rogala and Biaows (2016), it is nearly impossible to communicate with someone who sees the world in a completely different way than others and reach a similar understanding.

An *emotional barrier* might enter a discourse, resulting in a skewed comprehension or perhaps a wholly twisted message. According to Fujishin (2016), some people or organizations confront situations in which emotions take over a communication process, ignoring facts and allowing subjective emotions to take over, leading to deceit, distrust, fear, or even disbelief.

*Cultural barriers* are a widespread issue in businesses as well as on an individual level. People in society regularly adopt the conduct of others with whom they socialize, even if passively (Smith & Dickson, 2016). Another prevalent difficulty in many organizations and societies is *language barriers*, in which persons unfamiliar with the language, vocabularies, or wordings used in an organization or community may feel excluded. Organizations can also face systematic hurdles, which include a scenario in



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which organizational structures are inadequate or irrelevant, such as a lack of suitable or effective informational structures or communication channels.

*Attitudinal barriers* that prevent people from communicating successfully are also widespread in companies. According to Cutler (2016), personality disorders or conflicts might produce attitudinal hurdles or challenges, resulting in a difficulty comprehending their acts or conduct.

Many businesses frequently face *psychological barriers* that limit how people exchange knowledge at both the individual and organizational levels. Smith and Dickson (2016) describe psychological obstacles as a condition in which an individual is not in their optimal mental state, either socially or intellectually, also referred as a mental illness. Even as companies attempt to enter into the digital realm of communication, the *technological barrier* is a rapidly growing issue.

## **Inter-organizational Communication Process**

Company partnership is an independent process of ongoing connection and message exchange between business partners (Holmlund, 1997). The necessity of good communication has grown tremendously because of globalization and internationalization. To get a greater grasp of the motivations of customer-supplier interactions, its features must also be studied. The major goal of this part is to enhance the basic understanding of B2B customer relationships as well as the current trend in their growth. According to Watkins and Hill (2009), the primary premise of relationship marketing is to create effective and mutually fulfilling relationships with business partners that expand through time.



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## **Intra-organizational Communication Process**

Active communication is required for it to be effective (Suzuki et al., 2018). Communication creates a common space in the context of multinational corporations (MNCs), allowing one business partner access to important knowledge stored by another party. Suzuki et al. (2018) investigated the frequency and relevance of communication in knowledge transmission in an organizational environment. It was discovered that intra-organizational communication is quite beneficial in achieving successful information exchange. Organizational culture is seen as an influential component in intra- and inter-organizational behaviour owing to its influence on the conduct of organizational members interacting internally and externally.

In terms of the long viewpoints, the company is most concerned with its security, effectiveness, and predictability, which are mostly attained through formal procedures. Chien and Wu (2006) discovered in an organizational environment that communication synchronization, resource sharing, connection maintenance, and justice recognition substantially led to marketing competence, which in turn leads to improved firm performance.

## **Systematic Review of Former Studies**

This section provides an overview of previous studies that investigated the antecedents of effective business communication in the B2B context, categorizes the factors to provide richer illustration, such as the role of cultural factors, technological factors, human factors, or others in constructing successful business communication between business parties. Figure 2 depicts the process of identifying and filtering relevant papers for the systematic review. To accomplish the systematic screening, 116 studies (89 from



scientific publications and 27 from other sources) were combined together. 86 papers were chosen for final analysis after a thorough screening procedure based on eligibility and inclusion criteria.

The systematic review technique is used to achieve this goal. Table 1 contains operational definitions for all constructions.

**Table 1. Factors that drive successful business communication**

Factor	Definition	Source
Leadership style	Persistent behavioral model and trait that is articulated in a leader's behavior	Xie et al. (2018)
Information quality	The extent that the message is considered as current, precise, meaningful, and useful	Rieh (2002)
Language	knowing as foreign language as main source of communication success, although non-native speakers of a certain language can have some proficiency in a shared language	Harzing and Feely (2008)
Frequency of interaction	The numbers of information or contacts transacted between the parties of communication	Mohr and Nevin (1990)
Diversity of interaction	the number of diverse documents or information which is exchanged between the parties	Cai et al. (2006)
Formality of interaction	The extent to which needs of communication as well as behaviors are clearly codified into rules, policies, and procedures	Jablin (1987)
Opportunistic behavior	To the extent that self-centered actions are taken contrary to the business partner's interests	Gundlach et al. (1995)
Trust	A belief of a firm that business partner will conduct actions leading to positive results, and will not take unexpected	Anderson and Narus (1990)



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	engagements leading to negative consequences	
Commitment	The longing for continuity characterized by readiness to put in resources into relationship	Gounaris (2005)
Supplier performance	Ability to supply required products and services to the buyer firm	Dobler and Burt (1996)
Buyer performance	Ability of acquiring services, materials, and equipment that are used for the functioning of the firm, and for managing supplier bases	Dumond (1991)
Perceived identification	psychological consequences through which individuals perceive themselves belonged to a group, and valued by others	Lampe et al. (2010)
Satisfaction	An entire post-purchase assessment of the last consumer verdict	Baxter (2012)

## Conceptual Model and Hypotheses

The current research proposes the following hypotheses, as in Table 2:

**Table 2. Hypotheses summary**

Hypothesis	Determinant factor	Moderator	Outcome factor
<i>H1a</i>	Organizational culture		Internal communication
<i>H1b</i>	Organizational culture		External and cross-company communication
<i>H1c</i>	Shared values		Internal communication
<i>H1d</i>	Shared values		External and cross-company communication
<i>H1e</i>	Language		Internal communication
<i>H1f</i>	Language		External and cross-company communication
<i>H2a</i>	Top management support		Internal communication
<i>H2b</i>	Top management support		External and cross-company communication
<i>H2c</i>	Information technology		Internal communication
<i>H2d</i>	Information technology		External and cross-company communication

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			communication
<i>H2e</i>	Leadership style		Internal communication
<i>H2f</i>	Leadership style		External and cross-company communication
<i>H3a</i>	Information quality		Internal communication
<i>H3b</i>	Information quality		External and cross-company communication
<i>H3c</i>	Frequency of interaction		Internal communication
<i>H3d</i>	Frequency of interaction		External and cross-company communication
<i>H3e</i>	Diversity of interaction		Internal communication
<i>H3f</i>	Diversity of interaction		External and cross-company communication
<i>H3g</i>	Formality of interaction		Internal communication
<i>H3h</i>	Formality of interaction		External and cross-company communication
<i>H3i</i>	Opportunistic behavior		Internal communication
<i>H13j</i>	Opportunistic behavior		External and cross-company communication
<i>H4a</i>	Intra-organizational communication		Supplier performance
<i>H4b</i>	Inter-organizational communication		Supplier performance
<i>H4c</i>	Intra-organizational communication		Buyer performance
<i>H4d</i>	Inter-organizational communication		Buyer performance
<i>H5a</i>	Intra-organizational communication		Perceived identification
<i>H5b</i>	Inter-organizational communication		Perceived identification
<i>H6a</i>	Intra-organizational communication		Overall satisfaction
<i>H6b</i>	Inter-organizational communication		Overall satisfaction
<i>H7a</i>	Cultural factors	<b>Trust</b>	Internal communication
<i>H7b</i>	Cultural factors	<b>Trust</b>	External and cross-company communication

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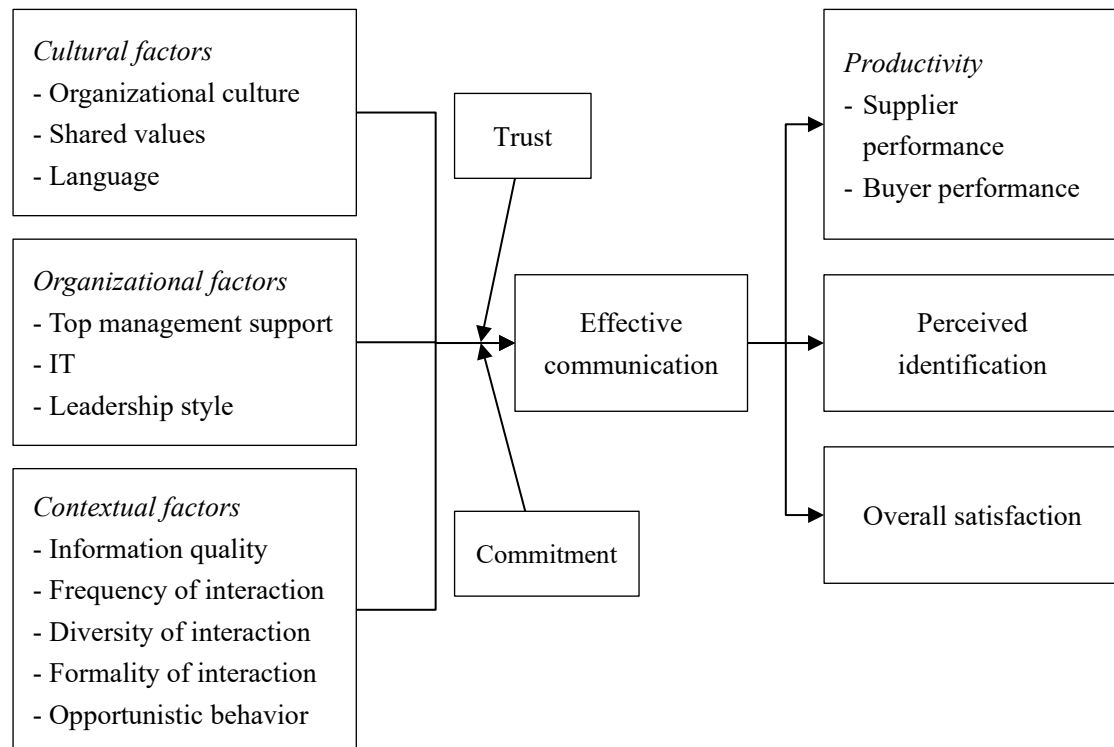


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<i>H8a</i>	Organizational factors	<b>Trust</b>	Internal communication
<i>H8b</i>	Organizational factors	<b>Trust</b>	External and cross-company communication
<i>H9a</i>	Contextual factors	<b>Trust</b>	Internal communication
<i>H9b</i>	Contextual factors	<b>Trust</b>	External and cross-company communication
<i>H10a</i>	Cultural factors	<b>Commitment</b>	Internal communication
<i>H10b</i>	Cultural factors	<b>Commitment</b>	External and cross-company communication
<i>H11a</i>	Organizational factors	<b>Commitment</b>	Internal communication
<i>H11b</i>	Organizational factors	<b>Commitment</b>	External and cross-company communication
<i>H12a</i>	Contextual factors	<b>Commitment</b>	Internal communication
<i>H12b</i>	Contextual factors	<b>Commitment</b>	External and cross-company communication

To summarize, twenty hypotheses are generated in order to thoroughly study the factors of successful communication in business processes and their impact on business outcomes such as performance, social identity, and mutual satisfaction of communication partners. Furthermore, this study distinguishes between internal and external communication to provide light on the communication process that occurs within the company (e.g., among employees, managers, leaders, and so on) and outside of the business (e.g., between buyer and supplier firms). Figure 1 depicts the proposed correlations.



**Figure 1. Proposed model**

## Research Method

To conclude, twenty hypotheses are established in order to completely investigate the elements influencing successful communication in business processes and their impact on business performance and ultimately, social identity, and mutual satisfaction of communication partners. Furthermore, this study differentiates among internal and external communication to provide light on the communication process that takes place within the organization (e.g., among employees, managers, leaders, and so on) and outside of the company (e.g., between buyer and supplier firms).



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## **Sampling**

To reach out to the target respondents, several routes and strategies are employed, such as personal contacts who work at medium and large enterprises with international operations. These contacts were also invited to distribute the survey to their local supply chain partners, and 417 workers from 38 organizations were contacted this way. For the convenience of respondents, the survey questionnaire was created in both online and offline (hard copy) formats. Second, social media sites such as LinkedIn were used to engage with SME leaders and managers.

The technique for gathering data is separated into two stages. First, a pilot survey was conducted. A pilot survey allows researchers to fine-tune small problems based on expert feedback and make necessary changes.

## **Analysis and Results**

The respondents' demographic profile was measured using eleven indicators, including gender, age, education, language skills, job position, firm size, income level, industry in which the firms operate, the type of communication that firms prefer when interacting with their business partners, communication frequency with their partners, and business scale, which refers to how many countries the firms have business partners from.

Following the demographic statistics of the respondents, descriptive statistics such as Mean scores and standard deviations (SD) were provided, which assisted in identifying the respondent firms' major preferences of the factors that significantly affect the effectiveness of business communication with their partners.



The measuring model was provided after the descriptive statistics. Measurement model testing is regarded as an important aspect of the data analysis process, as well as the backbone of hypothesis testing in SEM analysis. In order to validate the measurements in the context of an effective business communication process, measurement model testing includes indicators such as Cronbach's alpha ( $\alpha$ ), indicator factor loadings or confirmatory factor loadings (CFA), composite reliability (CR), and average variance extracted (AVE). Finally, structural model testing was used to assess the provided hypotheses between the variables, which included moderators (trust and commitment). In this part, the outcomes of the hypothesis testing were also provided and briefly discussed. The Explanation section contains a full discussion of the findings.

### **Demographics**

We were able to collect 397 questionnaires from those firms as a consequence of the survey procedure. 45 of the 397 questionnaires were discarded because some of the respondents' replies were repeated, while others' answers were incomplete, potentially increasing the bias if included in the study. In all, 352 replies (89 percent) were included in the analytic procedure.

Male respondents outnumber female responders by a wide margin (57.7%). Regarding their ages, it is found that the majority of them (27.0%) belong to the middle age (35-44) group, followed by the 25-34 age group (24.7%).

Nearly 36% of respondents have a Master's degree, while over 30% have a Bachelor's degree. We also asked the respondents how many languages they spoke. According to the statistics, 32.4% can speak two languages and 29.0% can speak three.





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34.1% work in the marketing department, namely communications and public relations personnel, marketing analysts, and 31.8% work as managers, with managers being important decision-makers in local and worldwide contacts with supplier and customer organizations. Purchasing managers, accounting managers, quality control managers, and executive assistants are the most common answers in management roles. Finally, approximately 18.2% work as sales agents with direct contact with other business partners. Firm-specific questions suggest that 36.4% of respondents' enterprises employ 50 to 100 people, with 33.2% employing 101 to 300 people.

## **Descriptive Statistics**

The descriptive statistics in the current study comprised the means and standard deviations of the variables as well as the items that represented them. Trust has the highest mean score ( $M = 3.62$ ,  $SD = 1.26$ ), followed by Transformational leadership ( $M = 3.54$ ,  $SD = 1.61$ ), Productivity ( $M = 3.53$ ,  $SD = 1.24$ ), and Perceived identity ( $M = 3.52$ ,  $SD = 0.93$ ), according to the descriptive data.

Transactional leadership has the lowest score ( $M = 2.49$ ,  $SD = 0.81$ ), indicating that in today's global corporate climate, people favour transformational leadership above transactional leadership. Furthermore, Market culture is shown to have a lower mean score ( $M = 2.50$ ,  $SD = 0.94$ ). It demonstrates that respondents are likewise concerned about their companies' internal culture. Adhocracy culture has a higher mean score ( $M = 3.43$ ,  $SD = 1.24$ ), indicating that they believe that in the modern era, firms must put more effort into transforming the inner organizational culture, which must be innovation-oriented, support individual decision-making across different business units, and provide individualized attention to each employee, all of which can lead to a strong organizational structure.



## Measurement Model

Based on the classification of the Cronbach findings of the study variables in relation to the above cut-off points, fourteen variables, namely, Shared values, Language, Information technology, Adhocracy culture, Market culture, Hierarchy culture, Top management support, Transformational leadership, Frequency of information, Diversity of interaction, Trust, Satisfaction, Perceived identification, and Productivity, demonstrated high reliability between 0.70 and 0.90. Among these factors, Adhocracy culture ( $\alpha$  - 0.89), Perceived identification ( $\alpha$  - 0.87), Transformational leadership ( $\alpha$  - 0.86), Market culture ( $\alpha$  - 0.85), and Productivity ( $\alpha$  - 0.83) shown stronger dependability when compared to others. Seven factors, namely Effective communication ( $\alpha$  - 0.69), Information quality ( $\alpha$  - 0.68), Transactional leadership ( $\alpha$  - 0.67), Commitment ( $\alpha$  - 0.66), Clan culture ( $\alpha$  - 0.66), Opportunistic conduct ( $\alpha$  - 0.63), and Formality of interaction ( $\alpha$  - 0.62), demonstrated moderate dependability.

All convergent validity test conditions have been satisfied. Three items (TRCL2, IQ5, and DI2) were removed from the CFA because they did not load on their related construct. Furthermore, CR values vary from 0.69 to 0.85, while AVE values range from 0.51 to 0.66.

## Goodness of Fit

The results show that both models meet the pre-defined criteria, showing that the model is well-fitting. Kline (2005) and McDonald and Ho (2002) recommended values for Chi square/df, also known as the degree of freedom, Tucker-Lewis Index (TLI), Comparative Fit Index (CFI), Root Mean Square Error for Approximation (RMSEA), and Standardized Root Mean Residual (SRMR), which all demonstrated acceptable



results and internal consistency of the research variables (see Table 3).

**Table 3. Goodness of fit indices**

	Chi square/d.f	CFI	TLI	RMSEA	SRMR
Accepted value	<3.00	≥0.90	≥0.90	<0.08	<0.05
Model 1	1.32	0.94	0.92	0.05	0.03
Model 2	1.28	0.92	0.94	0.04	0.02

## Structural Model

### *Intra-organizational communication*

The hypothesis findings demonstrate that among the cultural components, Organizational culture ( $\beta = 0.231^{**}$ ,  $p$  0.01) and Shared values ( $\beta = 0.244^{**}$ ,  $p$  0.01) are positively and substantially associated to Effective communication among workers, however Language ( $\beta = 0.017$ ,  $p = 0.487$ ) does not. As a result, *H1a* and *H1c* are accepted, whereas *H1e* is denied. This conclusion can be explained by the fact that language is not a key predictor of communication success in intra-firm relationships. Because employees may speak the same language, there is no language barrier between them. However, organizational culture is crucial.

Other organizational elements that influenced effective communication were top management support, information technology, and leadership style. Top management support ( $\beta = 0.227^{**}$ ,  $p$  0.01) and leadership style ( $\beta = 0.316^{***}$ ,  $p$  0.001) are shown to be favourably and substantially associated to Effective communication, but information technology ( $\beta = 0.101^*$ ,  $p$  0.05) has a marginally significant impact on Effective communication. It appears that technology instruments are not the mechanism by which communication efficacy in intra-firm interactions is determined, rather excellent leadership skills of managers and team leaders, as well as backing from higher



management, are thought to improve communication among subordinates. As a result, *H2b*, *H2c*, and *H2e* were all supported.

Among the contextual factors, it is discovered that Frequency of interaction ( $\beta = 0.174^*$ ,  $p < 0.05$ ) and Diversity of interaction ( $\beta = 0.213^*$ ,  $p < 0.05$ ) affect Effective communication slightly significantly and positively, whereas Formality of interaction ( $\beta = -0.108^*$ ,  $p < 0.05$ ) and Opportunistic behaviour ( $\beta = -0.310^{***}$ ,  $p < 0.001$ ) are negatively related to Effective communication. Furthermore, information quality ( $\beta = 0.016$ ,  $p = 0.376$ ) has no relationship with effective communication. Furthermore, *H3c*, *H3e*, *H3g*, and *H3i* are supported, however *H3a* is not.

Supplier performance ( $\beta = 0.269^{**}$ ,  $p < 0.01$ ), Buyer performance ( $\beta = 0.307^{***}$ ,  $p < 0.001$ ), Perceived identification ( $\beta = 0.246^{**}$ ,  $p < 0.01$ ), and Overall satisfaction ( $\beta = 0.259^{**}$ ,  $p < 0.01$ ) are found to be positively and substantially associated to effective communication. Finally, higher satisfaction rate will be accomplished. Hence, *H4a*, *H4c*, *H5a*, and *H6a* are supported.

Trust and Commitment were tested in internal communication process as well. Trust is found to strongly moderate the relationships of cultural factors ( $\beta = 0.423^{***}$ ,  $p < 0.001$ ) and organizational factors ( $\beta = 0.377^{***}$ ,  $p < 0.001$ ) with Effective communication, while it does not have a moderating effect on correlation between Contextual factors ( $\beta = 0.003$ ,  $p = 0.276$ ) and Effective communication. Moreover, *H7a* and *H8a* are confirmed, whereas *H9a* is rejected. In the context of commitment, it only has a moderating impact on the correlation between Organizational factors and Effective communication ( $\beta = 0.228^{**}$ ,  $p < 0.01$ ), whereas it has no moderating impact on correlation between the Cultural factors ( $\beta = -0.013$ ,  $p = 0.251$ ) and Contextual factors



( $\beta = 0.038$ ,  $p = 0.191$ ). Hence, *H11a* is supported, while *H10a* and *H12a* are rejected.

### ***Inter-organizational communication***

The findings show that organizational culture ( $\beta = 0.248^{**}$ ,  $p 0.01$ ), shared values ( $\beta = 0.221^{**}$ ,  $p 0.01$ ), and language ( $\beta = 0.316^{***}$ ,  $p 0.001$ ) all have a positive and substantial influence on effective communication. As a result, *H1b*, *H1d*, and *H1f* are supported. This conclusion can be explained by the fact that language is a crucial indication of creating successful commercial collaborations with abroad enterprises in intra-firm connections. Language may not be significant in an internal organizational context.

Organizational characteristics such as top management support, information technology, and leadership style were also investigated as potential predictors of effective communication. It is discovered that top management support ( $\beta = 0.245^{**}$ ,  $p 0.01$ ) and information technology ( $\beta = 0.281^{**}$ ,  $p 0.01$ ) are positively and substantially connected to Effective communication, however leadership style ( $\beta = 0.097$ ,  $p = 0.219$ ) has no effect. Hence, *H2b* and *H2d* are supported, while *H2f* is not supported.

Frequency of interaction ( $\beta = 0.116^*$ ,  $p < 0.05$ ), and Diversity of interaction ( $\beta = 0.183^*$ ,  $p < 0.05$ ) significantly and positively influence Effective communication, whereas Formality of interaction ( $\beta = 0.023$ ,  $p = 0.205$ ) is not related to Effective communication. In addition, and Opportunistic behavior ( $\beta = -0.243^{**}$ ,  $p < 0.01$ ) is negatively related to Effective communication. Moreover, *H3b*, *H3d*, *H3f*, and *H3j* are supported, while *H3h* is not supported.



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## Conclusion

The empirical findings supported a major number of the predicted links, allowing the proclamation of excellent communication as a focal point in global business in the realization of specific benefits for both suppliers and buyers. In terms of implementation, adopting an effective cooperative communication strategy and properly determining its determinants can have a positive and long-term impact on successful corporate partnerships (Paulraj et al., 2008). If the goal is to create a low-cost framework for intra- and inter-firm communication, the attractiveness of connections as components should be considered at the same time. To summarize, this research can assist both domestic and foreign enterprises in becoming more socially linked with their international partners and investing in building a global language spoken environment that helps their salesmen and management overcome language barriers. When business partners agree to exchange relevant and diverse information on a regular basis, have the same goals, and speak the same language, they are more likely to build successful communication that will result in positive monetary and social outcomes. A long-term partnership view is essential but not sufficient for delivering decisive advantage in supplier companies, but in buyer enterprises, developing network governance may not be adequate.

Cultural influences may result in a new type of communication process for multinational firms operating in different parts of the world. Nonetheless, because each country and its firms may be a major provider of a variety of products and services ranging from consumer electronics to large industrial products, the model developed in this study could aid future research by increasing the sample size, collecting more information from many other countries and possibly from a country's foreign trading





partners, and conducting a comparative study to distinguish cultural factors from those of their global partners.

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## **Female Employees' Commitment and Nigerian Deposit Money Banks' Performance**

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### **Abstract**

This study explores the impact of employees' commitment on non-financial performance (measured by competitiveness) female employee's commitment (measured by continuance commitment, affective commitment as well as normative commitment) of selected deposit money banks. The study used survey design; this was done by the administration of well-structured questionnaires on some selected female staff members of the selected banks in Nigeria. The survey included 36, 506 staff members of the four deposit money institutions selected. A 4-point-scale questionnaire of the Likert kind was given to 494 female staff employees of the selected banks. The findings revealed that continuance, affective and normative commitments had a significant combined influence on non-financial performance of deposit money banks ( $F\text{-stat} = 81.37 * 0.000$ ). The adjusted  $R^2$  suggests that 37.8 percent of the variation in non-financial performance of deposit money banks is accounted for by female employee commitment. The t-values demonstrate that the three independent variables all have individual significant effect on the non-financial performance





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of deposit money institutions. The study therefore suggests that the commitment of female employees improves the performance of deposit money banks in Nigeria. Thus the result suggests that employee commitment is critical to the competitiveness of deposit money banks.

**Keywords:** Affective Commitment, Competitiveness, Continuance Commitment, Deposit Money Banks, Female Employee Commitment, Non-Financial Performance, Normative Commitment

## 1. Introduction

Human capital constitutes the most important resources of firms, as it coordinates and manages other firms' resources, like: financial capital, raw materials, machinery and physical structure, among others. This has propelled firms to increase their interest in attracting and retaining committed employees, towards a better performance. This is particularly important for the highly competitive banking sector in Nigeria, as the continued survival of any bank is dependent on good performance over time.

Several scholars have found the existence of a link between the commitment of employees and firm's performance. For instance, Baruah and Subedi (2012) found that the commitment of the employees towards the organizational objective led to the revival of ailing Juke Mill in India. Similarly, Ireferin, and Mechanic (2014) found that employee commitment significantly affect the performance of Coca-Cola Nigeria Ltd. Furthermore, Andrew (2017) found that employees commitment significantly affect organisational performance in Sri-Lanka.



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However, a good number of the existing studies on employees' commitment concentrated on financial performance metrics, thereby neglecting the effect of employees' commitment on firms' non-financial performance. Abosedo, Eze and Sowunmi (2018) posit that non-financial performance metrics have a tendency to improve the future financial performance of an organization. Furthermore, most studies on employees' commitment sees employees as a broad term representing the two major gender classifications (Male and Female). Considering the fact that the commitment of male employees might differ from that of their female counterpart, it becomes necessary to study employees' commitment from the perspective of gender.

In view of the preceding premises, the relationship between the commitment of women and non-financial performance of the banking sector ought to be examined, with special regard to organizational competitiveness. The nature of the dedication of women employees to the highly regulated and competitive banking sector also needs to be reviewed. In addressing the gap in literature, this study is designed to assess the effect of the commitment of female employees on the non-financial performance of deposit money institutions.

The significance of this study can be perceived from threefold: Firstly, it extends prior studies on the commitment of employees, particularly that of female employees. Secondly, this study's findings and policy consequences will be relevant for the banking sector. The study also opens up a new research perspective on the commitment of female employees and non-financial performance criteria.



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This work is broken into five parts: the first section presents the subject and gives an account of the problem. The second section presents a conceptual and theoretical literature assessment on the broad notion of employee commitment and its components and on the concept of performance. The third portion focuses on the research approach. The fourth part, presents the results. The fifth part finally sets out the conclusions and recommendations.

## **2. Conceptual Clarification and Hypotheses Formulation**

The highly competitive business environment across the globe is propelling firms to create a conducive working environment for workers, so as to improve the commitment of the workers, which tends to affect firms survival. Most firms have understood that the performance of their employees tends to determine their overall organizational performance. As a result, managers and business owners have developed ways to ensure that their workers are committed to their job, through the introduction of some factors like motivation, offering flexible working arrangement or more training.

Porter, Steers, Mowday and Boulian (1974) posit that commitment is the level of emotion the individuals have toward their firms. Lumley, Coetzee, Tladinyane and Ferreira (2011) view employee commitment from the viewpoint of employees' involvement within the firm. Furthermore, Porter, Steers, Mowday and Steers (1982) opine that an employee that believes in the firm's vision, mission, values, objectives and standard are more likely to stay more in the firm. Such employees equally tend to have a yearning to put in their very best towards attaining the firm's objectives, and they see themselves as the most significant resources in the firm, which tend



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to enhance their sense of belonging as well as their job satisfaction and performance. Shevchuk and Melnikova (2020) posit that job satisfaction is usually determined by some external factors rather than the employees' personal qualities.

Vakola and Nikolaou (2005) argue that employees usually have their expectations from their firms and when their expectations are met by the firm, they tend to be committed to the firm. Vakola and Nikolaou (2005) further argue that employees' commitment can be viewed from three angles: Firstly, accepting of the firm's standards and value; secondly, the drive of workers to do their very best and put in more effort to attain the firms' goals; thirdly, the strong drive to be part of the firm.

Herold, Fedor, Caldwell and Liu (2008) argue that the commitment of employees is the workers' response to changes. In particular, it means the level of acceptability of the change introduced and if workers are open to changes implemented in the company over time. In this respect, the commitment of employees is the most important aspect companies require to accomplish changes.

Contrary, Fu and Deshpande (2013) consider that the commitment of employees is not judged by the level of acceptability of the change carried out, but rather is determined by the level of identification of employees in the company. Kim (2013) argues that the commitment of employees is the bond that they develop with their company during their stay. Ugboro and Obeng (2001) also claim that employees' commitment is their belief in the values of the company. Akram, Afzal and Ramay (2017) claim that the employees' attitude is the commitment.



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From the above, it can be deduced that researchers have not been able to reach a consensus on the definition of employees' commitment. However, employees' commitment can be viewed from the perspective of the commitment exhibited by employees towards the attainment of firms' goals. Similarly, female employees' commitment can be seen from the perspective of commitment shown by female employees towards attaining their organisation's objectives.

Allen and Meyer (1990) have recognized three components of employee commitment: affective, continuance and normative commitments. They considered affective commitment to be the most symbolic commitment of employees. It shows the emotional commitment of employees to their business and their vision, mission and goals. Employees acquire a dedicated commitment to their organization as they feel competent and delighted with their function as employees (Tsai, Cheng & Chang, 2010; Ugboro & Obeng, 2001).

Affective commitment that is often cited as behavioural commitment considers the workers passionate connection to the firm and it is burdened with the degree to which the workers appreciate their involvement with the firm and identify themselves with the firm (Culpepper, Gamble, & Blubaugh, 2004; Lumley, Coetzee, Tladinyane.& Ferreira, 2011; Torrington, Hall & Taylor, 2005). In line with the proposition of Meyer and Allen (1991), affective commitment is usually determined by the worker's outlook as well as wants regarding the firm and whether or not that match or not, in line with their actual expertise. It is expected that female employees' affective commitment will positively affect the competitiveness of banks. Therefore, the study predicts the following hypothesis:



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## **H1: Female affective commitment significantly affects deposit money banks' performance**

Continuance commitment is the intellectual connection between companies and their personnel due to the fact that the price of leaving the company overshadows the advantages (Walsh&Taylor, 2002).

The charge may additionally include dropping appropriate pay and other benefits, setup networks or connections, and task seek costs, among others.

Continuance commitment is equally seen as calculative dedication (Hansen, Sandvik & Selnes, 2003) on account that it is based on the charges the employees ascribe to exiting the company (Meyer & Allen, 1991).

Younger workers are more likely to leave the organization because they do not have a sufficient work experience and the value of leaving is less than for older staff that have incredible experience (Meyer & Allen, 1984). Furthermore, continuance commitment is also afflicted by the level of investments of the organization. An increase in corporate investment tends to make the company more desirable for its personnel, hence increasing the commitment of its employees (Meyer & Allen, 1991). In short, job satisfaction is a crucial factor which impacts the continued commitment of the employees.

If a person is content with the job, the cost of quitting the company is higher. Thereby, enhancing employees' continuance commitment and such an employee will continue to work with the firm. The enhanced continuance commitment tends to improve the performance of such firms. It is





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hypothesis that female employees' continuance commitment will positively affect banks' performance.

## **H2: Female continuance commitment significantly affects deposit money banks' performance**

The normative commitment denotes the feeling of responsibility to continue with a business (Walsh & Taylor, 2002). Workers believe that they are morally right to do so because they have received scholarships, training investment and other incentives from the establishment. Issues that could impact the level of normative commitment are schooling, age, sense of belonging. Early job experiences, psychological contract and job match also tend to enhance commitment.

Meyer and Allen (1991) opine that normative commitment has attracted less research interest, and it has developed theoretically than empirically. Normative commitment refers to the connection among people and corporation (Baruah & Subedi, 2012). This is the employee's feeling of responsibility to remain in the employment of the company (Culpepper, Gamble & Blubaugh, 2004), couple with their recognition on what seems proper (Meyer et al, 2002). Normative commitment has a few similarities with affective commitment in a few issues; however, it is prompted by subjective norms about the degree to which employees need to show commitment to their firm. It is expected that female employees' normative commitment will enhance deposit money bank's performance. The study thus hypothesises the following:



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## **H3: Female normative commitment significantly affects deposit money banks' performance**

### **2.1 Firm performance**

Performance is a multifaceted notion that defines the accomplishment of a business as well as its level of realizing the business objectives. Conventionally, businesses employ performance measures, such as revenue, profit, return on asset, dividend and return on equity, among others, which are all financial performance metrics. Firms can also employ non-financial metrics, such as efficiency, effectiveness, employees' performance, market share and competitiveness or competitive advantage, among others lately, new dimensions of overall performance (consisting of the utilization of inputs, exceptional, innovation, and best of work-life) have been introduced to the non economic performance metrics, and the concept of what constitutes successful, powerful, or sustainable overall performance has been greatly broadened. Today, dimensions like employees' behaviour, marketplace share, product or market place leadership, international performance, competitiveness and corporate obligation should be incorporated in the assessment of firms' performance (Abosedo, Eze & Sowunmi, 2018; Eze, 2018).

The stakeholder's perspective usually determines how performance is interpreted and each group of firm's stakeholder may have an extraordinary view of the company's performance making



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it essential for a researcher to choose an angle of performance that agrees with the phenomena of interest. Each firm's stakeholder can have a distinctive perception of what is "valuable" primarily based upon their reason for associating with the organization.

This study employs non-financial measure, particularly the firm's competitiveness, which is seen as the bank's ability to out-perform their competitors. Abosede, Eze and Sowunmi (2018) posit that non-financial metrics have a tendency to improve the future financial performance of an organization. That is, non-financial performance metrics drive the management of firms to take steps that tend to improve the attainment of their long term objectives.

The fourth proposition combines the three elements of female employees commitment employed for this study (affective, continuance and normative commitment), thereby examining the combined effect of the three female employees commitment elements on deposit money banks performance. It is therefore hypothesise that

**H4: Female employees' commitment elements have a significant combined effect on deposit money banks' performance.**

## 2.2 Theoretical Framework

The theory underpinning this study is the expectancy theory, which was propounded by (Georgopoulos, Mahoney & Jones, 1957). The path-goal approach constitutes the base of expectancy theory. The theory postulates that an employee that views high degree of efficiency as a road that will lead to the attainment of one or most of their desires or needs, such an



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employee has the tendency to be highly efficient. In contrast, if such a worker views low productiveness as a course to the attainment of their goals, their productiveness tends to be low.

Created by using a mixture of the subsequent three factors: expectancy (this consists of the worker's own assessment of whether or not performing in a certain way will result in a selected final results); instrumentality (this is involved with the perceived possibility that such outcome will cause attaining a given reward); and valence (related to the employee's evaluation of the likely pleasure) (Gerhart & Fangb, 2014).

The expectancy principle is primarily based on the "law of impact" (Gerhart & Fangb, 2014), which affirms that rewarded deeds have a tendency to be repeated. Therefore, performance may additionally well be employed in propelling employees that are perceived as overpaid performers to enhance their performance, which will lead to the provision of adequate reward package for the best performers, so as to eliminate the feeling of underpayment. This implies that the level of commitment of female employees tend to affect their performance, which will equally affect the overall performance of a firm.

### **3. Methodology**

This section shows how this investigation is conducted. It consequently focussed on the methodology employed to analyze the influence of women's commitment on deposit money banks' non-financial performance in Nigeria. This part starts with the research design adopted for the



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study, it continues with the population of the study, the derivation of the sample size, instrumentation, testing of the validity as well as the reliability of the research instrument, data collection, formulation of model and the analytical tool employed to analysed the data. The research design for this study has been adopted because the data on the subject matter is not readily available and it tends to help grasp the studied phenomenon. Researchers with related goals also used survey design (Andrew, 2017; Baird, 2019; Baruah & Subedi, 2012). There are 36,506 employees from four selected financial banks, namely Zenith Bank, United Bank for Africa, First Bank and Guaranty Trust Bank, in this study. The reason why these four deposit money banks have been selected is that they are among Nigeria's top ten deposit money banks. The female staff employees from the four banks were the element of observation of this study. The following are the number of workers of the banks:

**Table 1. Number of employees of the target banks**

S/N	Name of Company	Number of Employees
1	GTB	10, 000
2	UBA	12,908
3	FBN	7, 616
4	Zenith Bank	5, 982

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	<b>TOTAL</b>	36, 506
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**Source:** Author's compilation from the firms' website

The study used stratified and simple random sampling. The population was categorized into 4 strata based on a simple random sample method performed for each stratum. To establish the sample size of this investigation, the Taro Yamane sample size measurement approach was employed at 95 percent confidence level and a 5 percent error margin, giving a sample size of 380. It was assumed that the non-response rate was 30%, increasing the sample size to 494 (380+114). The sample assigned to each company is given below:

**Table 2. The sample size allocated to each of the target bank**

S/N	Name of Company	Number of Female Employees
1	GTB	124
2	UBA	124
3	FBN	123
4	Zenith Bank	123
	<b>TOTAL</b>	494

An Employee Commitment Questionnaire was created by Allen and Meyer (1990), incorporating the three dimensions of employee commitment: affective, normative, and continuance. The





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measure was converted to a 4-point Likert scale. In total, the instrument received 4, 3, 2 and 1 scores.

The survey had five sections. Sections A, B, C, D, and E. Sections A was designed to obtain the respondents demographic data, while Sections B, C, D, and E addressed the research objectives. The tool had construct and content validity, since it was an instrument used, established and tested by Allen & Meyer (1990). However, the instrument was further subjected to test of validity and reliability. The instrument's content validity index (CVI) was determined by five independent evaluators from Olabisi Onabanjo University and Hallmark University. The independent assessors scored each questionnaire item on a two-point scale: relevant or irrelevant. Content validity of the instrument was determined using CVI:

$CVI = n/N$  N = total number of items in the instrument

n = number of relevant elements

The CVI gave a value of 0.7459. Eze (2018) opined that a CVI value greater than or equal to 0.7 is adjudged valid. Therefore, the instrument was adjudged to be valid in measuring the variables. Cronbach alpha was used to ascertain the reliability or the consistency of the instrument. The reliability of the entire variables was examined through the consideration of the load of the items measuring the variables. To retain a variable or an item, the alpha coefficient should be greater than 0.70.

### 3.1 Model Specification



The model aggregates the elements of employees' commitment; it examined its individual and combined effect on DMBs performance. The model addresses the broad objective of the research, which is to determine the effect of female employees' commitment on Nigerian DMBs performance. The model specification is stated below:

### Model 1

The model specification for hypothesis one is stated below:

$$PERF = f(FAC) \text{-----} (1)$$

$$PERF = \beta_0 + \beta_1 FAC_i + \mu_i \text{-----} (2)$$

Where:

PERF represents performance

FAC represents Female Affective Commitment

$\beta_0$  is the constant term

$\beta_1$  is the coefficient of the estimator.

$\beta_1 > 0$

The a priori expectation- Female's affective commitment is projected to have a favorable impact on the performance of deposit money institutions; consequently, the parameter of female affective commitment should have a positive sign.

### Model 2



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The model specification for hypothesis two is stated below:

$$PERF = f(FCC) \text{-----} (1)$$

$$PERF = \beta_0 + \beta_1 FCCi + \mu_i \text{-----} (2)$$

Where:

PERF represents performance

FCC represents Female Continuance Commitment

$\beta_0$  is the constant term

$\beta_1$  is the coefficient of the estimator.

$$\beta_1 > 0$$

The *a priori* expectation- female continuance commitment is predicted to have a favorable effect on the performance of deposit money institutions; therefore the parameter for female continuance should have a positive sign.

### Model 3

The model specification for hypothesis three is stated below:

$$PERF = f(FNC) \text{-----} (1)$$

$$PERF = \beta_0 + \beta_1 FNCi + \mu_i \text{-----} (2)$$

Where:



PERF represents performance

FNC represents Female Normative Commitment

$\beta_0$  is the constant term

$\beta_1$  is the coefficient of the estimator.

$\beta_1 > 0$

The *a priori* expectation, The predicted effects of female's normative commitment on the performance of deposit money banks are projected to be positive; therefore the parameter of female normative commitment should have a positive sign.

#### Model 4

The model specification for hypothesis four is stated below:

$$PERF = f(FAC, FCC, FNC) \text{_____} (1)$$

$$PERF = \beta_0 + \beta_1 FAC_i + \beta_2 FCC_i + \beta_3 FNC_i + \mu_i \text{---} (2)$$

Where:

PERF represents Performance

FAC represents Female Affective Commitment

FCC represents Female Continuance Commitment

FNC represents Female Normative Commitment



$\beta_0$  is the constant term

$\beta_1, \beta_2$  and  $\beta_3$  are the coefficients of the estimator.

$\beta_1, \beta_2, \beta_3 > 0$

#### *Apriori* Expectation

It is assumed that female effective, continuance, and normative commitment will all favorably affect the non-performance of DMBs, hence the parameters of female affective, continuance, and normative commitment should all be positive.

All regression models were estimated using the Ordinary Least Squares approach. It was used to test if the independent variables affect the dependent variables (performance). The null hypotheses was accepted or rejected at 5% significance (0.05). The analysis uses STATA 14 software.

#### **4. Results and Discussions**

In the four deposit-money banks selected, female workers received 494 copies of the structured questionnaires. However, just 409 copies have been returned and 398 copies have been deemed to be useful. The analysis was therefore based on the completed 398 copies.

#### **Table 3. Construct reliability**

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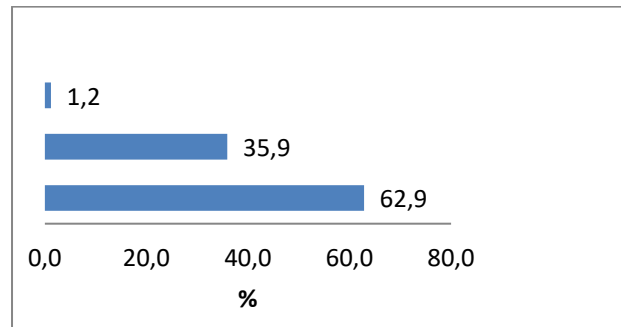
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<b>Components</b>	<b>Cronbach's Alpha Average Variance Extracted (AVE)</b>	<b>rho_A</b>	<b>Composite Reliability</b>	<b>Average Variance Extracted (AVE)</b>
<b>Female Affective Commitment</b>	0.979	0.979	0.979	0.662
<b>Female Continuance Commitment</b>	0.899	0.899	0.899	0.669
<b>Female Normative Commitment</b>	0.901	0.901	0.901	0.640
<b>Competitiveness</b>	0.812	0.812	0.812	0.619

Table 4.1 shows the outcome of the Cronbach's Alpha, Composite Reliability and Average Variance Extracted (AVE). It can be seen that all the elements fall within the acceptable level.





**Figure 1: Indicating Respondents Work Experience**

**Source: Survey (2020)**

Figure 4.1 showed that 62.9% of respondents have worked with their banks for approximately 1-5 years and 35.9% have worked with their banks for approximately 6-10 years while 1.2% have worked with their banks for more than 11 years. This means that most respondents are relatively familiar with the functioning of their banks.

### Hypotheses Testing

**Hypothesis One** (Female affective commitment significantly affects deposit money banks' performance)

**Table 4: Summary of hypothesis1 result (Dependent Variable – Performance)**

Variable(s)	Coefficient	T-statistics	P-Value
C	9.01345	9.03	0.0000



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Female Affective Commitment	0.413652	6.08	0.0000
F-Statistics 58.41 (0.0000)		R-Square= 0.2490	

### *Author's computation from STATA 14*

#### **Source: Fieldwork (2020)**

The result in the table 4 showed a favorable and substantial connection between the affective female commitment and the performance of deposit money banks (coefficient = 0.413652,  $t = 6.08$ ,  $p\text{-value} < 0.05$ ). This implies that the higher the degree of female affective commitment, the better the banks' non-financial performance. The coefficient of determination ( $R^2$ ) indicated that the affective commitment of women employees explains 24.9 percent variation in the non-financial performance of DMBs, whereas F-statistics suggest that the model is sound for decision and policy-making.

**Hypothesis Two** (Female continuance commitment significantly affects deposit money banks' performance)

**Table 5. Summary of hypothesis 2 result (Dependent Variable – Performance)**

Variable(s)	Coefficient	T-statistics	P-Value
C	5.956423	4.99	0.0000

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Female Continuance	0.589432	7.03	0.0000
Commitment			
F-Statistics = 77.64 (0.0000)		R-Square = 0.3092	

*Author's computation from STATA 14*

**Source: Fieldwork (2020)**

From the outcome (Table 5), it is obvious that the female continuance commitment has a favorable and significant impact on the performance of deposit money banks (coefficient = 0.589432,  $t = 7.03$ ,  $p\text{-value} < 0.05$ ). An improvement in the continuance commitment of female employees will therefore boost the performance of deposit money banks. The coefficient of determination ( $R^2$ ) implies that a change in deposit money banks performance of 30.9% is accounted for by female's continuance commitment, while the F-statistics suggest that the model is fit for decision-making and policy making.

**Hypothesis Three** (Female normative commitment significantly affects deposit money banks' performance)

**Table 6. Summary of Hypothesis 3 result (Dependent Variable – Performance)**

Variable(s)	Coefficient	T-statistics	P-Value
C	4.014527	3.87	0.0000

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Female Normative Commitment	0.253476	3.65	0.0000
F-Statistics = 62.03 (0.0000)		R-Square =0.1995	

*Author's computation from STATA 14*

**Source: Fieldwork (2020)**

The results (Table 6) show that women's normative commitments have a positive and significant influence on the performance of deposit money banks (coefficient= 0.253476, t= 3.65, p-value < 0.05). Improving the normative commitment of female employees will therefore enhance the performance of deposit money institutions. The coefficient of determination ( $R^2$ ) revealed that a 19.9 per cent change in the performance of deposit-money institutions is accounted for by female normative commitment while the F-statistics indicate that the model is fit for decision-making and policies.

**Hypothesis Four** (Female employees' commitment elements have a significant combined effect on deposit money banks' performance)

**Table 7. Summary of hypothesis 4 result (Dependent Variable – Performance)**

Variable(s)	Coefficient	T-statistics	P-Value
C	6.07845	8.32	0.000

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Female Affective Commitment	0.20145	3.05	0.000
Female Continuance Commitment	0.413577	6.47	0.000
Female Normative Commitment	0.196578	2.71	0.035
F-Statistics = 81.37 (0.0000)		R-Square = 0.399, Adj-R-Square= 0.378	

*Author's computation from STATA 14*

**Source: Fieldwork (2020)**

In the result summary of Table 7, the fitness and overall significance of the regression model is shown in the F-statistics (81.37, P-value<0.05). It implies that female affective commitment, female continuance commitment and female normative commitment have a positive and significant combined effect on the performance of deposit money banks.

The adjusted coefficient of determination (adjusted R<sup>2</sup>) suggests that the performance of deposit money institutions varies by 37.8 percent by the commitments of female employees. The model did not explain 62.2 per cent of the variation in the performance of deposit money banks, meaning that the model did not capture other elements affecting the non-financial performance of banks.



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The t-values have demonstrated the positive and significant individual effect of female employees' commitment element on the performance of deposit money banks.

Furthermore, the findings also revealed that for every 1 unit change in female affective commitment, deposit money banks' performance will change by 0.20145. Additionally, for every 1 unit change in female continuance commitment, deposit money banks' performance will change by 0.413577. Finally, for every 1 unit change in female normative commitment, deposit money banks' performance will change by 0.196578.

### 3.4. Discussion of Findings

The study examines the effect of female employees' commitment on the non-financial performance (with special reference to competitiveness) of deposit money banks in Nigeria. Four hypotheses were tested and the following findings were derived:

- i. The relationship between female affective commitment and deposit money banks' performance was established. Therefore, an improvement in the affective commitment of the female employees will enhance the competitiveness of the deposit money banks. The degree to which female members of staff identify themselves and enjoy their membership of the deposit money bank should be enhanced. The female employee's needs and expectations from the organization should be looked into. This is because it tends to enhance the affective commitment of the female employees.
- ii. The link between female continuance commitment and deposit money banks' performance was established. Therefore, an improvement in the continuance commitment of the





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female employees will enhance the competitiveness of the deposit money banks. Deposit money banks should increase the size of their investments, as this will enhance the bank's attractiveness to the female employees, and the female employee's continuance commitment will increase. Job satisfaction is also an important determinant of female employees' continuance commitment. When a female employee is satisfied with her work, it implies that the employee's cost of leaving the firm will be higher. Thereby, enhancing employees' continuance commitment and such an employee will continue to work with the firm.

iii. The association between female normative commitment and deposit money banks' performance was established. Therefore, an improvement in the normative commitment of the female employees will enhance the competitiveness of the deposit money banks. Deposit money banks should provide good incentives for the female employees, as this tends to positively affect their predisposition to stay with the bank. Female employees that are normatively committed sees exiting their organization as a potential disaster and they equally feel a sense of guilt about the tendency of exiting.

iv. The effect of female employees' commitment elements on deposit money banks' performance was established. Therefore, an improvement in the level of commitment of the female employees' will improve the competitiveness of deposit money banks. This aligns with the study by Andrew (2017), who studied the effect of employee



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commitment on firms' performance and found a positive relationship between employee commitment elements and firms' performance. It is also consistent with the result of Irefin and mechanic (2014) who established the existence of a positive relationship between employees' commitment and firms' performance.

So, the top executives of banks should pay more attention on hiring female workers that tends to become linked to the bank, as this is most likely to have a significant impact on the bank as well as propelling the bank's competitiveness. This is because the enhancement of female employees' commitment level begins with the ability of the top management of the bank to hire female employees whose orientation aligns with that of the bank.

## 5. Conclusion

The empirical findings of this study demonstrate that the affective commitment, continuance commitment and normative commitment of female employees have a significant effect on the competitiveness of deposit banks. Thus, it may be stated that the commitment aspects of female employees have an individual and combined positive and significant effect on the competitiveness of deposit money institutions.



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The following recommendations are made in line with the results of this study:

1. Nigerian deposit money banks should attempt to improve their employees' commitment by offering incentives and recognition to improve their competitiveness.
2. The Nigerian Central Bank (CBN) should develop policies to improve the commitment of females in the banking sector.
3. The board of directors of the deposit money banks should encourage the establishment of corporate policies that increase the moral standards of staff and improve the commitment of female employees.

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## Appendix 1

### Items for Employees Commitment as well as Firm's Competitiveness

Indicators	Items	References
<b>Affective Commitment</b>	i. I would be very happy to spend the rest of my career with this organization.	Meyer, Allen and Smith (1993) Meyer, Allen and
	ii. I really feel as if this organization's problems are my own.	Smith (1993) Allen and Meyer (1990)
	iii. I do not feel 'emotionally attached' to this organization.	Allen and Meyer (1990)
	iv. This organization has a great deal of personal meaning for me.	Allen and Meyer (1990)
	v. I think that I could easily become as attached to another organization as I am to this one.	

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## Continuance

## Commitment

- |       |  |                               |
|-------|--|-------------------------------|
| vi.   | Right now, staying with my organization is a matter of necessity as much as desire.        | Meyer, Allen and Smith (1993) |
| vii.  | It would be very hard for me to leave my organization right now, even if I wanted to.      | Meyer, Allen and Smith (1993) |
| viii. | I am not afraid of what might happen if I quit my job without having another one lined up. | Allen and Meyer (1990)        |
| ix.   | Too much in my life would be disrupted if I decided I wanted to leave my organization now. | Allen and Meyer (1990)        |
| x.    | I feel that I have too few options to consider leaving this organization.                  |                               |

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## Normative Commitment

- |       |   |                               |
|-------|---|-------------------------------|
| xi.   | Even if it were to my advantage, I do not feel it would be right to leave my organization now.        | Meyer, Allen and Smith (1993) |
| xii.  | I would feel guilty if I left my organization now.  | Meyer, Allen and Smith (1993) |
| xiii. | I would not leave my organization right now because I have a sense of obligation to the people in it. | Meyer, Allen and Smith (1993) |
| xiv.  | This organization deserves my loyalty.  | Meyer, Allen and Smith (1993) |
| xv.   | I do not feel any obligation to remain with my current employer.                                      | Meyer, Allen and Smith (1993) |

## Competitiveness

- |        |                                       |
|--------|---------------------------------------|
| xvi.   | Product standardization               |
| xvii.  | Expansion into new market             |
| xviii. | Research and development capabilities |
| xix.   | Cost leadership                       |
| xx.    | Product differentiation               |
| xxi.   | Strategic alliance                    |



## Assessing the scope of Pro- Poor Tourism in India: A community-based approach for Poverty Alleviation

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### Abstract

In developing nations, Pro-poor tourism that is intended to result in increased net benefits for poor-people. International programmes and national policies around the globe have considered tourism as appropriate tool for poverty alleviation and community development. In India there are so many debates going on poverty alleviation and community involvements in economic benefits, it is important to realise that pro-poor tourism discourse may be used to perform or facilitate this task. This paper presents an integrative research framework, multiple perspectives and can be used as an overarching guideline to stimulate and other future research works on Pro-poor tourism and community-based development.

**Keywords:** *Pro-poor Tourism, Poverty Alleviation, Local community participation, Tourism development*

### Introduction

Pro-poor tourism, simply put it direct benefit back in to the community by employing local people, leasing local land, using local food and many other resources or operating local businesses. Anyone can engage in tourism that helps the poor, even multinationals they just have to make sure that much of the profits stay home to benefit local people. So, when you travel, make sure you ask right questions:

How many local people are employed?

What kind of jobs generate?

How much money share get local community?

How are local people involved in tourism development?

It's important to be aware of the implications of your travel and make right choices to contribute to someone else poverty. In mostly tourism destination of India tourism money 'leaks' because in that places number of multinational hotel and restaurant chains, tour operators are running their firms so bulk of the money more than half doesn't make its way into local economies. Pro-Poor Tourism is about changing the distribution of benefits from tourism in favour of poor people. It is not a specific product and therefore is not the same as ecotourism or community-based tourism. Any kind of tourism can be made pro-poor. PPT can be applied at different levels, at the enterprise, destination or country level (Eco club).



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## Facts on poverty in India

Poverty in India has its roots in history, in the ancient times in India people categorised based on the work they do and hence ultimately based on how much they earn. As the time passed the valley between the rich and poor also increased. In terms of absolute numbers, India accounts for both the highest and a staggering number of multi-dimensionally poor people. Sadly, more than 528 million (52.8 crore) Indians are poor, which is more people than all the poor people living in Sub-Saharan Africa combined (Indian express, June 2017).

- **Who comes in the category of the poorest class India?** - Tribal people, Dalits, and labour class including farm workers in villages and casual workers in cities are still very and make the poorest class in India.
- **Where do the majority of poor live in India?** – 60% of the poor still reside in the states of Bihar, Jharkhand, Odisha, Madhya Pradesh, Chhattisgarh, Uttar Pradesh and Uttarakhand. The reason of these state to be in the category of the poorest state is because 85% of tribal people live there. Also, most of these regions are either flood-prone or suffer from calamities. These conditions hamper agriculture to big extent, on which the household income of these people depend (Maps of India).

## Review of literature

Literature review for this research paper include both summary and explanation of the related information and current state of knowledge as found in academic books and journal articles. This section provides a review of the relevant literature in relation to the Pro-poor Tourism, community-based tourism.

## Conceptual study of Pro-poor Tourism

- *'Pro-poor Tourism: Who benefits?'* by C. Michael Hall (2007) edited many good research papers based on Pro-poor tourism, in this collection they intended to result in increased net benefits of poor people. This timely book has made a huge contribution to the heated debate around the globe about tourism's role in economic development and international trade negotiations.
- *'Pro-Poor Tourism: Putting poverty at the heart of the tourism agenda'* by Caroline Ashley, Charlotte Boyd and Harold Goodwin (2000) examined how we make poverty alleviation a priority for tourism agenda, how tourism effects the livelihood of poor community and how positive impacts can be enhanced. This paper describes the factors and approaches which can be more reliable for tourism policies and its implementation.
- *'Tourism and Poverty Reduction'* by Jonathan Mitchell and Caroline Ashley (2001) assessed the effects of tourism activities and policies for poverty reduction and examines the economic effects of tourism on the rest of economy, in what ways does





tourism affect poor people. This book also describes about the issues of Current debates, policy questions and the lack of data.

- *'Economic Empowerment of communities through Tourism: A pro-poor Tourism value chain approach'* by Rayviscic Mutinda and Lorenzo Cantoni (2015) uses analytical literature review for identifying the appropriate strategies promoting host community participation and the benefits of tourism development by giving particular emphasis on less and developing countries. The paper also focused on approaches for pro-poor tourism agenda, limitations and recommendations for further research.
- *'Pro-Poor Tourism: Harnessing the World's Largest Industry for the World's Poor'* in this research paper Dilys Roe and Penny Urquhart (2001) focused on the potential for tourism to deliver pro-poor growth in the least developed countries offers significant benefits to the world's poorest people and examine the contributions to the economies of developing countries, particularly to foreign exchange earnings, employment, and GDP by tourism industry. It further describes the role of private sector, community organisations in destination countries, international NGOs and governments should all be involved in efforts in the promotion of Pro-poor tourism.
- Caroline Ashley, Harold Goodwin and Dilys Roe (2001) in their research paper *'Pro-Poor Tourism Strategies: Expanding Opportunities for the Poor the impact of pro-poor tourism strategies and initiative on community'*, described case studies of Namibia and Uganda and some key factors are very useful which can constrain or facilitate progress in implementing pro-poor tourism.
- *'Pro-Poor Tourism as a means of poverty reduction- Benchmarking and Performance Measurement of pro-poor activities in developing countries'* contributed by Sarah Hussmann (2010) describe pro-poor tourism as a means of poverty reduction with different dimension like as Economic dimension, Ecological dimension, Socio-cultural dimension, Political dimension and also examine the goals and some strategies to achieve it.
- *'Growth, Poverty and Employment in Uttarakhand'* by Rajendra P. Mamgain (2007) evaluate the situation of different sectors of Uttarakhand state Agriculture, manufacturing and service sector and examined the ground reality of employment generation in state, it also focusses on rural infrastructure and hilly area development and industry-wise growth of workers.

### Community-Based Tourism

Community is a concept used to describe a social organization that is considered fundamental to a group of people. Such communities are often regarded as natural grouping based on ties of shared blood, language, history, territory and above all, culture (Upadhy, 2006).



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- *Barriers to local community participation in tourism development: evidence from in mountainous state Uttarakhand, India* by Devkant Kala and S.C. Bagri (2018) described that barriers community participation affect not only residents' engagement but discourage them to involve in tourism-related decision-making even in the future. Local communities must be considered as the integral element of the tourism product.
- Galster (2001) looks at interdependence in a slightly different way. He uses the term 'externality space' to explain this concept of community. "A person's externality space was defined as the area over which changes in one or more spatially based attributes initiated by others are perceived as altering the well-being the individual derives from the particular location." Thus, community would encompass all those aspects that influence the desirability of the geographic location.

## Research questions and objectives of study

Despite the potential of tourism as a development tool and the worldwide, mushrooming interest in tourism-based poverty alleviation initiatives, the relationship between tourism and poverty alleviation largely remains among tourism academics (Hall, 2007). In India pro-poor tourism promotion hasn't been evolved especially in tourism destinations. The participation of local community specially below poverty line people in tourism activities is very low and share of economic benefits very less. In context of India due to the multidimensional nature of poverty, understanding any poverty-related issue is always a challenge as a wide range of interwoven factors, such as economic, socio-political and cultural forces, need to be taken in to account. Straightforward the basic questions are:

How to encourage local community to participate in tourism?

What are major barriers to promote pro-poor tourism?

Although answers to these basic questions can be directly borrowed from generic poverty studies, there is still a situational need for tourism researchers to adapt the answers to the context of tourism. This is the primary objective of this study to evaluate these basic problems.

## Research Methodology

This research proposal based on an issue facing by all developing nations worldwide, my focus area is poverty alleviation by tourism. The objective of every social science research is to provide relevant, accurate, reliable, valid, logical and latest information to deal with research problems with the help of systematic data collection and analysis. In this proposal used descriptive method of research with the help of different available research works related with the same problems and objectives.

## Sources of data



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Mostly Secondary data used for this study, secondary data such as information about poverty alleviation, revenue will be collected from census data, stakeholder's records, district handbooks, journals, books, periodicals, websites, newspaper articles, NGO publications, etc.

## Findings and Suggestions

### Why tourism should be Pro-poor?

Reducing poverty requires 'pro-poor growth'. Tourism one of the world's largest industry is already growing or significant in developing countries. Certain characteristics of tourism enhance its pro-poor potential. It can be labour intensive inclusive of woman and informal sector, based on natural and cultural assets of the poor and suitable for poor areas (Ashley & Goodwin, 2001). Benefits to the poor from tourism depend on whether and how they can participate economically in the industry. Economy leakages is the big problem to set an agenda for pro-poor tourism, for example in 2017, Rajasthan attracts 1.5 million foreign tourists and 33 million domestic tourists and tourism has a significant multiplier effect on state economy, approximately 15 percent of Rajasthan's economy in tourism accounts (Tourism department annual progress report 2016-17) Rajasthan continues to face challenge of poverty. According to world bank, 16% population of state live in below poverty line. These facts show money share of local community is less in mostly tourist destinations in India.

Pro-poor tourism enhances the linkages between tourism businesses and poor people, so that poverty is reduced and poor people are able to participate more effectively in tourism development. The aims of pro-poor ranges from increasing local employment to involving local people in the decision-making process and community should be aware of the commercial and social value placed on their heritage and resources. It does not aim to expand the size of the sector, but to 'unlock opportunities for the poor within tourism, at all levels and scales of operation' (PPT Partnership, 2005). This is interesting, as it does not focus on growth of tourism, and rather than just focusing at the community level where, for example villagers might be encouraged to establish a cultural tourism homestay or craft ventures, the pro-poor tourism asserts that a wide range of stakeholders, from local entrepreneurs to government officials and international tour companies, will need to make concerted efforts if poverty reduction is to occur (Scheyvens, 2007). The 'core activities' of Pro poor tourism according to the PPT partnership are then:

- To increase access to the poor to economic benefits (e.g. Training, employment, supply linkages, information to tourists on community tourism ventures and the importance of buying local).
- To address the negative environment and social impacts of tourism (e.g. loss of access to natural resources associated with creation of protected areas, social disruption).
- To reform policies and processes (e.g. to encourage partnerships with the private sector and to promote active participation of the poor in decision making) (IIED, 2001)



It seems to have a broad, holistic notion of poverty-alleviation which is inspired at least in part by alternative development theory. They draw attention to the value of non-economic benefits of pro-poor tourism such as development of new skills, better access to education and health care, and infrastructural improvement in terms of access to portable water and improved roads or transport. It also explains how tangible benefits of tourism can make a significant difference to the lives of the poor, including greater opportunities for communication with the outside world and access to information, better knowledge of market opportunities (Ashley & Roe, 2002)

### A case study of Uttarakhand State

Uttarakhand has a total geographic area of 53,483 km square, of which 93% is covered by mountains and 64% is covered by forest. The population of Uttarakhand is 10.32 million and density of the state is 189 persons per square kilometre (Census 2011). Uttarakhand has a huge potential for development, rich natural resources, flourishing forest goods-based industries and increasing revenue from Tourism but indicative research on spatial data analysis shows a high concentration of poverty near areas of tourist interest, for example Haridwar being one of the important pilgrimage destinations has been generating revenue for years through tourism, despite high earning potential, poverty is very high in this part of the state. The impressive economic growth in Uttarakhand has been unevenly distributed across its districts. Income inequalities across the hill and plain districts are revealing, per capita income (measured in terms of per capita net district domestic product) in Uttarkashi district is about 2.5 times less than that in Dehradun and Udham Singh Nagar district. All the hill districts except Nainital have per capita district domestic product much less than the state average. Rudrapur district, well known for its tourism also has low income.

Similar results were obtained in a survey of rural households conducted by Rural Development Department to identify BPL families. This survey estimated the proportion of BPL (Below Poverty Line) families in rural areas of Uttarakhand at 36.5%. According to UKHFWS (Uttarakhand Health & Family Welfare Society) the number of BPL families is increasing in rural areas.

S. No	District	No. of Blocks	Total No. of BPL Families
1	Udham Singh Nagar	7	70934
2	Almora	11	60659
3	Pithoragarh	8	44129
4	Bageshwar	3	26238
5	Nainital	8	43797
6	Champawat	4	20198
7	Tehri Garhwal	9	62308



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8	Haridwar	6	91927
9	Rudraprayag	2	25295
10	Uttarkashi	6	28485
11	Dehradun	6	56129
12	Pauri	15	60909
13	Chamoli	9	32384
<b>Total</b>			<b>623392</b>

(Source: Uttarakhand Health & Family Welfare Society)

The World Tourism Organisation has identified seven different ways of addressing poverty through Tourism which it suggests can be applied in almost every tourist destination of India:

- ❖ Employment of the poor in tourism enterprises.
- ❖ Supply of goods and services to tourism enterprises by the poor or by enterprises employing the poor.
- ❖ Direct sales of goods and services to visitors by the poor (informal economy)
- ❖ Establishment and running of tourism enterprises by the poor -for example micro, small and medium sized enterprises(MSMEs), or community-based enterprises (Formal economy).
- ❖ Tax or levy on tourism income or profits with proceeds benefiting the poor.
- ❖ Voluntary giving/support by tourism enterprises and tourists.
- ❖ Investment in infrastructure stimulated by tourism also benefiting the poor in the locality, directly or through support to other sectors. (Yunis, 2005)

In India, need to focus on these core areas, reforming policy process and implementation of planning according to priority of this sector.

## Local Participation

In terms of the different roles the poor play in development of Pro-poor tourism, their participation mainly takes two forms one form of participation to be engaged in public councils and related decision making as community members, and the other is to pursue tourism-related economic activities as the input of local human resources, either wage/paid work or self-employment. In the theoretical sense, both forms of local participation represent the indispensable processes for successful pro-poor tourism development (Zhao and Ritchie, 2007). Public participation not only to protect and promote this holistic well-being of the community to which the poor belong, but also contributes to democracy, equity and equality by making the voice of poor heard and in full consideration (Keogh,1990; Simmons,1994); basically, participation of by employment is mainly controlled by individual endeavours to reap economic benefits tourism brings and thus has more direct impacts on the life of poor households. It is not uncommon that in many destinations of developing countries, that is many destinations of developing countries like India, mostly well-remunerated management





positions are occupied by foreign professionals; in addition, local small enterprises and vendors could be easily squashed out of the market by multinationals and other better-standing competitors (Brohman, 1996; Brown, 1998). However, a challenge to the implementation the right policy in a wide range of stakeholders groups whose interest in local community participation may even conflict each other.

### Conclusion

Globally, there is lack of convincing empirical evidence to support the claim that tourism benefits the poor. Despite this, tourism continues to be prioritised as a key development option for struggling economies like India. Eliminating poverty should not be regarded as 'charity'- the domain of big hearted cinema stars, businessmen or 'enlightened' bureaucrats. Appealing to altruistic motives may be important in galvanising popular and political support for poverty alleviation initiatives. But finally, it is important to realise that in Pro-poor tourism discourse, tourism is but a tool for poverty alleviation and there is huge scope to promote pro-poor tourism concept in India. But this tool cannot compensate for ill-conceived plans, lack of co-operation and without social awareness. Over all there needs to be more debate about the value of pro-poor tourism as an approach to poverty alleviation and need to focus on practical solutions to the question of empowerment of the poor both at a national and local level in India.

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## **Information Technology and its Effect on Mathematics Student's Academic Motivation**

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### **Abstract**

As classroom guidance and state administered testing depend all the more vigorously on innovation, educators should survey the adequacy of their innovative apparatuses. This study assessed the impacts of an on the information technology, standard-adjusted practice program on understudy inspiration and scholarly accomplishment in mathematics students comprehensive of mathematics knowledge. The outcomes demonstrate the way that technology could be a figure understudy scholarly accomplishment and inspiration to be at school. These discoveries are significant because of the mechanical shift that schools are presently confronting. With additional innovation openness for understudies and more expert advancement for educators to sharpen their recently obtained showing strategies, technology might be the impetus required for school locale to assist their understudies with accomplishing at more significant levels. As society depends more on innovation, understudies should have the option to involve innovation for critical thinking, learning in advanced education, prevailing in their future professions, and carrying on with their regular routines. As innovation has created and training has embraced mechanical instruments, custom curriculum has likewise adjusted to integrate new systems. The web additionally permits understudies to autonomously participate in important, coordinated, and streamlined research. Late patterns in science guidance depend on five principal parts: issue-based learning, understudy drove arrangements, risk-taking, having a good time, and cooperation. Viable math guidance utilizes a mix of every one of these features. It was asserted that "science is the language of the innovative world". Inside arithmetic guidance, execution of innovation has taken many structures. A few

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projects are comprehensive, giving intelligent exercises, examples, recordings, and evaluations. Designated programs give separation to battling understudies and permit understudies to work at their own speed. Innovation based arithmetic apparatuses are making math guidance progressively captivating. The benefactors are mathematics students, mathematics teachers and the education administrators.

**Keywords:** Information technology, Effects, Mathematics & Academics Motivation

## Introduction

Since No Child Left Behind's commencement, high stakes testing and responsibility has overwhelmed school areas the country over. School authorities and chairmen have attempted all possible kinds of solutions for advance understudy commitment and progress in the homerooms, this incorporates carrying out innovation into educational programs. As indicated by the United States Department of Education (2002), the No Child Left Behind Act additionally looked to dispose of the advanced separation and to have understudy mechanically proficient toward the finish of the eighth grade, paying little mind to race, financial status, geographic area, and inability. Besides, the State of Illinois embraced the Common Core State Standards in 2010, with them being completely executed in the 2013-2014 school year. These principles have taken the beliefs from No Child Left Behind (NCLB) above and beyond with kids as youthful as kindergarten matured being PC proficient. For instance, rather than composing broadened reaction questions, understudies are supposed to type and make such reactions. Current appraisal drives require school region to utilize web-based testing. The new Partnership for Assessment of Readiness for College and Careers (PARCC), which replaces the ISAT Test in the territory of Illinois, will be taken web-based which is an immense contrast between old state evaluations and new state appraisals. These progressions are requiring school regions to give PCs and innovation to their understudies and staff.

The school locale taking part in this review embraced a drive for technology to be a piece of study halls over the most recent couple of years. This previous school year, the school locale had the option to have select homerooms pilot technology. Educators at the secondary school, middle school, and rudimentary levels were picked by locale heads to have workstations as an asset and device for guidance and learning in the classroom. The school area was working intimately with neighborhood business for this drive to be region wide soon. Instructors who are utilizing technology are at a benefit over educators who don't have this openness. Technology permits instructors to better and all the more rapidly separate, to oversee advancement, and to likewise plunge further into subjects of study, as the common core state standards advances these necessities for understudies.



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Technology could likewise persuade understudies and permit them to be locked in on something else altogether than they have ever previously. This study analyzed whether technology in all actuality does as a matter of fact increment understudy scholarly accomplishment and increment inspiration in understudies to learn. This review ought to be valuable to lawmakers, school overseers, and teachers as the greater part of our schools are going to innovation to help and help with learning in the classroom. Technology is such a resource for any everyday schedule. The utilization of innovation permits educators to really separate and designer guidance to address the issues of their understudies. This review set off on a mission to demonstrate the way that innovation can decidedly influence understudy scholastic accomplishment and inspiration in the classroom.

## Literature Review

Technology is a recent marvel in our everyday life that has taken off. Technology allows the most difficult tasks to become seamlessly easy and more efficient. In education, technology has allowed the dissemination of knowledge to be dispersed instantly and it allows for quicker and more effective communication. Also, technology has allowed students to be engaged and learn in ways that they never have in a classroom setting before. According to Spears (2012) she cites Donovan, Hartley & Strudler (2007) and describes the first technology program that was used in a school setting. Spears (2012) states, "The first provider of computer access for teachers and students was Apple Classrooms of Tomorrow (ACOT). The goal of ACOT was to promote change in the context of education". Spears continues in her study and describes Microsoft's initiative through the Anytime Anywhere Learning (AAL) program. Spears (p. 1) cites the work of Donovan et al. (2007), "An increase in enthusiasm for teaching and learning with technology, an improvement in student writing skills, an increase of authentic and purposeful use of technology are some of the benefits of technology integration program like the AAL program." These programs in the 1980's and 1990's paved the way for presidents, legislators, administrators, and educators to become aware of how positively technology could impact the student and teacher in the classroom, alike.

## The Role of Educational Reform in Technology Development

The job of innovation in the realm of schooling has been truly evolving. Most as of late, innovation has been another peculiarity to help rouse, separate, and permit understudies to accomplish and succeed in manners that they have never had the option to. As per Johnson (2003), the PC and innovation, whenever utilized accurately, can "conjure dream in the personalities of visionary instructors who saw unending potential for adjusting conventional thoughts of educating and





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learning" (p. 2). Two past presidents saw the requirement for basic change in training to keep American understudies in rivalry with innovation with different understudies from around the world. In 1994, President Bill Clinton marked The Goals 2000: Educate America Act (Goals 2000: Educate America Act, 1994). There were many pieces of this bill that elaborate innovation and training. Part C of The Goals 2000: Educate America Act, Leadership in Technology, (a) calls upon the Department of Education to think up a public procedure to include innovation into every single instructive program and the state and nearby educational systems, (b) encourage comprehension of how innovation can be utilized to further develop instructing and learning, (c) demonstrate the way that innovation can be utilized to set out an equivalent freedom for all understudies to find success while meeting state schooling necessities, and (g) make excellent expert training open doors for teachers with the capacity to coordinate innovation into their guidance (Goals 2000: Educate America Act, 1994).

## **Educational Technology Challenges**

Albeit these previous presidents had the option to have regulation passed, still many hardships with innovation are being presented and submerged in schools (Brinkerhoff, 2006). Regulation being passed isn't sufficient. There are such countless understudies without availability, the computerized partition actually exists in schools right up 'til now. The monetary limitations that the school regions and states are under make submerging innovation significantly more troublesome. The expense, framework, and innovation improvement in schools the nation over isn't something similar. Most innovation utilized in schools are PC labs that classes can plan times for understudies use, or a few schools have three to four work stations for homeroom and educator use in the study halls. There are some school locales, nonetheless, that can give technology encounters to understudies, yet not all understudies have this availability. In some school areas, it will require many years for technology to be available in all homerooms.

## **The Benefits and Requirements of Educational Technology Initiative**

The educator in the homeroom should comprehend how and why understudies are propelled to learn. In her review, Spears (2012) refers to crafted by Keller. Lances (2012, p. 8) refers to crafted by Keller (1987) and makes sense of, "Consideration, significance, certainty, and fulfillment (ARCS) are the four qualities one requirements to lay out for individuals to be persuaded to realize." When hoping to execute technology into a homeroom, teachers should take a gander at their understudy populace to comprehend who they are working with, how their understudies would learn best, and how to construct their certainty with innovation so they would, consequently, be happy with their growth opportunity, and in this manner become spurred to learn. Teachers couldn't just involve innovation as a substitution. Sansone et al. (2011) addresses inspiration and note that understudies who as of now have a more prominent interest in PCs might show more



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prominent information and interest on the grounds that the errands, they might do on a PC are now pertinent to their inclinations and they could make associations all alone. This finding from Sansone et al. (2011) shows the significance of utilizing the four attributes from Keller (1987). Consideration, importance, certainty, and fulfillment all become an integral factor with teachers and understudies for innovation to be presented and utilized actually in the class room. In one more investigation of innovation execution in Texas, Shapley et al. (2011, p. 299) noted, "innovation inundation decidedly affected understudies' innovation capability and recurrence of their innovation-based class exercises and little gathering collaborations." With increasingly more accentuation being put on understudy learning and accomplishment, schools are seeing making changes and submerging understudies and educators with innovation. With that, however, comes the capacity and obligation to prepare and maintain elevated expectations of learning with the two instructors and understudies.

## Research Questions

- 1) Does Information Technology effect student motivation?
- 2) Does Technology effect student academic achievement?

## Research Methodology

This quantitative research study looked at the mean scores of topic tests in the envision Math series, Discovery Education Assessments, and attendance records to determine Technology was responsible for student academic motivation. The participants in this study are secondary school students. As our world becomes more enriched with technology, school officials and administrators are looking for the positive impacts that technology could offer teachers and students, alike, in the classroom through meaningful and engaging teaching methods and instruction.

## Participants

The participants in this quantitative study were secondary students from two different classrooms. The study focused particularly on the effect of information technology towards secondary school students' academic assessment, which is given four times a year, and also end of topic tests in mathematics to see if there are any significant differences in student scoring. To gauge the motivational aspect of this research, monthly attendance records for each class were used. The school participating in this study splits the school day in half into Periods 1 and 2. The number of absences was determined by adding the number of absences from Periods 1 and 2 for each classroom.

## Instrumentation



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In this study, focused on the effects on information technology towards mathematics students results, and attendance were used to determine whether technology positively impacts student academic motivation. The topic tests are used as summative assessments to gauge the mastery of Math skills. The Discovery Education Assessment is an assessment that is administered via computer four times per school year. According to the Discovery Education Assessment Research, this assessment is used as a predictive benchmark assessment that provides data using state's curriculum standards and subskills for each item on the test. The Discovery Education Assessment could be used to improve instruction, help strengthen students' academic skills, and increase proficiency, as measured under No Child Left Behind and Race to the Top. These four assessments are administered throughout the school year with 9-12 weeks between each assessment. The predictive benchmark assessments are intended to predict performance on the next high-stakes test the student will take during the school year.

## Results

The purpose of this study was to determine whether technology effects student academic motivation. Technology refers to the technological movement of every child in the classroom, school, school district, etc., having a laptop in the classroom to manipulate and learn with as a tool. In the implementation classroom, 25 students participated in the study, whereas in the traditional classroom, only 22 students participated. The discrepancies between the numbers of students participating could skew or misrepresent the data that is gathered and analyzed for this study. The data gathered was then put into tables and figures to determine if implementation does truly affect student academic achievement and motivation. The motivational aspect for this study was measured using the student attendance records. The school that participated in this study splits the whole school day into Periods 1 and 2.

In Table 1, there were some noticeable discrepancies in the topic test scores between the implementation classroom and the traditional classroom. In topic tests 1 and 3, these mean scores were well above the traditional classroom, whereas in topic tests 5 and 6, the traditional Classroom scored well above the implementation classroom.

### Research Question 1: Does Information Technology effect student motivation?

**Table 1. Comparison of topic tests Scores between implementation classroom and the traditional classroom**

Name of the Test	Implementation Class room	Traditional Class room
Topic test - 1	63%	60%
Topic test – 2	47%	58%
Topic test – 3	83%	82%

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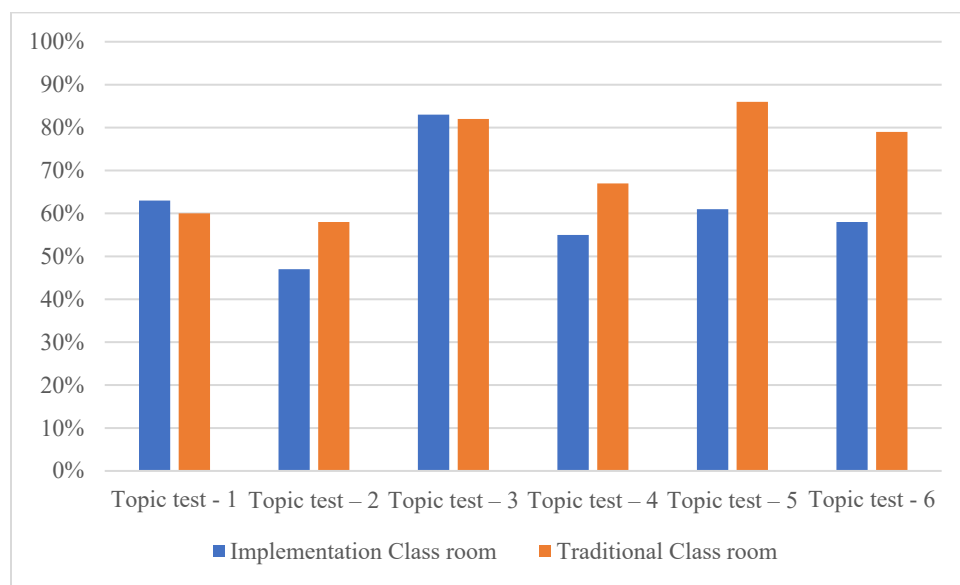
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Topic test – 4	55%	67%
Topic test – 5	61%	86%
Topic test - 6	58%	79%



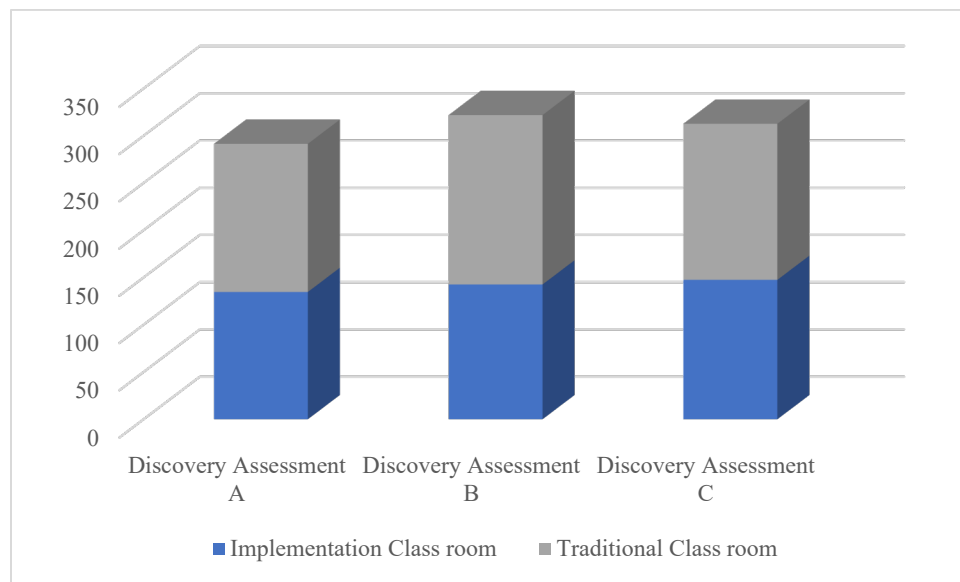
**Figure 1. Comparison of Topic Tests Scores between implementation classroom and the traditional classroom**

## Research Question 2: Does Technology effect student academic achievement?

In Table 2, students from the implementation classroom scored higher on discovery assessment A than the traditional classroom, but in discovery assessment C, the students from the traditional classroom scored higher than the implementation classroom.

Table 2- Comparison of Discovery Assessment scores between the implementation classroom and the traditional classroom.

Name of the Test	Implementation Classroom	Traditional Classroom
Discovery Assessment A	164.65	156.78
Discovery Assessment B	142.56	179.32
Discovery Assessment C	147.47	165.20



**Figure 2.** Comparison of Discovery Assessment scores between the implementation classroom and the traditional classroom

### Discussion and Recommendation:

As verified in the Results part of this review, implementation alludes to the mechanical development of each and every kid in the study hall, school, school locale, and so on, having a PC, or gadget, in the homeroom to control and learn with as an instrument. The implementation Classroom was in its most memorable year of execution for the teacher and furthermore for the understudies taking part in this review.

With respect to the outcomes test was the primary test controlled by the two-class room toward the start of the school year. The implementation Classroom scored fundamentally higher, 82.58% versus 65.87%, on this topic test than the traditional classroom. These scores could be an outcome



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from the freshness of the workstations, the fervor of the understudies taking an interest, and the capacity to all the more likely separate utilizing a PC. In his article, Edwards (2012) makes reference to that fervor and energy factor that understudies evoked in his school locale from understudies who had technology. Understudies in that school locale were even disposed to miss break to deal with their tasks and material in the school room. In that equivalent angle, topic 1 Test was the third test given of the school year and once more, the implementation classroom scored higher, 78.26% versus 68.16%, than the Traditional Classroom.

The Discovery Education Assessments A and B likewise yielded comparative outcomes. The implementation classroom scored higher on tests A and B than did the Traditional Classroom. On Test A, the implementation Classroom estimated a scale score of 1436.63, while the traditional Classroom estimated a scale score of 1418.71. On Test B, the implementation classroom estimated a scale score of 1442.52 and the traditional classroom estimated a scale score of 1437.86. It permits teachers to separate their guidance by dissecting the understudies' information on these evaluations and making tests to focus on understudies' assets and shortcomings in the substance area of Math. The implementation classroom utilized these tests and they were relegated through the understudy dashboard on discovery education.

The participation records were not what were generally anticipated for this review. The speculation for this study was to decide whether technology would influence understudy scholarly accomplishment and inspiration. The information from this review showed that the innovation was not a specific consider understudies being in participation at school. In her review, Spears (2012, p. 8) refers to crafted by Keller (1987), expressing consideration, significance, certainty, and fulfillment are exceptionally significant parts for understudies when innovation is being presented successfully in the class room. For understudies to genuinely want to be at school and learn, educators should remember best practices for instructing, yet additionally remember what is best for understudies and what is going to "snare" them to take figuring out how to a higher level.

## Conclusion

In overall, teachers should employ research techniques in their classrooms on a regular basis. Understanding the effects of certain approaches or tackles could only serve to increase the overall effectiveness of instruction. Observing the impact of instructional practices on student achievement motivation provide teachers with valuable information. Teachers could then adjust their methods to better reach their students and promote a healthy learning environment.

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## COVID 19: Digital Technologies Vs Socio Technological in the Fight Against

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### Abstract

COVID-19 is a worldwide epidemic that has already claimed the lives of thousands of people, i.e., caused hundreds of thousands of infections and deaths, with several thousand more expected. COVID-19 has caused a global pandemic, a coronavirus disease detected in 2019. It has a genetic resemblance to the SARS coronavirus, which was responsible for the SARS outbreak in 2002; COVID-19 is caused by a virus known as SARS CoV-2, or severe acute respiratory syndrome coronavirus 2. In COVID-19, coronaviruses that were originally circulating among bats, a natural animal reservoir, changed and eventually started causing sickness in people. The pandemic started in China and has since spread throughout the globe. Covid-19 has changed healthcare delivery and the entire public-health strategy. At this point, the traditional healthcare system would be unable to function. By implementing numerous efforts internationally to reduce the lethality and transmissibility of the deadly virus throughout populations, technology has played an essential part in reducing the effects of this pandemic. New technologies were used for various goals, including prevention, contact tracing, surveillance, and medical support at home. The pandemic has an impact on socio-cultural, religious, and psychological realms. Technology has altered our social and professional lives, but it has also presented new problems. The current study examines the growing digital technologies used during the COVID-19 pandemic and its problems and drawbacks, using PubMed and Google Scholar databases. This paper's primary goal is to identify current technology and the issues they provide.

**Keywords:** pandemic, Covid-19, artificial intelligence, digital technology.

### Introduction

SARS-CoV-2-caused Coronavirus Disease 2019 (COVID-19) was initially detected in Wuhan City, Hubei Province, China, in December 2019 and has since spread to other world regions. There was no specific therapy for the sickness during the early phases of the pandemic, and scientists were working to identify and prevent the symptoms. The only preventive methods available at the time were surveillance and containment. By encouraging less physical contact, technology has proven to be a significant aid in resolving this issue. Among the rising themes were geospatial technology, artificial intelligence (AI), big data, telemedicine, blockchain, smart apps, the Internet of Medical Things (IoMT), 5G technology and robotics (Mbunge, et al. 2020). The epidemic has had a significant impact



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on public health, infrastructure, businesses, schools, and the economy. COVID-19 has demanded the adoption of cutting-edge technologies (O'Leary 2020). The pandemic has implications for the design, development, and usage of information systems and technology. It has paved the way for advancement in technology-based solutions and focused on research and practice in areas like information management, work practices, and technology design and use (Sein 2020). The fast adoption of telemedicine, telework, and online education in reaction to the coronavirus serves as a reminder that digital technology offers several benefits and can assist in managing and reducing the risks connected with the lockdown, both during and after the pandemic (Richter 2020).

The relevance of information systems and information technology (IS/IT) in healthcare, clinical decision support, emergency/crisis response, and risk management is well-known (He et al. 2021). Many COVID-19 detection technologies have arisen, with RT-PCR serving as the gold standard for detection for quite some time. Other approaches can also be used for on-the-spot diagnostics (Han 2021). Newly created apps for contact tracing or diagnostic testing kits, on the other hand, quickly revealed basic flaws by producing false-positive tests and failing to discover asymptomatic patients. Technology's primary goal should be to help people, i.e. fulfil people's needs rather than market needs (Taylor 2021). Advanced and efficient technology is required to address the problems that have emerged due to the pandemic's size in the public health systems (He et al. 2021; Javaid, et al. 2020). During the COVID-19 epidemic, this article examines the utilisation of developing technology and the accompanying socio-technical or human behavioural difficulties.

## **In the fight against COVID 19, artificial intelligence and big data are being used.**

One such technology is artificial intelligence (AI) that could help track the virus's spread, identify high-risk individuals, and control infections in real-time. By thoroughly assessing the patients' history data, it may also forecast mortality risk. By offering population screening, medical aid, notification, and infection management advice, AI can help us fight this virus (Vaishya et al. 2020). People will understand the problem more rapidly if AI and machine learning techniques are used to locate critical data. The COVID-19 outbreak is being combated through artificial intelligence (Mbunge et al. 2020). Artificial intelligence can help in COVID19 diagnosis and risk prediction. A cloud-based AI-assisted Computed Tomography (CT) service in China detects COVID-19 pneumonia patients. Using this technology, the cases were separated from other lung diseases, speeding up the diagnostic procedure (Whitelaw, et al. 2020).

The epidemic has prompted research and artificial intelligence (AI) to fight the new threat. Using lung computed tomography imaging, AI technology was used to assist doctors in quickly diagnosing coronavirus pneumonia. During the pandemic, an AI-based chatbot was essential in responding to people's emotions and providing online consultations to help them cope with mental problems. Some Indian chatbot software saw an upsurge in users during the outbreak, demonstrating this tendency (Bao et al. 2020). Artificial intelligence (AI)-driven machine learning, image recognition, and deep learning algorithms can be used for early infection detection and diagnosis, as well as speedier drug

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discovery for developing new treatments (Brohi et al. 2020). 3D printing technology can create face masks and other Personal Protective Equipment (PPE) for healthcare workers. COVID-19 testing with 3D printed rayon wrapped Markforged and Neurophotometrics have developed nasopharyngeal (NP) swabs. The swabs are easy to make and can collect a lot of virus particles in less than three minutes (Markforged's 2020). Big Data Analytics can be utilised to find out persons who need to be isolated based on their travel history, predict the COVID-19 curve, speed up the development of antiviral medications and vaccines, and enhance understanding of the COVID-19 spread through time and geography (He et al. 2021). Individuals in China are assessed and directed to appropriate resources using free web-based and cloud-based solutions. High-performance infrared thermal cameras are used in Taiwanese airports to collect thermal images of people in real-time, swiftly diagnosing those with fever. In Singapore, people's temperatures are taken at the entrances to businesses, schools, and public transit. The thermometer data is analysed and used to identify emergent sickness hotspots and clusters where testing might commence (Whitelaw et al. 2020).

## **Technology-assisted contact tracing and monitoring**

Arogya Setu, a contact tracing app, has aided in tracking the COVID-19 outbreak. Technology has also helped notify people about the situation and remind them to take the necessary precautions. Telecom companies, including BSNL, Jio, Airtel, and others, have used caller tunes to promote awareness about the pandemic (PN 2020). Face recognition technology has allowed persons to be identified even when wearing masks. It aided in the tracking of the movements of isolated individuals. CCTV cameras with facial recognition skills have been used to identify infected people who break the law by leaving their homes when isolated (PN 2020). Big data and artificial intelligence (AI) have contributed to COVID-19 preparations and tracking, hence the spread of disease in numerous countries. Machine learning models were constructed to collect real-time data on people's positions, utilising data from migration maps, mobile phones, mobile payment apps, and social media. This information was utilised to estimate regional SARS-CoV-2 transmission dynamics and direct border checks and surveillance.

As soon as China reported the epidemic, Taiwan began conducting health inspections for travellers flying out of Wuhan, merging data from immigration records with its centralised, realtime national health insurance database. Because of this integration, healthcare facilities may evaluate patients' travel histories and identify individuals for SARS-CoV-2 testing and tracking (Whitelaw et al. 2020). Furthermore, the use of consumer-grade wearables was elaborated; the increased interest in these wearables aids in the early diagnosis of symptoms and the monitoring of physiological indicators from the comfort of one's own home. Continuous monitoring with these technologies creates possible hurdles in data analytics and management due to the extremely high volumes and variety of health information collected by each device. As a result, these sensor systems require scalable data backends

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capable of securely transferring, storing, processing, and making patient data available in a HIPAA-compliant manner.

Furthermore, the need to connect these data to other disparate sources, such as electronic health records, to increase information content drives the development of interoperability designs. The issue is that digital health data is housed in proprietary formats and on incompatible platforms, resulting in silos that are fragmented. Data sharing methods that span consumer wearables and medical-grade devices must integrate these disparate data sources (Jeong et al. 2020).

## **Social Media Usage / Mobile Devices/ Apps**

Smartphone apps and video-conferencing technology can be used to follow people's activities, alert them of COVID-19 hotspots, and provide other useful information, help doctors diagnose patients via video services and telemedicine/telehealth and help individuals with online shopping, e-learning, online meetings, and telework (Marr 2020). A range of phone and network-powered apps have been developed to assist healthcare providers and common people in this situation.

For example, in the United States, the National Science Foundation awarded Princeton University researchers a grant to develop a technique for sending a software upgrade to mobile phones that allows health officials to follow their position. To safeguard users' privacy, the key to the proximity data would be kept on the phone itself, and it could only be unlocked if the phone's owner freely provided it to health officials. Assume someone tests positive for a disease such as COVID-19. In this case, health officials may use the technology to track down all other cell phone users within a certain radius of the infected person for a set period. Health specialists could estimate the time and distance based on their situation knowledge. Healthcare departments can contact anyone who has come into contact with the illness, who will be informed of the exposure and instructed to get tested for the disease and, if necessary, selfquarantine (He et al. 2021; WHO 2020). Video-based communication services such as Zoom, Facetime, and WhatsApp are the most used technologies in the healthcare industry. Other synchronous and asynchronous remote services, such as a computer or mobile applications, information and datasets, social media, email, and chest x-ray, could be used to give synchronous and asynchronous support for COVID-19 patients and those in need of other traditional healthcare services. (Keesara et al. 2020; Vargo et al. 2021). Zoom, WebEx, Facebook Messenger, and Google Hangouts, for example, have either become the "teaching and working assistant" to prompt digitally safe and effective conferencing or have built bridges must maintain social connection in everyday life throughout this unique period, not just in the healthcare sphere, but also in education, work, and other areas and everyday life use. (Vargo et al. 2021). As a result of the pandemic, health training institutions are closing. People can stay active at home by employing different ways for continuing their health and fitness training. New alternatives have been introduced through health and fitness applications.

Many health and fitness companies have begun to provide online workouts and yoga sessions via social media platforms and mobile apps. This approach of keeping people moving during the pandemic proved to be effective (PN 2020). Many health and fitness trainers have turned to digital platforms to keep their companies afloat by providing their clients with online training and sessions.



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People may avoid going to marketplaces during lockdowns due to increased online delivery of essentials via apps and lower delivery charges.

**Robots are included:** COVID-19 has demonstrated the importance of human relationships in making things work. Food, retail, logistics, and manufacturing businesses were all badly hit by the pandemic. COVID-19 has sparked a major push to put robots to work and advance robotics development. Cleaning sick areas and delivering food to persons who have been isolated are now done by robots (PN, 2020). COVID-19 instances are rapidly increasing, and the number of people who need medical help is putting a huge demand on healthcare services worldwide. Remote-controlled robots are employed in a few countries to assist medical practitioners with duties, including collecting mouth swabs for virus detection tests, doing ultrasound scans, etc. (PN 2020).

Drones are employed for various tasks, including food delivery, population tracking, delivering medical supplies, patrolling public places, tracking non-compliance with quarantine laws, hauling test kits, spraying disinfectants, and delivering medicines to quarantine zones, among others (He et al. 2021). Robots have been used to battle the coronavirus outbreak. Robots, for example, are used in hospitals to convey food and medicine, as well as sanitise rooms and other hotspots, all without requiring direct human interaction. According to a CNN story, doctors in Seattle used a telepresence robot to treat the first confirmed patient in the United States who tested positive for coronavirus (Chavez and Kounang 2020; He et al. 2021).

## **The Internet of Medical Things (IoMT) and 5G technology are used**

The Internet of Things includes functional components such as data collecting, transit, analytics, and storage. IoT sensors on mobile phones, robotics, and health monitors can all collect data. The sensor data would then be sent to a cloud server for processing, analytics, and decision-making. IoT can be used to track whether patients follow quarantine regulations, for example. IoT can also be used to take remote patient temperatures and transmit the data to clinicians via mobile devices for monitoring, tracking, and warning, reducing the risk of coronavirus infections (He et al. 2021).

In the health and medical sectors, interconnected medical equipment, smart health applications, and smart sensors are utilised to apply Internet of Things (IoT) concepts, technologies, and principles (Swayamsiddha and Mohanty 2020). It also comprises smart software and wearable devices to aid in healthcare delivery. The IoMT impacts how healthcare services are delivered during the COVID-19 pandemic due to its limited mobility, shifting from physical touch to remote health service delivery. This is demonstrated by several IoMT apps integrated into health systems to reduce the burden on healthcare systems. 5G technology is beneficial for sharing big volumes of data and real-time communication. It provides the fastest internet speeds and a large amount of bandwidth. Although 5G technology is contentious in many countries, it has been employed in China to address issues such as containing the spread of Covid19 by placing smart cameras and smart thermometers connected to 5G technology, high-speed broadcast, and intelligent robots for taking swabs, to name a few (Mbunge, et.al 2020).

## **Blockchain technology's application**



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Blockchain technology has handled the friction and trust concerns between protecting the privacy and addressing public health needs, such as tracking infected patients, in the fight against COVID-19. It's built on a distributed, scalable, secure, privacy-preserving, and immutable record-keeping platform with the ability to change the way people trust, exchange value, and deal (Khurshid 2020). For example, a smartphone app based on blockchain technology and AI was developed to fight against the coronavirus epidemic. The software employs blockchain technology to create a "digital identity" for each member, protected by a private key that allows a digital replica of government-issued certificates. These enable healthy people to leave the house searching for food or employment (Sinclair 2020). Using blockchain, unauthorised parties have been prevented from interfering with the data. During the pandemic, a Chinese payment processor and financial services organization using blockchain technology to track claims processing and payouts (Pressgrove 2020; He et al. 2021). It has been suggested that colleges and research institutions engage with industry and business to develop and put strong use cases for blockchain applications to the test. These partnerships will help expand the usage of blockchain technologies in health care due to their widespread adoption (Khurshid 2020).

## **Telemedicine/online mental health tools**

Telemedicine has been used to give mental health support. Because of the lockdowns, social distance, and fear of the virus spreading, the pandemic increased demand for its use. It has put an end to traditional face-to-face appointments in hospitals and clinics, easing the pressure on doctors and reducing their anxiety of coming into contact with infected patients. In addition, to help minimize the stress caused by Covid19, helpline numbers and other online platforms have been built, particularly for frontline employees (Hawkins 2020). Telemedicine has been in high demand since the onset of the pandemic. As clinics worldwide stopped physically treating infected patients, they turned to internet consultations (Hawkins 2020). Telemedicine has been in high demand since the onset of the pandemic. As clinics worldwide stopped physically treating infected patients, they turned to internet consultations (Hawkins 2020). Several apps and virtual care platforms have been developed to reach out to infected patients and provide support via video conferencing and digital monitoring to decrease patient exposure to healthcare workers and professionals. It immediately restricted the introduction of the COVID- 19 virus into healthcare facilities. There has been a noteworthy swing in the way healthcare is delivered by using telemedicine due to the COVID-19 outbreak. Due to this rapid development, individuals without access to digital tools are left behind, which exacerbates inequality on several fronts. Long-standing challenges to digital inclusion include education, poverty, internet availability, information-seeking abilities, and rural domicile, all of which may impact e-Health adoption (Khilnani et al. 2020).

## **Education and the Use of Technology**

Due to the outbreak, a large percentage of the population was forced to study remotely to comply with the worldwide stay-at-home directive. Most teachers and students prefer to continue using video-based devices and platforms. As a result of the pandemic, the epidemic has become the second-largest group of digital technology users. Teachers must react to the fast speed of online teaching by devoting

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more time to preparing for online courses, innovating, creating lessons, and patiently changing students from passive recipients to engaged learners (Vargo et al. 2021). Distance learning uses augmented reality, 3D printing, virtual reality, and artificial intelligence-enabled robot teachers, among other technologies. GitHub, Blackboard, Coursera, and other platforms for knowledge distribution can be used to deliver online educational lectures. One example is teaching remotely via a video-based technique, such as VoiceThread to record short films conveying the lesson's subject (Gewin 2020). Email, online surveys, Google Sheets, and other telework technologies employ digital information to exchange virtual services at work. Furthermore, tools and programmes like Google Trends and Geographic Information Systems and social media platforms like Twitter, Instagram, Facebook, and YouTube assist in tracking, finding, and analysing epidemics in everyday life (Vargo et al. 2021).

## **Self-isolation and quarantine**

In several nations, indiscriminate lockdowns for infection control have resulted in significant economic losses. Digital technology can be used to separate those who have been exposed to or infected with the virus, while other residents are subjected to fewer limitations. By asking citizens to complete a symptom evaluation and record their temperature, China's quick response (QR) code system allows authorities to monitor health and restrict movement. Individuals with green codes can go wherever they wish, but those with red codes must self-isolate for 14 days. China also monitors and restricts public gatherings with AI-powered surveillance cameras, drone-borne cameras, and portable digital recorders (Whitelaw et al. 2020). Upon arriving in Australia, international visitors were confined to hotels, with those from Wuhan being held off the Australian mainland. According to new regulations, individuals who break quarantine will be obliged to wear tracking devices, with fines levied for further offences.

In Taiwan, government-issued GPS-tracked mobile phones assist in the electronic monitoring of home-quarantined individuals; in the event of a quarantine breach, this so-called digital fence sends messages to the individual and assesses fines. In South Korea, people in self-isolation must download a mobile phone application that alerts authorities if they leave their isolation zone. People in Hong Kong who are subject to self-isolation must wear a bracelet that connects to a database via cloud technology and alerts authorities if the quarantine is breached. Iceland has created a smartphone app to track COVID-19 patients and ensure they remain in self-isolation (Whitelaw, et al 2020). People can circumvent mobile phone solutions for quarantine enforcement if they leave their quarantine zone without their phones. Like the ones used in QR code systems, self-reported surveys are only meaningful if people are sick and can accurately explain their symptoms. However, such technological advancements may be advantageous (Whitelaw et al 2020).

## **In the event of a pandemic, technology can be used for entertainment**

During a pandemic, lockdowns and social distancing have also shut down the entertainment industries, changing the way content is created, distributed, and streamed on top platforms like Amazon Prime Video, Hotstar, Netflix, Zee5, Voot Select, and others, which cater to a wide range of



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audience interests and provide diverse content all over the world. For live streaming shows and concerts, the use of these Over-the-Top (OTT) Media Services platforms has skyrocketed. Film studios have begun to release their films on various platforms as well. On these platforms, people can now readily view the material. Lockdown has altered people's ability to watch their favourite shows daily. The number of app downloads and subscribers on OTT platforms has increased significantly. Many games, such as PubG, Ludo, Amongus, and others, have grown in popularity and user base in India. The gaming industry has seen significant expansion, and the amount of time spent playing games during lockdown has increased. People are turning to games as a stress reliever and passing the time during long days. (PN 2020).

## **Application for data storage in the Cloud**

CCE is a system that combines application, IT infrastructure, and network services. It makes use of shared data centre (DC) resources made possible by virtualization technology. In this case, on-demand, elastic, or instantaneous services and prices are applied. To assist employees in executing their jobs swiftly and efficiently while working from home, cloud computing (CC) tools are frequently used. Cloud computing has increased the volume, velocity, and variety of data generated every minute by a wide range of services and applications worldwide. The generated data may be structured, semi-structured, or unstructured. Because of the high volume of data that is being moved, it is stored in various forms that are difficult to combine at such a fast pace. (Alashhab et al. 2020).

## **Issues with current technologies**

Apart from the lack of prior training data, social media and other Internet traffic have contributed noise to large data sets, potentially leading to over-fitted or "lucky good fit" models. This noise must be filtered before dependable patterns and predictions can be recognised. Each AI forecast's accuracy, validity, and dependability should be assessed (Whitelaw et al. 2020). However, some digital media is plagued by inaccuracy, a lack of guidance, and data leaking. We advocate for greater use of digital media in facility-based settings, emphasising the importance of building trust, establishing social solidarity, reducing chaos, educating the public on prevention measures, and reducing medical costs (Bao et al. 2020). When employing technology to battle the disease, challenges such as security, privacy, biases, ethics, and the digital divide arise (He et al. 2021). To better understand the rising epidemic and make joint decisions on addressing it, public health specialists, epidemiologists, and government officials must be connected via integrated systems with corresponding data. Because people are so crucial in the fight against COVID-19, it's critical to leverage cutting-edge technology to connect, coordinate, and support a wide range of stakeholders (He et al. 2021). Information systems and technology Scholars can also identify best practices for adopting responsible data collection and processing and striking a balance between privacy and new technology usage (He et al. 2021).

### **1. Human behaviour toward technologies**

As more COVID-19-related technologies are developed, integrated, and used by governments, businesses, and individuals, it is vital to understand human behaviour in the

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development, creation, and use of technologies. Many efforts to combat the pandemic use new technology developments and methods for integrating multiple systems and technologies (Whitelaw et al. 2020). We have access to a great amount of information through social media, which has become a significant source of concern. The World Health Organization (WHO) claims that (WHO) social media is producing an infodemic, which is described as "an overabundance of information—some accurate, some false," making it difficult for people to find reliable sources and help when they need it.

Additionally, greater usage of video conferences and meetings produces a new phenomenon: tiredness, anxiety, or worry due to increased use of virtual video-conferencing platforms. Video calls' technological shortcomings—delays, lack of eye contact, and limited nonverbal cues—exhaust a person's energy considerably more than face-to-face meetings, leading to technological tiredness (Riva et al. 2020). To combat the pandemic, material reaction, behavioural modification, and human capability have all been demonstrated to be effective (Taylor 2021). Rather than automating human decision-making, AI technologies would augment and enhance human intelligence and advance decision-making processes beyond what either humans or machines can do on their own (Marjanovic et al. 2021). Marriages, birthday celebrations, family functions, and other events are also streamed live online. Many people lose track of details due to a lack of connection, and they are unable to read body language or keep eye contact with peers. The importance of "event borders" in memory formation and cognition has been described by psychologists Gabriel Radvansky and Jeffrey Zacks (Technosolutionism 2021).

- 2. Digital Technology's Negative Effects / Risks:** Higher-income countries resorted to technology for a miracle since they lacked protective material resources, the human capacity for contact tracing, and understanding of the disease. People have lost faith in contact tracing apps and diagnostic approaches because of false-negative outcomes, and the slowness of tracing asymptomatic cases has exacerbated this. Technology is necessary for pandemic response, but it must serve as support rather than a leader (Taylor 2021). Digital health efforts can reinforce socioeconomic inequality and lead to disparities in healthcare. The internet and mobile phones are common examples of digital technology. Even though 4 billion people globally accessed the internet in 2019, usage in high-income areas was disproportionately higher than in low- and middle-income areas (82 percent in Europe vs 28 percent in Africa). In high-income countries, vulnerable groups may lack access to broadband signals, cellphones, or wearable technology such as smartwatches in low-income neighbourhoods or distant locations. Interventions should be customised to the target regions to adopt digital technology effectively; Broadband connectivity demands technical and infrastructure investment from both the public and private sectors. Subsidized cell phone plans, loaner devices, free Wi-Fi hotspots, and training programmes could all be quick answers to these geographical differences. Automated apps and devices that do not require constant network access should be explored in places with insufficient infrastructure or finances to enable cellular and data coverage (Whitelaw et al. 2020).



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### 3. Lack of trust, awareness, and accessibility

Social media platforms can augment emergency alerts, crisis response actions, information gathering and dissemination, donation collection, and hierarchy-free collaboration. At the same time, social media communication may hurt meaning construction and decision-making because they personalise information, haphazard stimulation of convergence behaviour, and facilitation of anti-social behaviour. In the case of COVID-19 epidemic management, one of the most important principles for virus containment is social separation. It is, however, a social practice that is based on the trust and responsibility of individuals who take action and disturb their daily lives. It also relies on culturally relevant communications (including language translation) to ensure that everyone is aware of the implications of social distancing. In Australia, however, it was postponed because the social distancing message was not as successful as it could have been (Mirbabaie et al. 2020). As with any emerging technology, a fundamental disadvantage of telemedicine is a lack of user comprehension of its availability, services, and cost. A lack of education about the efficacy and safety of telemedicine in light of current circumstances, patient preferences for seeing their provider rather than someone with whom they have no established relationship, a lack of understanding of how to obtain telemedicine visits, and a lack of telemedicine visits have all been identified as barriers to telemedicine. Older people who live in distant places have less education, have more chronic illnesses, are less likely to utilise the internet than their peers (Kichloo et al. 2020).

### 4. Data Privacy Concerns

A significant amount of data was generated during the Covid 19 pandemic. For healthcare, data on patients, the virus genome, pharmaceutical and clinical studies, social media, and even facial recognition data are collected (Alashhab et al. 2020). Algorithms, cloud computing, and information openness all have ethical implications critical for the current societal shifts brought on by digital technology, although these implications are small and unequal in reality (Nicolescu et al. 2018). Several digital health treatments, particularly those that track persons and impose quarantines, could be infringing on people's privacy. Surveillance and control by the government can instil fear and jeopardise civil freedoms. To achieve a balance between the need for contact tracing and privacy, European officials have proposed that data be maintained for only 14 days, the length of time it takes a virus to spread, and that non-essential digital safeguards be relaxed after the pandemic is finished. A smartphone tracking scheme with anonymized data, no central database, and no information from the Global Positioning System (GPS) is employed in several European countries. Allowing a restoration to a normal routine without recurrence of infections may alleviate privacy and data security concerns (Whitelaw et al. 2020).

### 5. Economic Inequality or Expensive Technology

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The problem has disproportionately affected people with the lowest incomes and educational attainment. This will aggravate the difficulties of attaining inclusive growth and widening wealth disparities (Willcocks 2020). COVID-19 is more vulnerable to rising automation than small and medium-sized enterprises, as well as communities of colour. Many countries cannot use systematic screening technologies because they are expensive and require skilled personnel (Papadopoulos et al. 2020).

Digital technologies that monitor vital signs or self-report symptoms are ineffectual due to the extended incubation time and relatively high prevalence of asymptomatic illness compared to other infectious diseases. Because of these characteristics, researchers at the European Centre for Disease Prevention and Control expect that most passengers from Chinese cities will be overlooked by screening (Whitelaw et al. 2020). If they develop symptoms that could indicate the onset of the virus, economically disadvantaged Americans with household incomes of \$40,000 or less are far less likely to use telemedicine to seek medical attention; instead, they are far more likely to seek care at an ER or other facility where they may be at risk (Khilnani, et al. 2020). IT infrastructure expenditures have risen due to the COVID-19 epidemic, as employees use teleworking and students enrol in online programmes. It's important to comprehend the rise in IT infrastructure's hard expenses due to rising demand. As the epidemic worsens, IT infrastructures must be enhanced to allow workers to carry out their duties safely and healthily (CISA 2020).

## Conclusion

During the COVID19 epidemic, technological advancements proved to be extremely beneficial in controlling the hazardous situation in a systematic and timely manner. During the COVID19 pandemic, society's reliance on technology increased, resulting in social and vocational changes that may continue much beyond the current crisis. As a result, making intelligent and intentional judgments about using technology to improve our lives, reduce stress, and promote mental health is crucial. Different countries' approaches to COVID-19 management and technological amalgamation are unique in flattening the incidence curve and maintaining a low fatality rate. Human resources are needed to create and develop more efficient technical breakthroughs and integrate these technologies into the healthcare system. The use of technology has resulted in a massive volume of online data. Transparency and management of massive data on a single platform, which should be easily accessible for using AI models to develop novel pandemic management strategies, are critical. Researchers should also consider the negative effects of technology and privacy concerns. Every citizen of the country should use technology without budgetary constraints or a lack of awareness. Immediate technical steps to prevent the pandemic are critical for safety and risk management when considering human behaviour patterns. The competing interests-The author declares that there are no competing interests. Conflict of Interest –No conflict of interest Funding-





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Self. Availability of data and materials- The data set will not be shared to protect the participants' identities.

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## **Sustainable Tourism Development in Sam Mountain, Chau Doc City, Vietnam**

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### **Abstract**

Using 116 Likert questionnaires, this study analyzes residents' perspectives on sustainable tourist development principles in the Sam Mountains of Chau Doc City, Vietnam. The study assesses economic, social, environmental, hierarchical, and satisfaction levels using a 5-point scale. The Exploratory Factor Analysis (EFA) method is applied to identify four (4) province tourism development variables. Local governments will utilize the findings and recommendations of the study as a foundation for proposing ways to regulate tourism activities at Sam Mountain to achieve sustainable growth.

**Keywords:** Sam Mountain, Sustainable Tourism Development, An Giang province

### **1. Introduction**

Tourism is one of the world's most important economic sectors, generating not only monetary but also social prosperity, especially in small villages. In 2018, tourism accounted for



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10.4% of global GDP and 10% of total employment worldwide, or 319 million jobs (World Travel & Tourism Council, 2019). Tourism accounts for 6.5% of global exports and 27.2% of global service exports, according to the World Travel & Tourism Council (2019). Promoting the benefits of natural tourism resources can stimulate tourism expansion. However, significant tourism growth can negatively damage the traditional way of life, culture, and ecology of indigenous peoples. Kaowen et al. (2018), Md Shahzalal (2017) (2016). This topic is of interest to local governments, scientists, and vacationers.

The Sam Mountain in Chau Doc, Vietnam, is one of the province of An Giang's most alluring tourist attractions. According to the An Giang department of Culture, Sports, and Tourism (2020), Sam mountain received 4.5 million visitors in 2016, 5.2 million in 2017, 5.5 million in 2018, and 5.8 million in 2019. Due to Covid-19, the number of tourists in 2020 has significantly decreased. 80 percent of all visitors to Sam Mountain are domestic. However, the proportion of its tourism development to its advantages and potential is not proportional. The issues are managerial competencies, tourist content, and tourism. However, the proportion of its tourism development to its advantages and potential is not proportional. Inadequate managerial skills among authorities, tourist-related material such as marketing strategy, tourism products, bad services, and human resource-related deficiencies are the root causes of the problems on Sam Mountain. In order to enhance Sam Mountain tourism, raise the incomes and living standards of people of the local community, and protect traditional traditions, there is a need for research that provides detailed analyses and recommendations.

This study examined the elements impacting the development of sustainable tourism at Sam Mountain in An Giang Province, Vietnam, and had three objectives:

- (i) Clarify, from a local perspective, the variables impacting sustainable tourism development.
- (ii) To collect residents' perspectives on sustainable tourism development
- (iii) To give recommendations for the region's sustainable tourism growth





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## 2. Literature Review

Tourism is one of the world's greatest economic sectors, contributing to not only economic but also social growth, particularly in local areas. However, rapid tourist growth has also been viewed as detrimental to indigenous people's traditional culture and ecology (Kaowen et al., 2018; Oladeji, 2017; Md Shahzzalal, 2016; Lanford, 1994; Mohammed, 2007). This issue is of enormous importance to local governments, authorities, and people all over the world, and it stimulates and urges countries to develop tourism destinations in a sustainable and environmentally friendly manner.

Even more than a century ago, scholars formulated the first concepts of sustainability in development (Chandana et al, 2008). The phrase "sustainable development" was first used in 1980 by the International Union for Conservation of Nature and Natural Resources in its World Conservation Strategy. However, Rohe (1997) and Butler (1998) argued that the technique at the time was not fit for the present circumstances because it originated from the industrialization era. As a result, it is unlikely that a fully agreed and globally applicable definition of sustainable tourism will ever be developed, as the team's success originates from its indefinability, as it is everything to everyone. For environmentalists, this indicates that concepts espoused more than a decade ago are still applicable. The World Commission on Environment and Development (1987, p.43) defined sustainable development as "development that meets the demands of the present without jeopardizing future generations' ability to satisfy their own needs." This definition was accepted by numerous social groups and put into effect (MacLellan, 1997). Sustainable development has risen to the top of the global agenda for all forms of development (Sofield, 2003).

Butler (1993, p.29) defined more sustainable tourism development as "tourism that is developed and maintained in an area (community, environment) in such a way and at such a scale that it remains viable indefinitely and does not degrade or alter the environment (human and physical) in which it exists in such a way that it prevents the successful development and well-

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being of other agrarian species." Sustainable tourism is described as "the practice of meeting existing needs without jeopardizing future generations' ability to fulfill their own needs" (World Commission on Environment and Development, 1987, cited by UNEP and UNWTO, 2005). UNEP UNWTO (2005) also defined sustainable tourism as a type of tourism that examines its current and future economic, social, and environmental effect, addressing the requirements of tourists, the industry, the environment, and host communities. On the basis of these definitions, sustainable tourism has the potential to grow in the near future. This decade has seen the emergence of the idea of sustainability tourism, which combines the visions of tourism, environment, and conservation scholars (Hardy et al, 2002), in accordance with the spread of sustainable development application in multiple sectors.

Sustainable tourism development involves the engagement of all key parties, including government officials, business owners, tourists, and residents. Sustainable development in tourism is an ongoing process that necessitates the monitoring of frequent influences, preventative measures, and any necessary adjustments (UNWTO, 2006). According to Hall (1998), the primary goal of sustainable development is to protect the locals' way of life, culture, community, and environment. Consequently, sustainable development necessitates the engagement of numerous aspects, including the essential parties and a strategic plan during its development in order to fulfill its objective (Simpson 2001). UNWTO (2013) also identified five pillars for sustainable tourism development, namely Tourism policy and governance; Economic performance, Investment, and competitiveness; Employment, decent work, and human capital; Poverty reduction and social inclusion; and Sustainability of the natural and cultural environment. Samy and El-Barmelgy (2005) assert that the principles of sustainable tourism development comprise environmental, economic, and sociocultural factors. To achieve long-term success, a sustainable balance must be achieved between these three elements. Foday Yaya Drammeh (2015) said that sustainable tourism development in Least Developed Countries should be more centered on three capitals that are unique to the destination: environmental, sociocultural, and human capital. According to



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Euromontana (2011), there are three distinct challenges related to sustainable mountain tourism: social, environmental, and economic components.

Maria (2020) focuses the study on three major factors for tourism impacts in Bulgarian destinations: the level of tourism development, the stage of tourism development life cycle, and the predominant tourism type. One of the most intriguing findings is that highly seasonal destinations, regardless of their level or stage of tourism development, are the least likely to be sustainable. All three investigated factors were discovered to be extremely important in differentiating residents. According to Kattiyapornpong et al (2018), stakeholders', local leaders', and policymakers' perceptions have a strong impact on sustainable tourism development in the local community.' attitudes toward tourism, their perception of tourism impacts, and overall tourism sustainability. Dalia et al (2021) addresses the main challenges of sustainable tourism development and provides new insights for strengthening the competitiveness of sustainable tourism destinations. The business participants want to implement new technologies in tourism services that benefit the environment and local communities; however, changing the environment, increasing consumer motivation for sustainable tourism services, and changing their behavior to be more sustainable are all difficult tasks. The current Covid 19 outbreak, along with the high risk of future pandemics, have created new challenges for long-term tourism sustainable development.

Several academic publications and official documents address the issue of sustainable tourism development. Despite this, practical applications of this concept in developing sustainable the tourism at mountainous areas are extremely uncommon. Several publications have attempted to identify the factors that contribute to a destination's long-term tourism development. The current research seeks to investigate residents' perspectives on important factors to sustainable tourism on Sam mountain of Chau Doc city, Vietnam.

As regards to World Bank (2019), more than 45 million Vietnamese people have been lifted out of poverty between 2002 and 2018, with poverty rates dropping from more than 70% to less



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than 6%. Mai (2020); Lam (2006) stated that the number of tourists visiting Vietnam has increased in recent years, and tourist attractions have expanded their operations. Furthermore, despite the fact that the tourism industry has significantly contributed to Vietnam's GDP growth, the Vietnamese public's understanding of ecotourism is both palpable and ambiguous. Meanwhile, Pham and Khin (2015) pointed out that in recent years, Vietnam has prioritized economic development while ignoring environmental concerns. As a result, tourism development is regarded as one of Vietnam's most important economic sectors; however, in order to develop sustainably, it is necessary to have long-term solutions. Therefore, sustainable tourism development researches are important in Vietnam, especially in mountainous areas.

### 3. Methodology

There are numerous approaches to determine the sample size based on formula or experience. In terms of experience, Hoyle (1995) recommended a sample size between 100 and 200. (Sirakaya-Turk et al., 2011, p.87). Participants were chosen through the use of convenient sampling and sprout development approaches. Due to the nature of the research, time, and expense, the researcher utilized handy sampling since, as stated by Gravetter and Forzano (2012), with convenience sampling, researchers simply recruit individuals who are easy to obtain.

A list of Nui Cam mountain houses was provided by the Nui Sam Commune People's Committee, and this list was placed by name into the computer software. The sample population consists of residents of the region surrounding Sam Mountain. In actuality, 120 samples of inhabitants were selected at random by a computer program based on an alphabetical list of all available households; the total number of samples obtained was 120, and 116 samples were deemed acceptable following inspection. The primary data consists of the responses of 116 residents of the city of Chau Doc. The conclusions of this study are mostly based on the questionnaire and procedures of random sampling. The primary data consists of the responses of 116 residents of the city of Chau Doc. The majority of this study's findings are based on interviews



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with locals conducted utilizing a questionnaire and random sampling techniques. From October 2018 to December 2019, the researcher performed the surveys. Data Analysis: The data were analysed by SPSS 20.0 software. The following techniques were used to analysed the data: To examine the relationship between influencing important factors and sustainable tourism development at Cam mountain by Factors Analysis (EFA) and Descriptive Statistics and Exploratory.

The study highlighted the literature and practices in sustainable tourism development, which benefited the economic standing of local people and preserved the environment and culture. The suggested model is based on prior research's literature reviews and field trips to Sam mountain. This theoretical study is based on Kaowen et al. (2018), Oladeji et al. (2017), Md Shahzalal et al. (2016), Mohammed (2007), Maria (2020), Dalia at el (2021), Tuan & Rajagopal (2019), Kattiyapornpong at el (2018), UNWTO (2013), and Euromontana (2011). Therefore, in terms of the locals in the city of Chau Doc, we provide the following evaluation of the criteria of sustainable tourist growth in Sam Mountain:

.Hypothesis 1 (**H1**): There is a corresponding relationship between economic the factor (L1) and sustainable tourism development in the Sam Mountain.

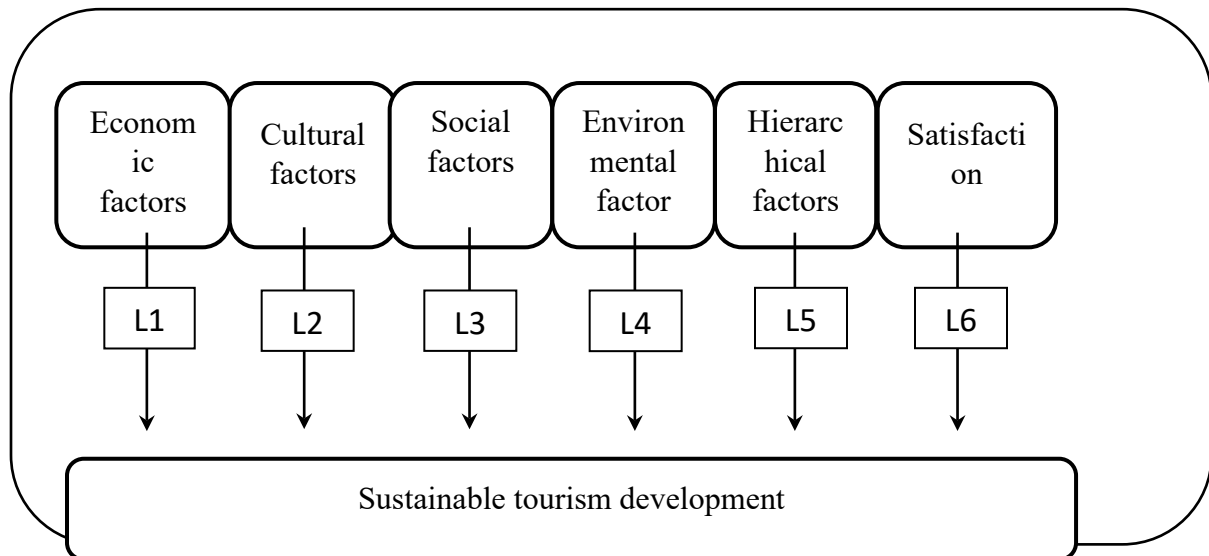
Hypothesis 2 (**H2**): There is a corresponding relationship between the cultural factor (L2) and sustainable tourism development in the Sam Mountain.

Hypothesis 3 (**H3**): There is a corresponding relationship between the social factor (L3) and sustainable tourism development in the Sam Mountain.

Hypothesis 4 (**H4**): There is a corresponding relationship between the environmental factor (L4) and sustainable tourism development in the Sam Mountain.

Hypothesis 5 (**H5**): There is a corresponding relationship between the hierarchical factor (L5) and sustainable tourism development in the Sam Mountain.

Hypothesis 6 (**H6**): There is a corresponding relationship between satisfaction and sustainable tourism development in the Sam Mountain.



**Picture 1: Research model of sustainable tourism development in the Sam mountain**

*Source: Authors (2018)*

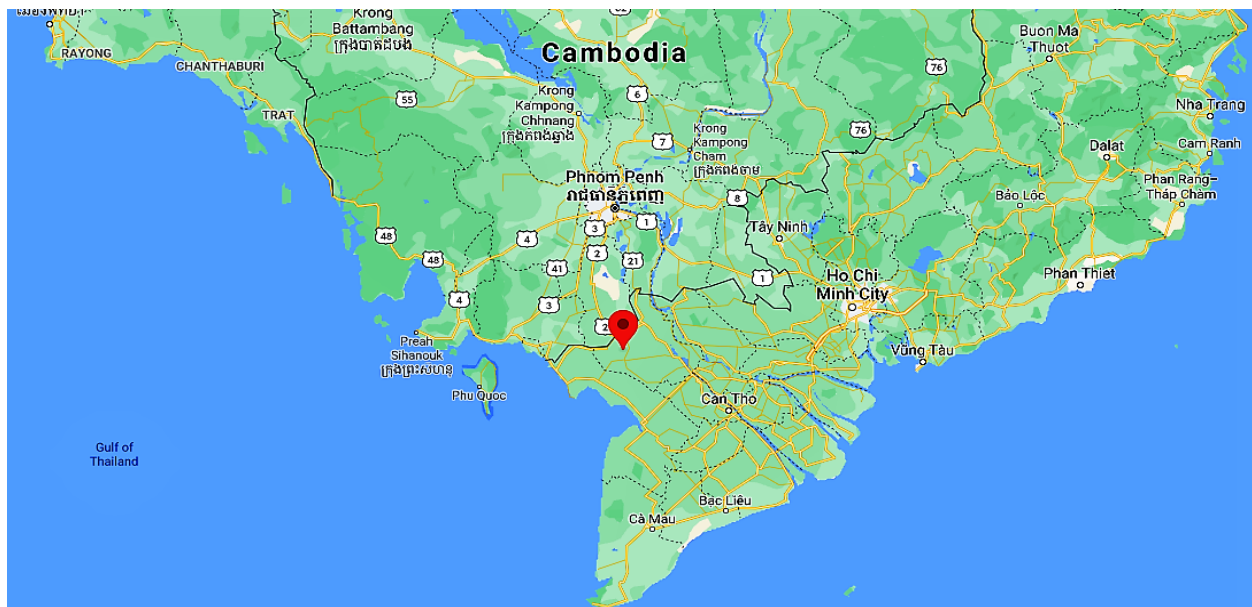
#### 4. Overview of research area

Near Vietnam's Mekong Delta, the Sam mountain is located in Chau Doc city, An Giang province. This location is one of the most alluring tourist attractions in the province of An Giang not only because of its breath-taking scenery, but also because of its abundance of pagodas and temples. The most famous cultural tourist attraction is the "Nui Sam Chua Xu Lady Temple," which continues to attract millions of tourists to Sam mountain each year. According to the An Giang department of Culture, Sports, and Tourism (2020), Sam mountain received 4.5 million visitors in 2016, 5.2 million in 2017, 5.5 million in 2018, and 5.8 million in 2019. 80 percent of all visitors to Sam Mountain are domestic. However, the proportion of its tourism development to its advantages and potential is not proportional. In the Sam mountain, the issues are managerial skills, tourist content, tourism products, poor service quality, and people resources. Hence, we need





research which offers detailed evaluations and recommendations to develop Sam mountain tourism and raise the incomes and living quality of the local community. According to statistics from the An Giang department of Culture, Sports and Tourism (2020), Sam mountain welcomed 4.5 million visitors in 2016, increasing to 5.2 million visitors in 2017, 5.5 million visitors in 2018, and 5.8 million visitors in 2019. Most travellers visiting Sam Mountain is domestic tourists, which is accounted for approximately 80% of total ones. However, compared with its advantages and potential, its tourism development is not proportional to its potential. The problems are managerial skills, tourism content, tourism products, low service quality, and human resources in the Sam



mountain. Hence, we need research which offers detailed evaluations and recommendations to develop Sam mountain tourism and raise the incomes and living quality of the local community.

**Picture 1: Map of Sam mountain**

Source: [www.google.com/maps/place/B%E1%BA%A3y+N%C3%BAI/@-5.7369302,131.7973843,4.54z/data=!4m1!1m7!1s0x3109f64e209ed487:0xae9fb9c10fee9f6e6!2zQuG6o3kgTsO6aQ!3b1!8m2!3d10.5007455!4d104.9914601!3m4!1s0x3109f64e209ed487:0xae9fb9c10fee9f6e6!8m2!3d10.5007455!4d104.9914601?hl=en](https://www.google.com/maps/place/B%E1%BA%A3y+N%C3%BAI/@-5.7369302,131.7973843,4.54z/data=!4m1!1m7!1s0x3109f64e209ed487:0xae9fb9c10fee9f6e6!2zQuG6o3kgTsO6aQ!3b1!8m2!3d10.5007455!4d104.9914601!3m4!1s0x3109f64e209ed487:0xae9fb9c10fee9f6e6!8m2!3d10.5007455!4d104.9914601?hl=en)

## 5.Results



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## 5.1 Sample size of research participants

The following characteristics are used to classify the survey samples: gender, age, ethnicity, degree of education, occupation, engagement in tourism activities, and average monthly income. The sample consisted of 52 males and 64 females, representing 47.2% and 52.8% of the population, respectively, with a response rate of 100%. Male and female rates do not differ significantly, thus the study will be objective because the number of each gender is roughly equal. The sample's ages varied. 72.6 percent of the whole sample is comprised of individuals between the ages of 18 and 29. The percentage of people with the greatest degree of education is 45.7%, followed by university with 39.7%, and then others (including colleges and intermediate) with 13.8%. The remainder consists of lower secondary school, which accounts for 0.9%. Others (pupils and students) accounted for the biggest proportion of respondents (57 people, 49.1 percent), business and commerce accounted for the second-highest proportion (34 people, 29.3 percent), and state authorities and tourism personnel ranked third. 24 persons make for 20.7% of the population. Twenty-one percent of respondents participated in tourism activities (selling souvenirs). 91 respondents, representing 78.4 percent, did not participate in tourism-related activities. Due to uneven tourist development, many individuals do not participate in tourism-related activities. The biggest share, 40.5%, was comprised of respondents with an average income of more than 6 million dong (255 US dollars). Respondents with earnings below 2 million vn (95 USD) ranked second with 39.7 percent, respondents with incomes of 4-5.9 million vn (195 - 254 USD) ranked third with 10.3 percent, and the remaining respondents with income between 2-3.9 million vn (87 USD - 253 USD) accounted for 9.5 percent. Most of the population in the region is Chinese, and they are adept at exchanging gifts with travelers, motels, and restaurants.

## 5.2 Factors affecting the level of sustainable tourism development of Nui Sam Mountain, An Giang province



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The model has six elements with twenty-seven observable variables. Cronbach's Alpha is used to evaluate the reliability of the scales in order to weed out "junk" variables. Variables having a total correlation coefficient below 0.30 are omitted (Nunnally, 1978; Peterson, 1994; Slater, 1995). When the Cronbach's Alpha coefficient exceeds 0.60, the dependability of the scale will increase. The results of the research revealed that ten variables were omitted from the model due to their correlation coefficients; the total adjustment was less than 0.30.

**Table 1: Reliability scales and typical variables after testing**

The scale	Characteristic variable	Cronbach's $\alpha$
1. Economic factors	X1, X2, X3, X4, X5	0.731
2. Social factors	X9, X10, X11	0.820
3. Environmental factors	X16, X17, X18, X19	0.746
4. Institutional factors	X21, X22, X23	0.825
5. Satisfaction factor	X24, X25, X26, X27	0.755

*Source: Interview with local people in Nui Sam Ward in 2018, n = 116*

Thus, after assessing the scale's reliability, there are five (5) scales of independent factors with 19 observed variables eligible to conduct discovery factor analysis.

The data test results show that  $KMO = 0.683$ ,  $Sig = 0.000$ , the total variance explained = 64, 551 Satisfying the conditions for exploratory factor analysis.

**Table 2: KMO and Bartlett's Test tests**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.683
Bartlett's Test of Sphericity	Approx. Chi-Square	897.823
Sphericity	DF	171
	Sig	0.000



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*Source: Interview with local people in Nui Sam Ward in 2018, n = 116*

The rotating matrix shows that there are five (5) factors affecting sustainable tourism development in Sam Mountain. Thus, through the methods of assessing the scales' reliability and analyzing the discovering factors, we collected five (5) scales representing the factors affecting the sustainable tourism development at Sam Mountain. Summarized in Table 3.

### **Table 3: Adjustment model through Cronbach's $\alpha$ test and factor discovery analysis**



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No.	Scale characteristic	Variable	Explain the scale
1	F1	X3, X2, X1	Local economic development
2	F2	X18, X17, X16, X19	Environmental pollution
3	F3	X11, X10, X9	Security order status
4	F4	X26, X24, X27, X25	Satisfaction
5	F5	X21, X22, X23	The management of local authorities

*Source: Interview with local people in Nui Sam Ward in 2018, n = 116*

According to Hoang Trong and Chu Nguyen Mong Ngoc, 2008 as cited in Quang and Thanh, 2019, the logistic multivariate regression model is statistically significant when the model has the appropriate, accurate, and meaning regression coefficients in the model. Correlation in the Logistic multivariate regression model is shown by -2LL (-2 log-likelihood). The smaller the -2LL, the better the appropriateness. The smallest value of -2LL is 0 (means there are no errors), then the model has perfect appropriateness. The accuracy of the model is reflected through the correct predictive rate of the whole model. The model is highly accurate when the predictive rate of the whole model is high. Use the Wald test (regression hypothesis test with a difference of 0) to test the statistical significance of the regression coefficients in the model.

Also, according to Trong and Ngoc, 2008 to calculate factor scores

For each observed variable, follow the equation:

$$F_i = W_{i1} X_1 + W_{i2} X_2 + W_{i3} X_3 + W_{i4} X_4 + \dots + W_{ik} X_k$$



Inside:

$F_i$ : estimated value of factor  $i$

WI: factor weighting

K: number of variables

Based on the factor rotation matrix table (Table 12), we have the score equations

the following factors:

$$F1 = + 0.397 X3 + 0.354 X2 + 0.312 X1$$

Factor 1, the factor "local economic development" is affected by three variables: X2 (Many local people improve their income due to tourism); X2 (Many local people have jobs from tourism), X1 (the local economy has improved due to tourism); The most powerful variable X3 is due to a large factor score.

$$F2 = 0.344 X18 + 0.340 X17 + 0.333 X16 + 0.191 X19$$

Factor 2, the factor "environmental pollution" is affected by four (4) variables: X18 (Rest houses and restaurants lack wastewater treatment systems); X17 (A lot of garbage from tourists); X16 (Waste not yet collected and treated); X19 (Incineration of joss sticks, burning of votive papers causes environmental pollution). In which variables X18 and X17 are most impactful due to the large factor scores.

$$F3 = 0.404 X11 + 0.359 X10 + 0.332 X9$$

Factor 3, the factor "State of order and security" is affected by three (3) variables: X11 (The condition of the goods sold at a high price); X10 (low-quality goods of unknown origin); X9 (The situation draws in tourists). The most powerful variable X11 is due to a large factor score.

$$F4 = 0.377 X26 + 0.350 X24 + 0.335 X27 + 0.334 X25$$

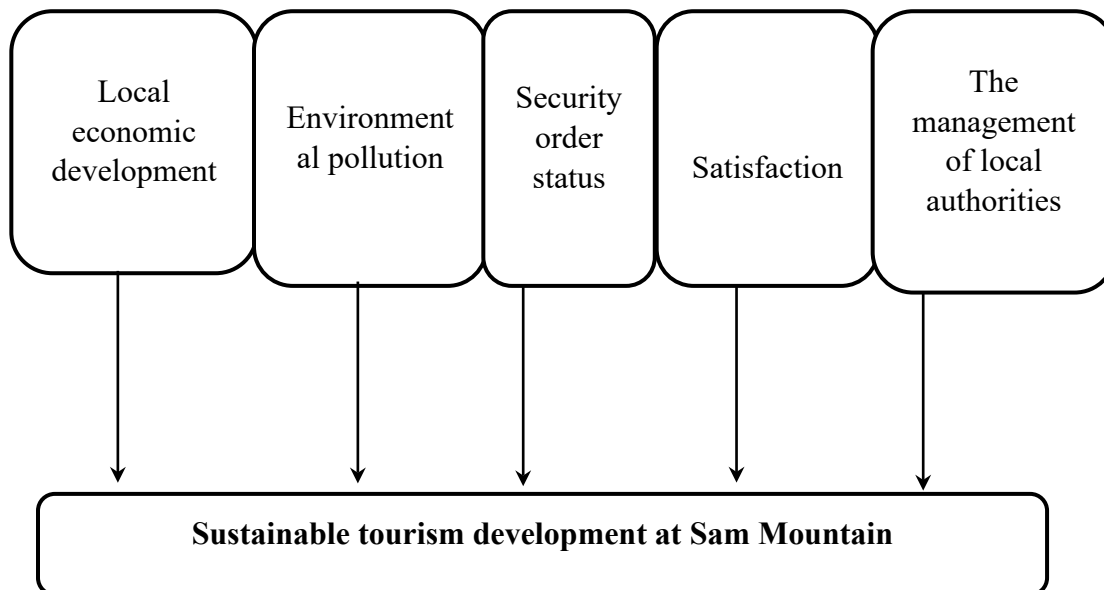




Factor 4, the factor "satisfaction" is affected by four (4) variables: X26 (The number of visitors returning to Sam Mountain increases); X24 (You are satisfied with the tourism activities here); X 27 (Tourism activity time tends to prolong); X25 (Tourist attitude sympathizing with the locals). The most powerful variable X26 is due to the large factor scores.

$$F5 = 0.404 X21 + 0.409 X22 + 0.292 X23$$

Factor 5, the factor "management of the local government" is affected by three (3) variables: X21 (Does the government check the fire situation in the tourist service business households); X22 (Local authorities check the safety of vehicles); X23 (Local authorities encourage people to develop tourism sustainably). In which variables X21, X22 are most impactful due to the large factor scores.



**Figure 2: Real-world model adopted after testing Cronbach's Alpha and discovery factor analysis**

### 5.3 Evaluation of residents on sustainable Tourism Development in Sam Mountain



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Local people's assessments of sustainable tourism development in Sam Mountain are based on a 5-level Likert scale: (1) Strongly disagree, (2) Do not Agree, (3) Neutral, (4) Agree (5) Strongly agree.

Evaluation results of 116 local people. After statistical analysis, the people's evaluation is expressed through five (5) groups of factors. The analysis of results shows that there is a group of "cultural factors" excluded from the research model.

**Group 1:** This group consists of 3 measurement variables that are assessed to be good with respect to economic factors, including Many locals improve their income due to tourism; many local people have jobs from tourism and the local economy improved due to tourism,

**Group 2:** This group includes 3 measurement variables that are assessed to be at a good level for social factors, including attraction of tourists, the occurrence of poor-quality sales, and the status of clothing items sold at a high price.

**Group 3:** This group includes 4 measurement variables that are assessed to be good with respect to environmental factors, including waste not yet collected and treated, wastes from tourists, hotels, lack of systems. Wastewater treatment, incense burning, votive burning polluting the environment.

**Group 4:** This group includes 3 measurement variables that are assessed to be at a good level for institutional factors, including The authorities have checked the fire situation in the tourist service business and the local authorities had checked the safety of transportation modes, and the local authorities have encouraged people to develop tourism sustainably.

**Group 5:** This group includes 4 measurement variables that are assessed to be good with respect to the satisfaction factor, including You are satisfied with the tourism activities here, tourist attitude sympathizes with local people, number of tourists returning to Sam Mountain increases, time of tourism activities tends to be extended.

In order to accurately assess the factors affecting tourism development in Sam Mountain, An Giang province, it is necessary to conduct descriptive statistics for the observed variables. To facilitate the comment, the authors use conventions as follows:

$0 \leq \text{Mean} \leq 1.8$ : Low

$1,8 \leq \text{Mean} \leq 2.6$ : Medium



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$2,61 \leq \text{Mean} \leq 3.4$ : Fairly

$3,41 \leq \text{Mean} \leq 4.2$ : Good

$4,21 \leq \text{Mean} \leq 5.0$ : Very good

**Table 4: People's assessments of local economic development**

Variable measurement	Value middle jar	Difference standard	Level Evaluate
<b>Local economic development</b>			
The local economy has improved thanks to tourism,	3.85	0.83	Good
	3.87	0.78	Good
Many locals have jobs in tourism	3.91	0.82	Good
Many locals improve their income thanks to tourism	3.87	0.81	Good
<b>Total:</b>			

*Source: Interview with local people in Nui Sam Ward in 2018, n = 116*

For local economic development, Table 5 shows that the local economy benefits from tourism. Significantly the local people improve their income due to tourism.

**Table 5 People's assessment of public order and security**

Variable measurement	Value middle jar	Difference standard	Level Evaluate
<b>Security order status</b>			

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The condition of the items sold at high prices.	3.92	0.97	Good
sale of low-quality products	3.90	1.08	Good
Situation enticed tourists took place	4.12	0.92	Good
	3.98	0.99	Good

**Total:**

*Source: Interview with local people in Nui Sam Ward in 2018, n = 116*

Regarding the security and order situation in Sam Mountain, the analysis in Table 6 shows that trading goods of poor quality, enticing tourists, is still happening. Especially the status of poor-quality sales of unknown origin.

**Table 6. People's assessment of environmental pollution**

Variable measurement	Value middle jar	Difference standard	Level Evaluate
<b>Environmental pollution</b>			
Lodging, diner lacking sewage treatment system,	3.59	1.03	Good
Lots of waste from visitors,	3.89	0.90	Good
Rubbish has not been collected and processed yet,	3.45	1.07	Good
Incense burning, burning votive polluting the environment.	3.71	0.95	Good
	3.66	0.98	Good

**Total:**

*Source: Interview with local people in Nui Sam Ward in 2018, n = 116*

Based on identifying factors affecting the sustainable tourism development of Sam Mountain, the research team adopted visitor reviews to initially outline the status of sustainable tourism development here. Among the identified factors, environmental pollution is the main factor. At present, Sam Mountain is focusing on the collection and handling of waste from tourists. In



In addition to the waste situation, the issue of clean water for domestic use is also noticeable through the analysis results in Table 7. In general, environmental pollution is a matter of major concern and substantial impact on the ecological landscape, sustainable tourism development here.

**Table 7. People's assessments of the management of local authorities**

<b>Variable measurement</b>	<b>Value middle jar</b>	<b>Difference standard</b>	<b>Level Evaluat e</b>
<b>The management of local authorities</b>			
The government has checked the situation of fire and explosion at tourist service businesses	3.63	0.78	Good
Local authorities have checked the safety of vehicles	3.71	0.69	Good
Local authorities encourage people to develop tourism sustainably	3.77	0.79	Good

*Source: Interview with local people in Nui Sam Ward in 2018, n = 116*

In recent years, the number of tourists coming to Sam Mountain has been increasing. The local authority has gradually increased the safety inspection of vehicles and fire. From the perspective of the local people, the government encourages it. People develop sustainably through the analysis results in Table 8.

The "satisfaction" factor in Table 9, the number of visitors increases each year through the evaluation of people by the number of visitors returning to Sam Mountain. The local people's attitude is becoming more and more welcoming to tourists through meetings to guide the people by the local government. This is also one of the important factors in tourism development. The results of the surveyed 116 local people are passed by 6 groups of factors. Among them, are 3 groups assessed at a good level "local economic development, environmental factors, and factors of satisfaction ". The other conclusion is that there are 5 factors affecting sustainable tourism



development in Sam Mountain, such as local economic development, environmental pollution, state of security and order, satisfaction, and local government management work.

**Table 8. Assessments of local people on satisfaction**

Variable measurement	Value middle jar	Difference Standard	Level Evaluate
<b>Satisfaction</b>			
The number of tourists returning to Sam Mountain increased	4.01	0.83	Good
You are satisfied with the tourism activities here	3.77	0.78	Good
Tourism activities time tends to last longer	4.06	0.78	Good
Attitude of local people towards tourists	3.80	0.67	Good

*Source: Interview with local people in Nui Sam Ward in 2018, n = 116*

## 6. Discussions, and recommendations

Based on the research results, we suggest solutions to develop sustainable tourism of Sam Mountain in city name, Vietnam.

### Solutions to environmental pollution

Mountains have extremely fragile ecosystems and landscapes, which are affected not just by natural dangers but also by human activity. This could result in deforestation, soil erosion, and pollution, while the concentration of tourists in small regions could increase noise and trash. (United Nations Environment Programme 2007 ; McCool et al 2014 ; Carr et al 2016 ; Dunja et al 2018). Previous research indicates that an increase in the number of tourists has resulted in a growing and uncontrolled exploitation of natural resources and a decline in the environmental





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quality of life. (Marija Kostić, 2018). According to Cao Thi Thu Trang (2012) and Tatu Sundqvist (2013), Cat Ba Island is part of Hai Phong's Cat Hai District. Since 2004, UNESCO has designated this island as a Biosphere Reserve. Although services – tourism, aquaculture, agriculture, and shipping – are robust, these activities place a significant strain on the island's ecology in terms of exhaust fumes, wastewater, and solid waste. In fact, more than one million people visit the island annually. Tourism development poses a hazard to the local population and the environment. The growth of trash is alarming because waste management on the island is underdeveloped. The garbage is hauled to and from an open landfill in the island's center, where it is burned. Also, it appears that locals frequently burn trash in their own yards. On the island, there is a need for the growth of garbage management. In the Sam Mountains, waste management is a critical concern that requires care. Educating citizens and tourists about environmental conservation should be a top concern for local governments. It is vital to supply more trash cans, to swiftly dispose of waste when cans are full, and not to criticize consumers and individuals who lack a garbage disposal area. Cases of improper waste disposal must be addressed on both sides of the Mieu Ba entrance and in drainage ditches. The unsightly trash has not only caused the sacred location to lose its visual appeal, but it has also impeded drainage in the event of prolonged rainfall. Waste must be separated into two categories: biodegradable and non-biodegradable and managed accordingly.

## **Security and order status solutions**

Social security and traffic accidents should be given more attention. A parking area should be located away from the Chau Doc market, where a shuttle bus from Sam Mountain would pick up tourists and transport them to various tourist spots. The shuttle service would eliminate personal transportation, exacerbating traffic congestion on weekends and holidays. A large number of tourists visit the Mieu Ba region. There must be measures in place to guarantee the safety of all visitors. There must be an entrance and exit gate. In January 2014, according to Debarbieux (2014), two stages of the Dakar Rally were raced in Bolivia. The Bolivian government was particularly involved in marketing the event, paying ASO, the French corporation organizing the rally, a



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membership fee of two million dollars and investing in infrastructure to allow the event to take place. However, the economic benefits of the Bolivia rally continue to be the significant impact of hundreds of racing vehicles on the sustainable growth of tourism. The example of the Bolivian Dakar Rally demonstrates that a number of cars have an impact on environmental contamination, particularly the sustainable development of mountain tourism. In order to reduce environmental harm, it is imperative to establish a public bus system. In light of the preceding illustration, it is essential to propose the development of public shuttle buses between the Chau Doc market and Sam Mountain in order to not only reduce vehicle emissions in Sam Mountain, but also to allow tourists to enjoy the beautiful scenery without being distracted by traffic congestion and limited parking. These buses will assist travelers in visiting a variety of tourist spots and alleviate traffic congestion during the busy season. The Hiker Express shuttle is also helpful for travelers visiting Grand Canyon National Park in the United States. Additionally, visitors can park at the Grand Canyon Visitor Center and take the Kaibab Rim Route to the South Kaibab Trailhead. Along the Bear Lake Road corridor, this bus will transport tourists to various attractions and loop walks.

## **Solutions about local government management**

Tourism-related information should be disseminated by local governments via a few promotional policies. The preparedness of enterprises, residences, and hotels/restaurants for fire and explosions must be routinely assessed. To safeguard the safety of tourists, the local authorities must ensure that hotels and motels lack suitable fire and explosion prevention equipment. To prevent future deterioration of Chua Xu's scenery, the local authorities must address and prevent any act of paper burning in prohibited areas. The local authority is required to organize tours of various areas. Organized tours will prevent a singular concentration, hence boosting the number of tourists who visit. According to tourists, the local government has not collaborated with the community to organize tourism-related events. The government must install more tourist information signs and strengthen security measures. It is also crucial for local governments to disclose the prices of various commodities and the costs of various services. In addition to signboards, posters, and



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billboards that inform visitors about what Sam Mountain has to offer, it is necessary to educate tourists about their role in preserving the Sam Mountain ecosystem.

## Conclusion

Based on 116 questionnaires evaluated by locals, it can be concluded that there are six major factors that influence the development of sustainable tourism on Cam Mountain: (1) local economic development; (2) environmental pollution; (3) security order status; (4) satisfaction; and (5) the management of local authorities. Most previous studies (Kaowen et al., 2018), Oladeji (2017), Md Shahzalal (2016), Mohammed (2007), Maria (2020), Dalia at el (2021), Tuan & Rajagopal (2019), Kattiyapornpong at el (2018), UNWTO (2013), and Euromontana (2011) have focused on three environmental, economic, and socio-cultural factors for sustainable tourism development. This study found that local people's satisfaction with tourists and local government management influences sustainable tourism development, as people who are satisfied with tourists and local government management are more likely to develop tourism activities, protect the environment, and preserve local traditional cultural values. Future research should analyze how people's happiness with tourism activities and local government administration have affected the development of sustainable tourism, as well as how Covid 19 has affected the growth of mountain tourism.

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## Conceptual Model for Unveiling the Causes of Inflation using Feedback Loops

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### Abstract

Inflation is not a rise in prices reducing the buying power of the people and making the life of the people miserable. It is a complex and multi-facet phenomenon that creates the negative affect on the economy if it is not tapped with the financial measures and sustainable policies. There is a dire need to design the plausible policies to control the inflation and keep it at moderate level opting the various regulatory fiscal measures and currency exchange rate. This paper deals with the conceptual model to unveil the causes of inflation using feedback structures and to explore the regulatory policies in order to control the high inflation.

The objective of this paper is to identify the underlying structures and cognitive schemes of inflationary forces and suggest the policies for building the control in rising inflation. This paper examines the causal loop diagrams with the interacting variables of various determinants of inflation and keep on searching the control parameters to make the system better behaved.

Conceptual model is the proposed framework that provides the foundation to develop the block diagram and simulated system dynamics model for policy design using simulation software STELLA.

**Keywords:** Pakistan, inflation, feedback structures, system dynamics, policy design.

### 1. Introduction

Inflation is an economic indicator of increasing price levels. By definition, it is referred to as the increase in prices of goods and services. This does not mean that all prices are increasing though; it focuses on the persistent general increase in prices instead. One of the more common and

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frequent methods of measuring inflation is by the Consumer Price Index (CPI). CPI measures changes in consumer prices based on a basket of goods and services consumed by an average household. There are many activities and matters which influence inflation, causing it to increase and sometimes decrease. For example, the Covid-19 pandemic sent a global shock and ultimately disrupted economic growth and patterns along with inflation. Price stability is extremely important as it holds consumer purchasing power, helps lower-income individuals and leads to productive investments. For a country like Pakistan, it is important to achieve stability in price and lower inflation rates to have effective economic growth and a sustainable future.

In Pakistan many prime ministers came into power until in 2008 when the inflation rate reached an all-time high with a peak rate of 19.6% during Yousaf Raza Gillani's tenure (after he had taken over from Shaukat Aziz in the early months of 2008). The country then faced high inflation rates however, Gillani was able to work through this and bring the rate down to 11% during his time. Inflation rates fluctuated and slowly started to decrease when Sharif came in to power again in 2013, dropping to as low as 2.9%. Nearing the end of his time in power, it reached 6.7% and then 10.7% when Shahid Khaqan Abbasi took over. Not soon later, Imran Khan was able to take control and during his tenure, the inflation rates fluctuated around 8.9% to 11.2%. So far, in 2022, the inflation rate is 10.5%, reaching double digits again. Throughout the years, governments have adopted fiscal and monetary policies like wage and price controls, however, their results have been poor throughout the years. Some governments implemented higher taxes and reduced consumer purchasing powers. In Pakistan, improving economic growth has aided in the improvement of inflation rates by decreasing them.

Globally, according to The World Bank, the inflation rates have fluctuated similar to Pakistan's rates, with a peak in 2008. Taking previous data and research papers, the objective of this study is to get a detailed insight on factors influencing inflation. These factors can include fiscal deficit, government expenditure, exports, gross domestic product, economic growth, and many more. From a global perspective, there are several determinants of the rates of inflation. According to the data collected and the graph below, inflation was overall decreasing after 2000; however, there was a major peak in 2008. Though, overall, it started to decrease and the past 10 years present lower inflation rates than the world has seen for a very long time.



*Graph 1 Inflation Rates from 2000 – 2021. Source: Worldbank.*

## 2.0 Literature Review

There have been multiple research studies into the inflation and its many aspects. The previous papers focus in depth on inflation before Covid-19 and after, analyzing the many impacts it has had on inflation over the years. They suggested that the Government of Pakistan should take proper and appropriate action to stabilize health of the entire population and implement proper monetary and fiscal policies for protection against high inflation (Amjad et al., 2021). Multiple other research papers have been done with look into the historical aspect

of inflation, the importance of monetary and fiscal policies, causes of inflation and much more.

(Agha & Khan, 2006) is another example of individuals who researched and were able to produce a detailed document on fiscal imbalances and inflation in Pakistan. They establish the fact that inflation is mainly due to unsustainable fiscal deficit – shortfall in government's income as compared to its spending – which helps identify the main influencer of inflation.

(Driffill et al., 1990) provided an insight on estimating the net costs of inflating as well as the importance of assessing the costs of policies implemented to reduce inflation, with evidence. Their conclusion was limited to central banks stabilizing inflation rate to the highest degree that they can. Previous studies have also established several determinants of increasing inflation rates: government purchases, real GDP growth, wage rate and many more.



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(Shah et al., 2014) focus on the determinants of inflation and the relationship between these two variables. Determinants can include money supply, government expenditures, exports, gross domestic products and many more. The paper concluded that increasing the factors also increasing CPI, creating a risk for economy. Furthermore, they went on to list several measurements the Government of Pakistan can take to fight this including controlled strategic planning, reduction in government borrowing, controlled government spending and a few more.

(Elahi, 2017) concludes in her paper on the determinants of inflation that the stability of exchange rate and lower inflation in the economy in the long run; thus, highlighting the need to introduce policies regarding exchange rates. The study also concludes the possibilities of supply side factors being the main determinants of inflation and thus, only being controlled through fiscal measures. Elahi also found that liberalization programs from the 1980s weren't efficient enough.

(Ahmed et al., 2018) analyze exports, imports and inflation in Pakistan. They conclude with the results of exports declining in Pakistan over the past years with the intention of highlighting the need to take measures to improve the situation of exports. This would be beneficial in improving inflation over the nation. It's also suggested that the government reduces unnecessary taxes on exports and rather focus on incentivizing foreign investors for local investment.

## 2.1 Key Terms

### 2.1.1 Money Supply

(Shah et al., 2014) use the concept of money supply as a determinant of inflation. They define money supply as the entire stock of currency and other liquid instruments in a country's economy of a particular time which can be in the form of cash, coins and much more. They paper concluded that an increase in determinants of inflation further increases CPI inflation as well. (Elahi, 2017) also discusses the determinants of inflation highlighting that money supply can have a negative impact on inflation. (Saleem et al., 2013) discuss how some economists believe that inflation can be a term given to the expansion of money supply.

### 2.1.2 Currency Exchange Rate

(Elahi, 2017) concludes in her paper on the determinants of inflation that the stability of exchange rate and lower inflation in the economy in the long run; thus, highlighting the need to introduce policies regarding exchange rates. Exchange rate is the value of one currency for the purpose of its conversion to another. The current exchange rate of a country is the value it holds at a particular time. (Yang & Zeng, 2015) proposes to define real currency exchange rate as the nominal exchange rate adjustive for relative purchase power, subjecting it not the currency but to the cost of living between two economies relatively. It states the importance of exchange rate by it being an indicator





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of economic growth of a country. It further goes on to discuss how the volatility of exchange rate has impact on international trade (Ali et al., 2013).

### 2.1.3 Fiscal Measures and factors

Fiscal measures usually work with monetary policies together to accomplish full employment, high economic growth and stability. There are several factors to fiscal policies including expenditure, revenue mobilization, deficit containment and the determining of fiscal transfers from higher to lower levels of the government. Elahi (2017) concludes the main determinants of inflation can be controlled through fiscal measures. In 1970, current account deficit and government fiscal policy have string interlinkage. Fiscal policy pushes up domestic demand for goods and services that increases load on the current account deficit. From a different angle, it causes to enlarge the gap between investment and saving. If this gap is backed up from creation of money in spite of financing from external sources, inflation will be amplified. (Ministry of Finance, Pakistan, 2017) establish effective fiscal policy also played a key role to anchor the inflation.

### 2.1.4 Monetary Measures and factors

(Ali et al., 2013) discuss the major objectives of monetary policies which include controlling price levels and reducing the levels of unemployment along with how policy variable and factors are used to achieve these objectives to increase economic growth; factors include interest rates, money supply and more. They discuss monetary policies in detail, also stating how in Pakistan, this type of policy is formulated to achieve price stability and to stabilize the domestic and external value of the currency. (Khan & Saqib, 2011) established monetary variables as M2, credit and fiscal balance which show a positive relationship with inflation (Ministry of Finance, Pakistan, 2017). It establishes effective monetary policy played a key role to anchor the inflation in Pakistan.

### 2.1.5 Unemployment

(Shah et al., 2014) define unemployment as the condition in which individuals seeking jobs remain unhired. (Shahid, 2014) discuss how economic growth is affected by inflation and unemployment in Pakistan, defining unemployment as the situation in which people are unable to find work when actively seeking for a job. Ali (2013) discusses how one of the objectives of monetary policies include the reduction in the levels of unemployment.

### 2.1.6 Interest Rate

(Zaman et al., 2014) Define nominal interest rates as rates which are considered before inflation is taken into account, (Saleem et al., 2013) while discussing the possible reasons of inflation in Pakistan, increasing interest rates were brought up which can be defined as the cost of borrowing



money. There is a need to investigate how multiple factors can influence volatility in exchange rate, establishing that increase in interest rate raises inflation also increasing exchange rate volatility (Ali et al., 2013).

### 2.1.7 Fiscal Deficit

Fiscal deficit can be defined as a shortfall in government's income as compared to its spending or the condition when government expenditure exceeds its revenue of a year. (Agha & Khan, 2006) documented in detail about the fiscal imbalances in Pakistan, noting down its main cause as unsustainable fiscal deficit. Fiscal deficit directly relates to inflation (Shah et al., 2014). Fiscal deficit and GDP growth in Pakistan, concluded that fiscal deficit does affect economic growth adversely along with stating its reasons (Fatima et al., 2017), one of them including that persistent deficit in balance of payments.

### 2.1.8 Wage Rate

Hernández & Muñoz (2018) define wage rate as the price of labor-power. Wage rate has been established as one of the determinants of inflation (Driffill et al., 1990) There is a need to investigate empirically the relationship between inflation and unemployment. It establishes that increasing demand for labor causes increase in wage rate which is paid by producers to the laborers and ultimately increases the cost of production, causing inflation (Mangnejo et al., 2020).

### 2.1.9 Gross Domestic Product (GDP) Growth

(Shahid, 2014) define Gross Domestic Product as the value of final goods and service which were produced within the boundaries of countries during the time period of one year. (Shah et al., 2014) It's highlighted that inflation directly relates to GDP. Research reveals different levels of inflation and their impact on different sectors and their growth (Chaudhry et al., 1970). Some results present stability in the growth rates of GDP while some present that an average of 13.41% or higher hurts average growths of manufacturing, GDP and services sectors.

### 2.1.10 Taxes

Taxes can be defined as monetary value or percentage placed on a good or service which can be potentially done to reduce consumption. Study discusses how the removal of unnecessary taxes on exports would improve inflation levels (Ahmed et al., 2018.) Research depicts how Pakistan may have high levels of inflation due to increasing taxes (Saleem et al., 2013). Inflation has directly related to tax revenues (Shah et al., 2014).



### 2.1.11 Exports

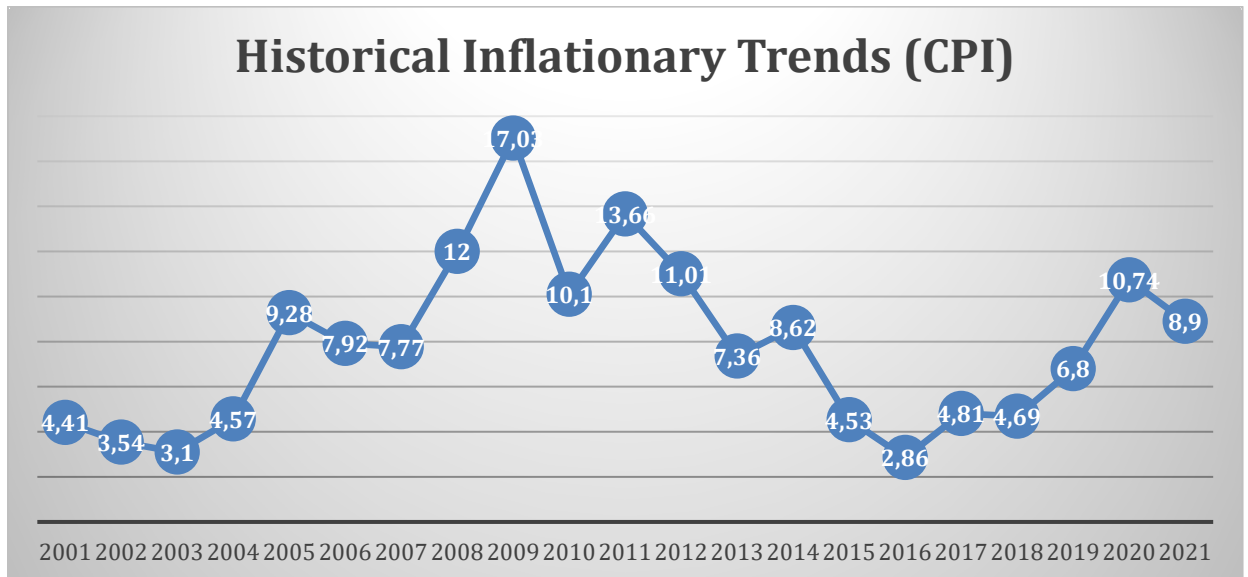
Shah(2014) defines exports as the goods and services produced locally and sold abroad. state that according to that according to the variance decomposition analysis (VDA), exports had the highest innovation influence on CPI inflation out of three total indicators (Ahmed et al., 2018). It has been re-investigated the relationship between economic growth and exports, also taking a look at the question of whether strong economic performance in export-led or growth-driven (Hameed et al., 2012). They stated how most developing countries have strongly focused on export promotion strategies since the 1970s.

### 2.1.12 Imports

Shah (2014) defines imports as the goods and services produced abroad. discuss exports, imports and inflation, stating that a 1% increase in exports and imports can cause up to 0.63% and 0.57% increase in CPI inflation correspondingly (Ahmed et al., 2018). Pakistan economy, stating its openness to foreign trade (Ali et al., 2013). Due to this, domestic inflation cannot be protected by external factors. Thus, variation in imports has an impact on inflation.

Many others which are can also contribute like

- a) Expected output
- b) Per capital Income
- c) House hold earning
- d) Oil prices
- e) Food support programs
- f) Disruption in supply chain
- g) Weather conditions
- h) Govt. policies to protect one sector
- i) Credit on agri products
- j) Conducive macroeconomic environment and policy framework
- k) Print too much currency notes (paper money)
- l) Borrow money from outside
- m) Enhance taxation
- n) Smuggling
- o) Hoarding of many stocks' holders



**Graph on Historical Inflationary Trends of the last 20 years. Source:  
Economic Survey of Pakistan.**

### 3.0 Research Methodology

System Dynamics is a multidisciplinary research methodology for designing the sustainable and plausible policies through simulation software. System Dynamics is a computer-aided simulation technique that addresses the complex, non-linear, time-delayed, feedback-dominant and dynamic models of various disciplines. (Yusuf and Azhar, 2017). System Dynamics has the capability to handle complex, multi-disciplinary and interacted models (Forrester, 1961). System dynamics is the good combination of control engineering, feedback control theory and organizational theory to study complex social, economic and business problems.

of System Dynamics, Jay Forrester (1980) defines system dynamics as a methodology that starts with important problems, comes to understand the structures that produce undesirable symptoms, and moves on to finding changes in structure and policy that would make a system better behaved

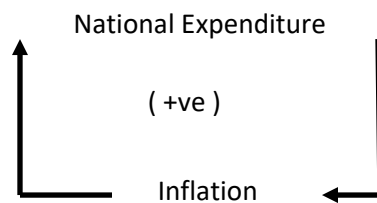
### 4.0 Model Structure and Feedback Loops

The system dynamics model can be developed after on the basis of mental model that is the representations of the reinforcing loops and balancing loops. Model is combination of reinforcing

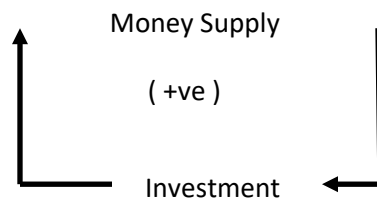
and balancing loops and behaviour generated is the results of interactions of these loops (Lane, 2007)

Model structure is based on positive feedback loop and negative feedback loop.

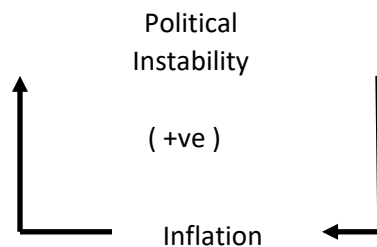
**The reinforcing loops are:**



**Figure 2: National Expenditure and Inflation Loop**

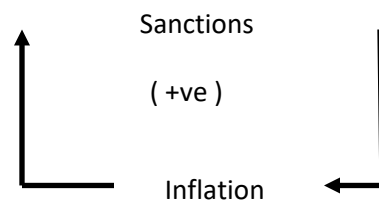


**Figure 3: Investment and Money Supply Loop**

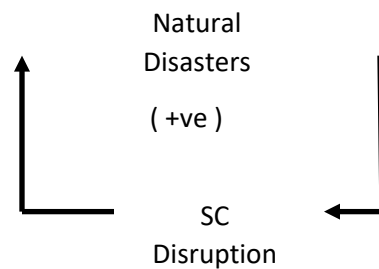




**Figure 4: Political Instability and Inflation Loop**



**Figure 5: Sanctions and Inflation Loop**



**Figure 6: Natural Disasters and Supply Chain Disruption Loop**

Figure 2 represents the positive relationship between interconnected variables inflation and national expenditure. This is a positive loop in which both variables re-enforce each other. High national expenditure indicates that lavish spending of the government ultimately ends up the high inflation.

Figure 3 shows the relationship between investment and money supply, increase in one variable brings increase in other.



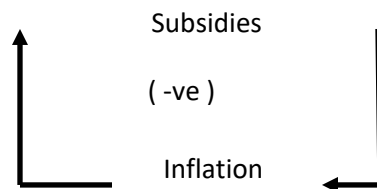


Figure 4 Political instability in any country is one of the major sources of enhanced inflation. Disorder, chaos and polarization in country may lead to high political disorder and consequently is the cause of rise in inflation.

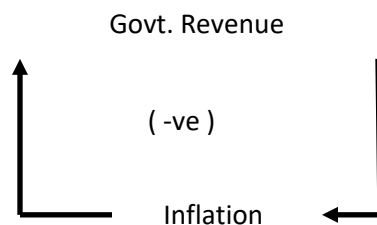
Figure 5 Sanctions imposed by the superpowers on any country devalue the currency of the country. Export and import restrictions end up the high inflation.

Figure 6 Natural disasters like earthquakes, floods and Pandemic COVID-19 can disrupt the supply chain not only locally and internationally. Reinforcing loops or positive loops reflect the vicious cycle and depict the run-away growth

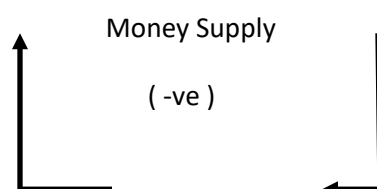
**The balancing loops are:**



**Figure 7: Subsidies and Inflation Loop**



**Figure 8: Govt. Revenue and Inflation Loop**



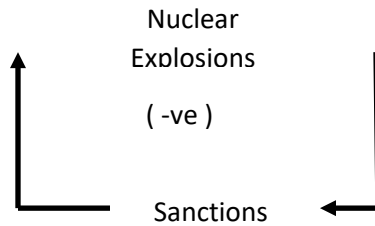


Inflation

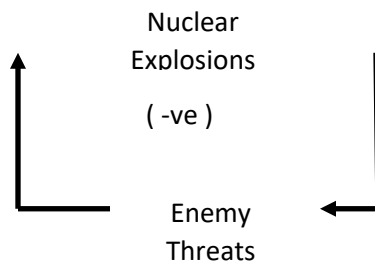
**Figure 9: Money Supply and Inflation Loop**



**Figure 10: GDP Growth and Inflation Loop**



**Figure 11: Nuclear Explosions and Sanctions Loop**



**Figure 12: Nuclear Explosions and Enemy Threats Loop**



Figure 7 describes the relationship of two variables subsidies and inflation. Figure 7 indicates the balancing loop or negative loop government subsidies basically protects the poor farmers and brings stability in the economy.

Figure 8 Government revenue is the result of government good governance and plausible policies. That brings the balance and maintains the equilibrium state of inflation. Both variables inflation and government revenues have indirect relationship with each other. Increase in one variable is reciprocal to other.

Figure 9 Money Supply is a key variable that significantly affect the inflation. Supply of money by any means contributes in the reduction of inflation.

Figure 10 Enhance exports and increase in the income of the government increase the GDP of the country that contributes in the reduction of inflation.

Figure 11 and Figure 12 shows that enemy threats compel the nation to go for nuclear explosion and nuclear explosion ignite the super powers and impose the sanctions that ultimately affect the inflation.

## 5.0 Policy Analysis and Conclusion

While unveiling the underlying feedback structures there are many control variables that propose the entry points for the policy design and policy interventions. Followings are the few proposed policies.

- a) Maintain stability in Currency Exchange Rate by all means either you have to inject money or maintain artificially or playing the WAR economy.
- b) Mitigate the factors which cause disruption in supply chain.i.e focus on infrastructure and hurdle points that are the source of supply chain disruption.
- c) Reduce the foreign borrowings
- d) Bring cut in government expenditures
- e) Increase employability in various sectors of economy, manufacturing, service, agricultural and entrepreneurial ventures
- f) Reject the moves of all political leaders who work for political instability
- g) Reduce the imported items wisely and keep on searching alternative materials to reduce the import bill
- h) Encourage the local vendors and manufactures to develop and produce local materials in substitution of imported materials as we did in COVID-19 period.
- i) Eliminate tax on e-entrepreneurs working on Upwork, fireworks etc.



- j) Enhanced Per capital income
- k) Control the supply side factors in economy
- l) Strengthen the structural adjustments programs (Ellahi, 2017)
- m) Efficient Fiscal measures

## 6.0 Limitations and Future Research

This paper basically is the mental model address the underlying structures of the inflation process. The research focus of positive and negative feedback loops whose interactions cause the various modes of behaviors (Yusuf, 2022). The limitation of this research is the plausible policies based one experiential information and conceptualizing the entry points for control of inflation. This conceptual model is a foundation stone to develop the system dynamics model and simulate the results using some simulation software like STELLA, VENSIM, or DYNAMO. Simulated behavior of the model with the reference mode and historical behavioral pattern will validate the model structure and provide a good base for policy design and policy interventions.

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## **Factor Affecting Perceived Benefits from Adoption of International Financial Reporting Standards (IFRS) in Textile Sectors of Pakistan**

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### **Abstract**

The adoption of International Financial Reporting Standards (IFRS) is an important issue around the world as companies seek consistency, reliability, and comparability in their financial reporting. In this regard, there is extensive literature on the adoption of IFRS in industrialized versus developing countries. Therefore, this study examines the factors influencing the IFRS implementation in the textile sector in Pakistan. To conduct this research, hypotheses were developed based on current research to determine whether factors such as level of education and training, cost of adopting IFRS, and professional bodies impact the perceived benefits of IFRS adoption. We used a sample of 122 textile enterprises in Pakistan. The results reveal that all criteria have a significant impact on the dependent variable, and should not be disregarded when applying such standards. Thus, it is suggested that related supervisory organisations provide adequate training, hold accessible lectures and workshops for staff, and lower the cost of hiring external specialists.

**Keywords:** IFRS, adoption, textile sector.



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## 1. Introduction

Various reporting and accounting practices exist in many countries worldwide, reflecting their social, cultural, economic, and political characteristics (Deng, 2013). Because of the disparities in accounting methods and financial reporting, users may find it challenging to compare financial and accounting reports from different nations.

As a result, high-quality accounting systems, transparency, standardization, and comparability are essential. For this goal, the International Accounting Standards Board (IASB) set up the International Financial Reporting Standards (IFRS) framework of accounting practices (Ayalew, 2018).

The IASB is a non-profit organization comprised of experts with substantial experience in accounting standard creation, financial statement preparation, and accounting and auditing education. Officials from the IASB are in charge of publishing and developing IFRS standards, established in April 2001 in London, England, to replace previous accounting standards known as the International Accounting Standard Committee (IASC).

In addition, the IASB is in charge of drafting, issuing, and withdrawing any accounting standards that are part of the IFRS version (Hossain, Hasan, and Safiuddin, 2015). Due to the minimal studies conducted in Pakistan, there is a research gap compared to developed countries. (Ayalew, 2018).

Because Pakistan is a developing country. To close this gap, we are researching IFRS adoption in Pakistan's textiles sector and the factors that determine how the benefits are viewed, such as education and training levels, the cost of IFRS implementation, and professional bodies. Furthermore, it is also noted that the accounting and education backgrounds are far different between developing and developed countries, where accounting is a more evolved profession with more exact regulations (Ayalew, 2018).

As a result, it is essential to look at concerns in developing countries to raise awareness about international financial reporting standards and the issues surrounding their implementation in Pakistan.

This study aims to determine the effect of education and training levels on perceived benefits associated with adopting IFRS in Pakistan's textile sector, investigate the influence of professional bodies on benefits perceived from IFRS adoption in Pakistan's textile industry, and explore the impact of IFRS implementation costs on benefits perceived from IFRS adoption.

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## 2. Literature Review

According to Zaman Mir and Shiraz Rahaman (2005), institutional legitimization is one of the important aspects influencing IAS acceptance. Mohammed, Ahmed, and Ji (2017) claim that the relationship between directors and politicians negatively impacts corporate governance. Ayalew (2018). Adds that the education level, a country's location and history, a company's size and complexity, grasp of accounting skills, the cost of IFRS adoption, language, culture, and inflation are all factors that influence the adoption process. Similarly, a study undertaken by Gyasi (2009) discovered that the capital market, external environment, and economic development are the most influential variables in IFRS adoption. IFRS experience and company self-enforcement, according to Iyoha and Jimoh (2011), are two factors that drive IFRS adoption. In this regard, this study attempted to explain how these factors, such as education and training levels, professional bodies, and the cost of IFRS adoption, influence the IFRS adoption process. The principal purpose of the IFRS is to eliminate accounting diversity, which will assist in removing barriers to cross-border acquisitions and diversifications, hence increasing investor premiums. IFRS provides investors with dependable, reliable, and comprehensive information compared to previous accounting standards (Ball, 2006). The companies follow international financial reporting standards across the board (IFRS) and the degree of harmonisation is not the same thing for every industry. There were a few exceptions to the majority of the IFRS specified degree of harmonisation being positively tested. The implication is that consumers of financial statements should first adjust for these things before comparing any aspect of the financial status( Ali,2012). According to Babil(2018), the inadequate corporate governance, poor quality of education and training, lack of support from accounting professional bodies, insufficient regulatory body enforcement, insufficiency of the transition period, inappropriate planning, nonavailability of transparent market information, high implementation costs, and limited management support are the primary obstacles to private banks in Ethiopia implementing IFRS. In addition, International Accounting Standards (IAS) and International Financial Reporting Standards (IFRS) have been developed that are accepted by several countries. to examine the process of issuing International and Indian Accounting Standards, the necessity for worldwide accounting standard harmonisation, and the significant differences in financial statement presentation between the two. The common accounting system, which is seen as reliable, transparent, and fair by investors all across the world, is a significant benefit of harmonising accounting standards. The ease with which the parties participating in cross-border mergers and acquisitions can redraw their financial statements would help to enhance cross-border mergers and acquisitions(Das and Das,2014). According to Deng,(2013), China should take steps to strengthen its capability for IFRS adoption so that it can adjust to the fact that the IFRS is already spreading over the world as a single set of high-quality global accounting standards.



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According to Wubetie (2018), IFRS adoption will increase the accuracy and efficiency of financial reporting. International investors are attracted to reliable and precise information because it reduces risk (Abel, 2001). IFRS aids firm management by improving information for decision-making and increasing cross-border investment promotion (Wubetie, 2018). Another advantage of IFRS is that small and medium-sized investors can compare themselves with professionals since they have access to reliable data and information, lowering the risk for small and medium-sized investors, according to Ball (2006). IFRS promotes comparability and reduces the cost of data and trouble in general. We suggest the following hypotheses:

H1. Individuals who receive training and acquire knowledge significantly impact their perceptions of the perceived benefits of IFRS adoption.

H2. There is a significant relationship between IFRS adoption and professional bodies.

H3. There is a significant association between the benefits perceived from IFRS and the cost of IFRS adoption.

## 3. Methodology

### 3.1 Sample and data collection

This research uses a quantitative research methodology, a cross-sectional research design, and deductive methods. Furthermore, the study's target demographic is Pakistan's public limited firms in the textile sector. To determine the size for sampling, all companies are selected using the census method, and an adopted questionnaire is used to collect data from relevant officials such as finance officers, directors, and accountants in Pakistan's textile sector who are familiar with IFRS practices, with 99 questionnaires being completed and returned.

### 3.2 Model selection

The regression model is as follows :

$$IFRS_i = \beta_0 + \beta_1 TEL_i + \beta_2 PD_i + \beta_3 CSI_i + \epsilon_i$$

Where:

IFRS<sub>i</sub> = Benefits attributed to the implementation of IFRS,



$\beta_0$  = The slope, known as the regression coefficient,

TELi = Level of Education and Training,

PDi = Professional bodies,

CSLi = adoption cost on IFRS while

$\epsilon_i$  = is the residual that follows a normal distribution.

### 3.3 Methodology

The data is then analyzed using SPSS V23 and Eviews. The dependent variable of this study is the benefits perceived from IFRS adoption (IFRS). The independent factors include education and training level (TELi), the cost of IFRS implementation (CSLi), and professional bodies (PDI). Additionally, correlation analysis, reliability analysis, and regression analysis are used to examine the effects of attributes such as education and training level, the cost of IFRS implementation, and professional bodies on perceived benefits from IFRS adoption.

## 4. Results

### 4.1 Descriptives Statistic

Table 1 demonstrates that the Cronbach alpha values for all variables are more than 70, indicating that the data is credible overall.

**Table 1 Reliability analysis**

Variables	Cronbach alpha
TELi	0.834
PDi	0.900
CSLi	0.761
IFRSi	0.883

### 4.2 Correlation Matrix





According to Table 2, the association is examined using three explanatory variables, demonstrating a significant positive relationship between the independent variables (level of training and education, cost of IFRS adoption, and professional bodies) and the dependent variable (perceived benefits from IFRS adoption). (PDi) and (IFRSi) had the most excellent correlation 0.458, followed by (CSLi) and (TELi) with correlations 0.464 and 0.360, respectively (IFRSi). The Table below reveals a positive overall correlation, with no negative or zero correlation.

**Table 2. Correlation Matrix**

		IFRS	TEL	PD	CSL
Pearson Correlation	IFRS	1.000	0.360	0.458	0.442
Sig. at a level of 0.01	IFRS	.	1.000	1.000	1.000

### 4.3 Discussion results

Table 3 shows that the R square is about 39.8% change in the dependent variable is caused by fluctuations in the independent or explanatory factors. The value of Durbin Watson is 1.725, which lies between 0 and 2, indicating that there is no autocorrelation problem.

**Table 3. Summary of the Model**

R <sup>2</sup>	Adjusted R <sup>2</sup>	Std. Error of the Estimate	Durbin-Watson
0.398	0.379	0.600	1.725

According to Table 4, the influence of independent factors on the dependent variable is statistically significant since  $F=20.931$  has a p-value of 0.00 which indicates that the overall current model is essential because the p-value is lower than 0.05. It is concluded that independent variables are the key elements of the dependent variable (perceived benefits from IFRS adoption).

**Table 4. ANOVA**

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Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	22.650	3	7.550	20.931	0.000
	Residual	34.267	95	0.361		
	Total	56.916	98			

The p-value for (TELi) is 0.006, (PDi) is 0.000, and the (CSLi) is also 0.000, suggesting that current factors are statistically significant at Alpha 0.01 and that there is no insignificant association among them, and therefore all hypotheses are accepted.

**Table 5. Regression Results**

Model	Unstandardised Coefficients		Standardised Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 (Constant)	-1.306	0.723		-1.806	0.074		
TELi	0.295	0.104	0.232	2.828	0.006	0.942	1.061
PDi	0.296	0.067	0.360	4.405	0.000	0.950	1.053
CSLi	0.637	0.154	0.338	4.132	0.000	0.946	1.057

## 5. Conclusion

The study examines the factors that influence the perceived benefits of IFRS adoption in Pakistan's textile industry. In other words, this study aims to investigate the effect of many factors, such as training and educational level, professional bodies, and the cost of IFRS adoption, on the perceived benefits of IFRS. Different quantitative methodologies were employed. Furthermore, the



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population for the present study comprises all publicly traded textile companies in Pakistan, all of which were chosen for sampling using a census technique. A questionnaire was used and distributed to accountants' directors and finance officials.

Results show that all variables are more than 0.7, indicating that the data is trustworthy for further study. The regression assumptions are checked using various tests such as multicollinearity and autocorrelation. According to the correlation matrix, all variables are positively connected. The regression results reveal that the overall model has a p-value of 0.00 and that all variables have a significant connection with the dependent variables with a p-value of 0.01.

According to our findings, concerning regulatory authorities are called to provide sufficient training, hold seminars and workshops for staff in an easily understandable manner, and reduce the cost of employing external consultants. In addition, to improve the perceived benefits of IFRS adoption, accountants, auditors, and financial officials who practice these standards must receive sufficient training. Professionals must take the initiative to organize various seminars, workshops, and training programs to share expertise with users of the IFRS to improve understanding.

Moreover, critical regulatory authorities such as ICAP and the securities and stock exchange of Pakistan must provide training programs, seminars, and workshops in a clear and inventive way so that the end-user can understand them and save money on outside expert services. Concerned organizations should also take more significant measures, build better rules, and give dependable tools to users to save money on staff training, software and system updates, and external technical assistance.

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## **The Study on the Emerging Trends of Social Media as a Platform for Retail Marketing with Reference to Flipkart in Mumbai City - India**

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### **Abstract**

With the Revolutionary changes taking place in the economy the importance of 24/7 operation of business, the retail store has undergone a drastic change across the world. Indian Retail Industry is expected to have a bright future & it will offer number of opportunities for development & growth. The factor which contribute to the growth of retail industry is urbanization, opportunities for investment in retail, brand conscious young population etc. As a result Indian Retail market is expected to witness a progressive trend in future as well.

Earlier Social Media was a source to interact with friends & family but now-a-days business uses social media as a communication tool to reach out customers. Globally there are more than 3 billion social media users out of them 90% are young generation who easily gets influenced by the emerging trends. Social Media has become a powerful tool for marketing due to high brand exposures. It opens an endless opportunities for brands & business to promote using social media.

Flipkart is an Indian E-Commerce based company. The company focuses on product categories such as Consumer Electronics, Apparels, Fashion, Home Essentials, Lifestyle Products etc. Flipkart uses its digital channel extensively to provide customers with best experience with their platform. The investment by flipkart in digital channel is very high as they have started working with celebrities & Influencers. They rely more on social media platform. The best part about this is that the advertising message is created in such a way that it can be used for TV Advertising as well as Online Advertising.

**Keywords:** Retail Industry, Social Media, Flipkart, Trends, Social Media Marketing





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## Introduction

With the Extreme changes taking place in the Economy the importance of the Retail sector has undergone an ideal shift. With the finding of the internet, the growth in the retail industry has been impressive due to the benefits of the economies of scale and also the expansion of business across geographical boundaries. As per the recent study, it is proven that the Indian Retail Industry is the top emerging industry in the world and is expected to reach US\$ 1.1 trillion by 2020, and Revenue generated from online retail is projected to reach US\$ 60 billion by 2020. For the Indian Economy, the Retail sector contributes around 10% of the GDP and around 8% towards total employment. Indian Retail industry is expected to have a bright future and offers numerous opportunities for progress and growth. According to GRDI reports, some favorable factors which support the growth of the retail business are: rise in fashion-loving and brand-conscious young population, extensive urbanization, and expansion of opportunities for new investment in the retail sector as a result of which the Indian Retail market is expected to witness an optimistic trend in future as well. The retail sector in the Indian context can be subdivided into Organized and Unorganized retail sectors.

**Organized Retail Sector:** The organized retail sector is registered with the government therefore it is called organized retailing. In simple words, organized retailers are the one who basically sells items to the end customers and pays Tax, GST. Organized retail is associated with customers walking into the stores for the showrooms and buying their necessary products. Huge quantities of goods are stocked up in the retail store and huge discounts which are gained by the company are passed down to the customers. Big Bazar, D- mart, Walmart are some of the examples of organized retailing.

**Unorganized Retail Sector:** These sectors are not registered with the government. It is easy to establish an unorganized retail business as there is no need to take registration in entering this sector. In simple words, unorganized retailers are the ones who don't pay tax, GST. This sector includes low-skilled businesses. There is no fixed limit on the number of working hours per day of an unorganized business. Even employees in such businesses have to work on weekends and on government holidays also. Examples of unorganized retailing are Hawkers, Pan-beedi stores, Mangal Bazar, etc. The scope of the Indian Retail Market has been seen by many retail giants and that's the reason that many new retailers are entering the Indian Retail Industry.

## Review of Literature

Over the past two decades, the internet has changed the nature of Retail Marketing and thus shopping has shifted to E-commerce shopping. Social Media has a great influence on buying behavior, customers use social media to get information on preferred products with the best price



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options. Moreover, social media is an extensively adopted platform for e-commerce. As per Amit Sharma & Sanjiv Mittal, the communication through these social media channels removes time as well as geographical barriers, thus enabling the business to aid from any location and at any point in time. This stage is crucial for B2B companies since it helps them in building relationships and thus establishing more interpersonal relationships (Fomicheva, 2015). Further (Erdoğan & Çiçek, 2012) mentioned that these social media marketing channels even help in building brand loyalty in the B2B framework. Moreover, these social media platforms provide detailed information about the customer's need, preference, etc, Accordingly, the B2B business can consider these and can alter the products according to customer requirement as increasing the livelihood of the product. According to (Mehrtens, 2013) social media marketing enables companies operating in the B2B framework to keep the track record of their competitors through their web pages and social networks. (Jussila, 2019) also supported the importance of seamless communication in the modern-day service delivery process and stated that using social media can let the company identify the process of sales and improve and maintain relationships with stakeholders.

## Objective of study

- To identify the respondent's perception of online shopping concerning Flipkart.
- To study the usage and frequently used social media platforms.
- To find out the various attitudes of online users concerning Flipkart & Other Platforms.

## Scope of the study

- Research is limited to only a small group of customers.
- Research is only confined up to Mumbai - India.

## Limitations of the study

- Due to the current scenario, it is very difficult to go out and do research personally so I tried to get their opinion through an online survey.
- Even the time limit for completing the research was limited so a detailed study of the project has not been possible.
- Besides all the points covered in this project is related to the current scenario so when the scenario changes the points covered are also subject to change.
- Due to time constraints, this project is limited to only a small group of customers & hence the opinion & other facts may differ from the point of view of other groups.



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## Research Methodologies

### ❖ Purpose of The Study

The main aim of this study was to check how many customers are satisfied with the service of Flipkart and also the product availability at the portal of Flipkart.

And also to check the emerging trends arising on social media & to study the impact on consumer's & consumers' buying behavior.

### ❖ Sources of Data

The study focuses on both Primary as well as secondary data. Primary data was collected using a well-structured questionnaire and Secondary data was collected through previous research, web information & past data.

### ❖ Data Collection Method

The methodology shows how and from which source the data or information is collected. This project is theoretical as well as practical so the data was collected from the following sources:

#### ❖ Primary Data Collection:

- Responses were collected through a well-structured Questionnaire.

#### ❖ Secondary Data Collection:

- Previous research
- Web information
- Past data.

#### ❖ Sample size

The sample size of 55 respondents was interviewed through a well-structured questionnaire. This survey conducted tried to find out the opinion of respondents concerning Flipkart, customer satisfaction, about the trends emerging in social media. This sample is drawn based on responses collected.



## Analysis & Interpretations

Table 1. How was your experience on these sites as compared to Flipkart?

Option	No. of Respondents	Percentage
Better	22	40%
Equal	26	47%
Poor	2	4%
Not Applicable	5	9%
<b>TOTAL</b>	55	100%

**Observation:** From above table, 47% feels the experience was similar or equal as compared to another E-Commerce site.

Table 2. How did you come to know about Flipkart?

Option	No. of Respondents	Percentage
Word of Mouth	10	18%
Television	6	11%
Internet	37	67%
Print Media	0	0
I haven't heard of it	2	4%
<b>TOTAL</b>	55	100%

**Observation:** Most of the respondents i.e 67% came to know about Flipkart through internet.



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**Table 3. What do you prefer buying from Flipkart?**

<b>Option</b>	<b>No. of Respondents</b>	<b>Percentage</b>
<b>Books</b>	3	6%
<b>Electronics</b>	16	29%
<b>Electrical Appliances</b>	9	16%
<b>Fancy item</b>	18	33%
<b>Stationery</b>	1	2%
<b>Beauty &amp; Health Care</b>	4	7%
<b>Music, Movies and Posters</b>	0	0
<b>I have never shopped at Flipkart</b>	4	7%
<b>TOTAL</b>	55	100%

**Observation:** As per the table, 33% prefer to buy fancy items in Flipkart.



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**Table 4. What are the other e-commerce sites you have shopped from?**

<b>Option</b>	<b>No. of Respondents</b>	<b>Percentage</b>
<b>Snap Deal</b>	0	0
<b>Fashion &amp; You</b>	0	0
<b>e-Bay</b>	0	0
<b>Homeshop18</b>	0	0
<b>Infibeam</b>	0	0
<b>Amazon</b>	40	73%
<b>Myntra</b>	10	18%
<b>I don't shop online</b>	5	9%
<b>TOTAL</b>	55	100%

**Observation:** As per the table, 73% are more inclined towards Amazon.





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**Table 5. How Often Do You Shop Online?**

<b>Option</b>	<b>No. of Respondents</b>	<b>Percentage</b>
<b>More than once in a month</b>	15	28%
<b>Once in 1-2 Months</b>	20	36%
<b>Once in 3-6 months</b>	12	22%
<b>Once in 7-12 months</b>	4	7%
<b>Never</b>	4	7%
<b>TOTAL</b>	55	100%

**Observation:** Out of 100%, 36% shop once in 1-2 months, followed by 28% of the population who shop more than once in a month.



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**Table 6. Frequency of using Social Media Account?**

Option	No. of Respondents	Percentage
Once in 1-2 Months	11	20%
Once in 3-6 months	2	4%
Once in 7-12 months	1	2%
Daily	41	73%
Never	0	0
<b>TOTAL</b>	<b>55</b>	<b>100%</b>

**Observation:** As per the figure it can be easily stated as 74% of the population are daily users of Social Media.

**Table 7. Fastest growing social media platform according to you?**

Option	No. of Respondents	Percentage
Facebook	6	11%
Instagram	29	53%
Twitter	1	2%
Snapchat	0	0
Youtube	5	9%
Pinterest	0	0
Whatsapp	13	24%
All of the above	1	1%
<b>TOTAL</b>	<b>55</b>	<b>100%</b>



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**Observation:** 53% feels that Instagram is the fastest growing social media platform.

**Table 8. Which E-Commerce Portal you prefer while shopping?**

Option	No. of Respondents	Percentage
Amazon	29	53%
Flipkart	11	20%
Myntra	6	11%
Snapdeal	0	0%
e-Bay	0	0%
All of the above	9	16%
<b>TOTAL</b>	<b>55</b>	<b>100%</b>

**Observation:** As per the data most of them prefer Amazon over other E- Commerce Portal.

**Table 9. What are the reasons that deter you from shopping online?**

Option	No. of Respondents	Percentage
You are insecure about paying online	5	9%
Concerns regarding quality of product	33	60%
Lag time between payment and delivery	3	5%



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I love shopping outdoors	6	11%
I like to feel the products physically before buying	5	9%
I do not shop online	3	6%
TOTAL	55	100%

**Observation:** The reason that deter the respondents from shopping online because they love to shop outdoors, they don't believe in the concept of shopping online.

**Table 10. What do you think which one is more convenient?**

Option	No. of Respondents	Percentage
Using E-commerce Platform for shopping	39	71%
Traditional Marketing	16	29%
TOTAL	55	100%

Observation: As per the figure, 71% considers E- Commerce platform convenient for shopping.

## Steps taken by Flipkart to improve their online services

- By Focusing on product assortment, offering attractive prices, and delivering products faster.
- Flipkart offered a significantly better web and mobile app browsing experience.
- Retained its status as the most recalled brand in e-commerce.



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- Also cut down its product delivery time.
- Flipkart has increased its budget spend on digital marketing considerably.
- Flipkart started solving the concerns and complaints effectively through their social media channels.
- Flipkart made sure to take care of the ecosystem that drives their main business.

## Findings

- The majority of respondents came to know about Flipkart through the internet.
- Most of the respondents preferred to buy fancy items over Flipkart.
- The average age of social media users was ranging between 18-20 to 20-25
- The majority of the respondents feel that Instagram is the fastest growing social media platform.
- Most of the population prefer Amazon over Flipkart.
- As per the response, most of them feel using an E-Commerce platform for shopping is more convenient.

## Suggestions & recommendations:

- Flipkart is performing well but, there are cases when people felt that it offers fewer discounts as compared to another E-commerce site.
- The company needs to improve its networking so that it can tap a large number of customers.
- Improve employee retention
- Discounts should be offered to grab more customers.

## Conclusion

This research is significant to analyze the impact of Social Media & Marketing Strategies adopted by E-tailers. The detailed research on the topic has led to certain conclusions which are enumerated in this chapter. It is observed as the Majority of Consumers consider Social Media as an effective way of Marketing. Social media allows for effective two-way communication between customers and e-tailers. It is also observed as consumers are more attracted to Online shopping as compared to Traditional Marketing. The quick spread of information, positive or negative through social media can have a lasting effect on the perception of a brand or product. As per the study, Instagram is the most effective tool of marketing which taps the



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right group of audiences and making the ads more appealing so that more and more audience are attracted towards them for socializing product information.

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## Innovative Data Driven Analysis of Water Management for Effective Agricultural Practices

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### Abstract

**Objective** – To measure, investigate, analyse variables and factors that influences water resources management as used in the agricultural sector, and how water management techniques, systems, decision making processes can be optimized for a more efficient and effective water-agriculture-food nexus.

**Methods**– Using current and historical real world data from validated open source data stores; analysis was carried out on agricultural, socio-economic, demographic, geo-climatic, gender, wireless technological factors and variables; that influence available and needed water capacity for farming ( $W_c$ ) in selected African Countries and Globally. The methodical and data-driven analyses were carried out using Analytics, Machine Learning and Wireless Cooperative Communications algorithms.

**Results** – The available and needed water capacity for farming ( $W_c$ ) was calculated and predicted using factors and independent variables of real world data that were shown to influence  $W_c$ , and that were statistically measured and analysed. Time based, qualitative, quantitative, predictive, simulative, clustering, statistical data analyses confirmed that available water resources, socio-economy, demography, agricultural factors, Gender diversity & inclusion, Climate Change and Wireless Communication technologies; can influence water availability and water management for agriculture.

**Conclusion** – Modern data-driven, cost effective analytical processes can be used to productively analyse and develop strategies, processes, systems and technologies for innovative, efficient and effective water management for improved agricultural practices and a sustainable environment



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**Keywords:** Water management, Agriculture, Food Production, Data Analysis, Machine Learning, Wireless Cooperative Communication, Innovative, Women, Climate Change

**Tools:** MS Excel, R, Python, MATLAB.

## 1. INTRODUCTION

All over the world, the issue of food security has been in the fore front of the campaign for sustainable development. Experience and news received from all over the world reveals that food security is dependent on effective agricultural practices. This also implies that areas with food shortages in the world would be required to step up agricultural production in the face of ravaging desertification caused by excessive draught and in the daunting face of global insecurity. The challenge of food security necessarily suggests that global water management strategies need to be looked into in the light of improving agricultural development in sustainable manner. This is important to ensure year-round food production in areas with excessive dry season which includes Sub-Sahara African nations. Cameira and Pereira (2019) [41] identified land and water as primary determinants of agricultural output calling for an innovative approach to land and water governance. Similar challenges have been identified by A. Inocencio, Sally and Merrey (2003) [4] while providing an overview into the use of innovative approaches to agricultural water use for improving food security in Sub-Saharan Africa [52]. The World Bank, Food and Agricultural Organisation have at different times made similar calls for improvements in water management techniques, policies, strategies, systems, technologies globally to aid effective agricultural practices and ensure food security in the midst of challenges such as the reality of climate change. Hence, the Innovative Analysis and Management of Water Resources for Effective Agricultural Practices has become a global concept. The concept seeks to foster effectiveness of global water resources management practices to enhance food production. It also seeks to design and promote a coordinated strategy for the development and management of water, land and related resources, to maximise agricultural yield. Therefore, the increasing challenge of modern agriculture meeting up with the production of food for the continued increase in global population, in the context of the ever-growing competition for water and land, climate change, drought, anthropic water scarcity and less participatory water governance; requires urgent and a thorough approach for the good of humanity. For a data-driven world of ours, innovative measures to analyse and recommend effective and efficient water management techniques and approaches becomes relevant and would help overcome challenges associated with field study; by providing cost effective, efficient, intelligent and safer measures to ensure better decision making for more effective water management policies to increase agricultural output efficiency and environmental sustainability. Therefore, innovative issues and measures must be applied in agricultural water management and practices for both field and system, to mitigate water scarcity, increase



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environmental friendliness and the welfare of society, and thereby increase food production. The aim of this research work is to investigate and analyse factors and techniques that influences and aids water resources management, as used in the agricultural sector; and how water management techniques, systems, technologies, processes, policy decision making can be optimized for a more efficient water, agriculture and food nexus; with the use of data analysis, algorithms, machine learning methodologies and simulation tools.

## 2. LITERATURE REVIEW

Agriculture and Water Agriculture is critical for food security and economic growth in developing countries, and it is the primary source of income for three out of every four impoverished people on the planet (Wheeler and Kay, 2011) [66]. Food production, on the other hand, demands a lot of water. Agriculture takes 70% of all water from rivers and aquifers around the world. North Africa, South Asia, and the drier portions of Sub-Saharan Africa are among the regions where physical water scarcity is already serious (SSA). One of the most important concerns that humanity faces today is water scarcity. Over 1.4 billion people live in water-stressed river basins, with 3.5 billion predicted by 2025. Furthermore, more than 20% of the world's rivers dry up before they reach the sea (World Research institute, 2003). Existing literatures (Ochoa Velasco, Aznar, and Lopez, 2022) [45] divide water management elements and impediments into three categories: institutional, technical, and socioeconomic. Barriers include: a lack of regulation and widespread noncompliance with existing laws; the current land ownership structure and concentration of water use rights; and a lack of technical expertise about the suggested changes; a lack of environmental awareness among farmers; a shortage of rainfall. Moreover, the main facilitators are (i) the existence of institutional incentives for the adoption of sustainable practices; (ii) the sector's continuous process of technological innovation; (iii) farmers' positive attitude toward technological change; (iv) collaborative relationships between the various actors; and (v) the sector's financing capacity. Feizabadi and Gorji (2018) [21] used a factor analytic technique to examine the factors affecting agricultural water management in Iran from the perspective of irrigation professionals. According to the authors' findings, the most important factors affecting agricultural water management are conserving modern irrigation equipment, promoting farmers' knowledge, creating a watercourse (surface water collection), prohibiting the drilling of new wells, and educating the effectiveness of pressurized irrigation systems. In addition, Jha, Kaechele, and Sieber, (2019) [30], performed research-employing survey data from 701 smallholder farmer households to better understand and identify the elements that significantly influence the adoption of water conservation measures in Tanzania. They stated that incorporating individual, household, socioeconomic, and farmer attitudes related variables explained the adoption of water conservation practices by smallholder farmer households in Tanzania. Furthermore, the study discovered that an integrated approach to studying water conservation technique adoption better explains the adoption decisions, opportunities,



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and restrictions that farmers experience at the household level, allowing for targeted agricultural management at the household level. According to the review, 120 farmers (17.12 percent) embraced water conservation practices, and farmer views of rainfall insecurity, household wealth, and food security are all important. Irrigated agriculture is the primary source of freshwater withdrawals, accounting for over 70% of global withdrawals. Irrigated agriculture has increased agricultural production and helped to stabilize prices, allowing the world to feed its rising population. Non-agricultural water demands are rapidly increasing, as are shifting dietary tastes, global climate change, and new biofuel production demands. The rising costs of producing new water supplies, soil deterioration, groundwater depletion, increasing water pollution, the destruction of water-related ecosystems, and inefficient use of previously produced water supplies all exacerbate the challenges of growing water scarcity for agriculture (Rosegrant, Ringler and Zhu, 2009) [51]. Another study by Samian, Mahedia, Saadi, Movahedi (2014) [54] was done to investigate the factors affecting optimal management of agricultural water in Hamadan's area. Authors used questionnaire and interview techniques to collect data from 148 farmers and they tested the reliability of their methods they used for data analysis. The finding of their study revealed that factors affecting the optimal management of agricultural water were institutional and legal factors, technical and knowledge factors, economic factors and social factors.

## Wireless Sensor Networks

Wireless sensor networks (WSN) are typically composed of nodes, which are distributed thickly and are able to sensor, pick up and transmit signals and information [24, 28]. The enablement of information to be captured is the core function of WSN's, using a set of sensors able to communicate with each other and process data inside the network itself (processing in-network) in order to do a specific set of tasks which cannot be done by humans due to their inherent limitations and physical survival conditions [23]. Additionally, the WSN can also be applied where there is ongoing need for environment monitoring (for example agriculture) and control and in tasks that would demand too much time and resources if manually done [1, 26]. This way, many applications like agriculture, electronic commerce, animal tracking and industrial activities, need their data to be available at real time. This real time concept is characteristic of applications which transactions must satisfy their deadline, so as to allow that data may be handled without losing its temporal validity. This enables the system to react in an efficient way, due to the obtained data correctness and consistency [48].

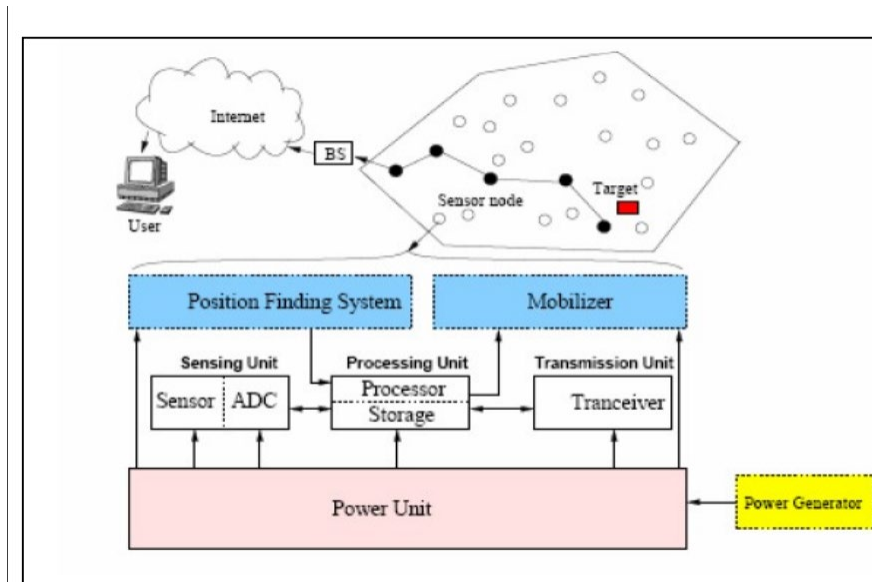


Figure 1: WSN Sensor Node General Structure [19].

### Wireless Cooperative Communications

The method of cooperative communications, involves the creation of spatial diversity through an array of single antenna users combining to produce a 'virtual MIMO' system. The principle basically involves a user/node and its 'partner' node/mobile sending independent copies of the user's information to the destination (base station) at a given time [6, 7], to create a diversity called 'cooperative diversity', with the aims of improved overall performance and reduction in overall energy consumption; this therefore means that the baseline transmit power of the users/nodes will reduce as each user/node would need to transmit with a lesser power to achieve a target performance criterion. Therefore, users/nodes share their antennas and other resources to create a 'virtual MIMO' or spatial diversity system through distributed transmission and signal processing [33], thereby each users/nodes acts both as a source and a relay of information [ 2 ], unlike earliest works which was modelled according to the basic 'relay channel', where each user or node just forwarded or re- transmitted the signal it received , but not having its own signal to send; thereby assuming a 'memory-less' relay channel of which cooperation may not be possible when relay channel is poor [60].



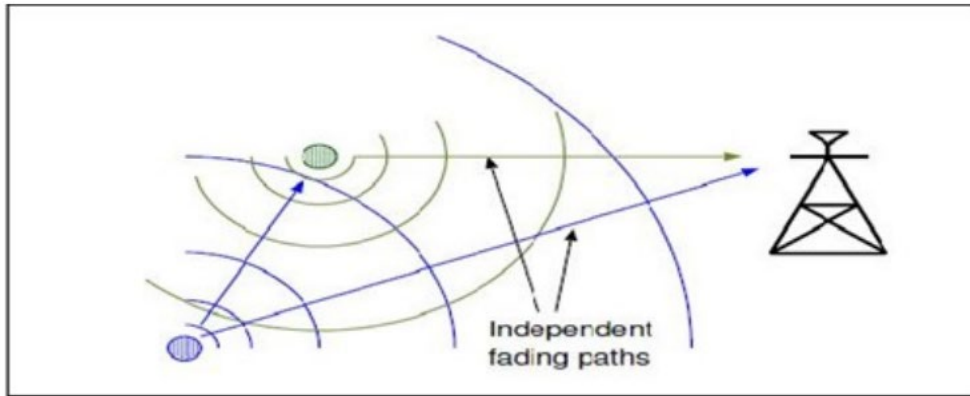


Figure 2: Cooperative Communication [ 2 ]

Work thus far generally considers that the users/nodes transmit equal power, but it could be possible to improve performance by varying user/node power based on the nature of the inter-user/node channel; therefore, this makes power control schemes an important factor in developing effective cooperative communications [ 2 ]. On Energy efficiency, it has been shown that both users/nodes in a two- user system obtain improved energy efficiency, saving a significant amount of energy through cooperation, though 'weaker' (lesser power) users/nodes benefit more than the 'stronger' (more power) users/nodes during cooperation [2, 8, 59 ]. Also, much work has been done at the physical layer, at which cooperative methodologies are quite different from other higher protocol layers [2, 17, 65]. Furthermore, for reduced complexities and ease of analysis, most works have assumed mutually independent inter-user and uplink channels [2 , 58], a perfect channel state information (CSI) at all receivers (users/nodes and base station) [8 , 14 , 20, 31], [29, 53]; though this may not always be the case practically, as the wireless channel could vary unpredictably; this of course has been considered by some works, where a feedback mechanism is used in the uplink transmission to address an imperfect CSI situation [61]. Additionally, works also analysed the MIMO techniques for cooperative communications based on a two user/node system [6, 29, 53, 59], that is to say each user just having one partner, this was also aimed at simplicity to avoid more complex algorithms for accurate partner assignment which is important in a much more practical multi –partner system; and also a Rayleigh flat fading wireless channel type was assumed [6, 40, 53]; which is typical for a 'non – line of sight' (NLOS) system as in cellular wireless networks.

### 3. METHODOLOGY



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Existing literatures (Ochoa Velasco, Aznar, and Lopez, 2022) divide water management elements and impediments into three categories: institutional, technical, and socioeconomic. Barriers, which includes a lack of regulation and widespread noncompliance with existing laws; the current land ownership structure and concentration of water use rights; and a lack of technical expertise about the suggested changes; a lack of environmental awareness among farmers; and a shortage of rainfall. Hence, in our study we will conceptualize factors identified by existing literatures and that have varying impacts on water management with respect to effective agricultural practices. This research study is very much data driven, as it involves the synthesis of extensive agricultural, geo-climatic and demographic data relevant to the literature from diverse databases and portals. The analysis was carried out in two broad sections of Factors and Techniques respectively that influence water security and water management in agricultural practices. The research activities revolved around the various data analysis, data analytics involving statistical social science terminologies, data science and Machine Learning processes to carry out the necessary studies and obtain results. In addition to the theoretical and practical concepts and parameters already known; new metrics are derived to capture and measure and confirm key tests and analysis. Furthermore, for such various methodical analyses; data acquisition, data cleaning, data wrangling are among key preliminary steps to ensure that the required data is importantly used for such analysis, following the key important steps: • Step 1 : Acquire data from validated open access data stores and live data web portals • Step 2 : Clean the data, label it appropriately, wrangle it and make it fit for purpose • Step 3: Store the data and partition them accordingly for use • Step 4 : Feed the data into the particular analysis tool, model and process as required. • Step 5 : Prepare and specify how results will be reported.

3.1. Research Process Flow The research activity carried out in addition to data acquisition and associated process, is summarized by the flowchart in Figure 3.1.

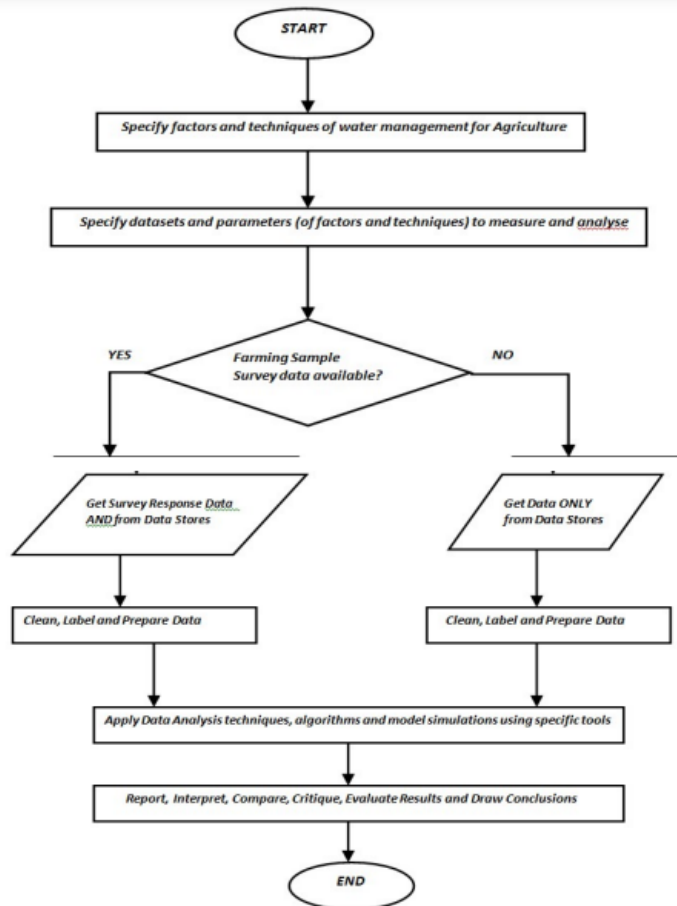


Figure 3: Summarized Research Process Flowchart

### 3.2 Factors influencing

Water management for agriculture Evidences have shown that for effective modern agricultural practices, adequate analyses should take into account influencing factors categorized as physical, agricultural and socioeconomic factors that act as drivers in the management of water resources as used in agriculture [22]. These factors are highlighted in the literature and must be properly investigated and analysed to ensure an efficient management of water resources for effective agriculture, since water is a limited resource and modern agriculture has to face the increasing scarcity of water for irrigation, as a result of the reduced availability and the increasing competition of civil and industrial sectors [39]

**Physical Factors** These include climate conditions, geological situations, soil types, hydrological conditions, and all other physical geographic conditions unique to an environment (for example aquifer conditions and underground water levels) that influences how water is used and management for effective agriculture.

**Agricultural Factors** As also explained in the literature, these includes irrigations systems and methods, crop section techniques, groundwater



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levels, use of effective technologies (for example wireless systems) and automotive systems and water body availability. Socioeconomic Factors These are factors that influence water management/security for agriculture from a social, economic and political aspect, which is also very critical to develop effective and efficient water management strategies. Such drivers include water policies and laws, population and farmer population distributions, farmer profit, agricultural revenue, market prices (including cost of production using various systems). Conditional Factors These are factors that are not directly measured but act as catalysts to water management results and processes for effective farming; and so must also be understood for more robust effective strategies. Such factors could be farming expertise and processes, fertilizers/chemicals, diversity/inclusion, management strategies and political will.

### 3.2.1 Conceptual Model of Influencing Factors

Considering the drivers or factors that influence water management for effective agriculture, certain measurement metrics for our analysis are derived and defined to specifically define how water is used for agriculture and how it can be managed and decision making processes can be optimized for more efficient water, agriculture, food nexus. From the literature and earlier described principles, we build a conceptual framework to describe and analyse the link between the (dependent variable): Available and Needed Water Capacity for Farming per Region/Country (WC) (i.e. a regions/area/country available amount of water (both ground and surface) per population) and the key factors (independent variables) affecting water management for effective and efficient agriculture. These independent variables are : Amount of Rainfall per Region/Country(mm)(VAR1), Population(VAR2), GDP per capita(USD)(VAR3), Arable land area (m<sup>2</sup>) (VAR4) , Agricultural annual revenue (VAR 5), Agricultural Irrigation, water technology and fertilizers costs (VAR 6) , Amount of Ground and Surface Water per Region/Country (VAR 7) and Amount of Water Demand/Use for Agriculture (VAR 8). By incorporating these independent variables, a more robust predictive model for WC can be obtained which can aid effective and efficient policy decision making and resource forecasting.

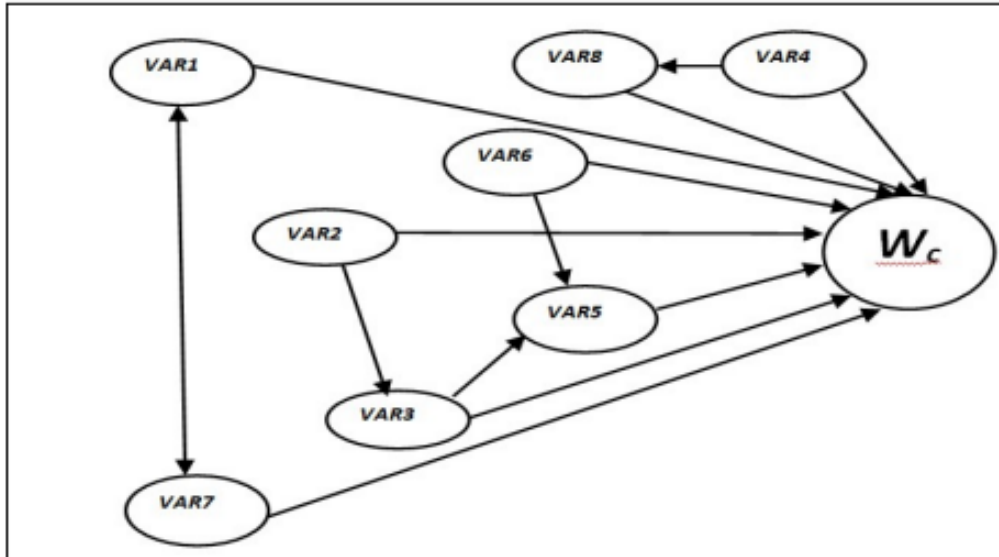


Figure 4: Conceptual Model for Needed Water Capacity (WC) for Farming.

3.2.2 Research Questions and Hypothesis Having established a good theoretical background and link between the factors that influences water management for effective agriculture and the amount of water available for farming in a given region; we then built a model on how all these connect and carry out analyses. We then want to test how these factors influence the Available and Needed Water Capacity for Farming per Region/Country (WC) or amount of water available for farming in a given region as a key metric for effective and efficient agriculture via optimal water management. Our research questions and accompanying hypotheses are thus: Q1: Can the amount of water available and needed for farming in a given region be determined or measured and/or predicted? Hypothesis 1(H1): Available and Needed Water Capacity for Farming can be measured and also predicted.

Q2: Is Available and Needed Water Capacity for Farming for Region/Country affected by other factors aside amount of Ground and surface water available?

Hypothesis 2(H2): Internal factors or independent variables within a Region/Country can positively or negatively affect how much water capacity for farming is available.

Q3: Which of the factors most influences how much water is available and needed for Farming?

Hypothesis 3(H3): Some factors have greater influence than others on the Available and Needed Water Capacity for Farming in a region/Country.

3.2.3 Statistical Analysis



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For a robust and thorough analysis which forms the objectives of this research work, additional statistical analysis that affects the social scientific aspects of this research is carried out to further investigate how these socioeconomic and conditional factors directly and indirectly influences the Available/Needed Water Capacity for Farming per Region/Country (WC). The important Statistical Analysis and associated parameters for this research work are briefly described in relation to their specific derived typical hypothesis tests for such Analysis: Descriptive Statistics This is to confirm the validity of our data and how the values obtained for each factor considered is relevant and adequately describes the data. From Mean, Median, Skewness, Kurtosis and Deviation values; these are to effectively analyse and describe our datasets. Reliability Statistics This statistical test is used to mainly determine how reliable set of data is and how available or measurable such datasets are. From the KMO and Bartlett's tests, to the Cronbach Alpha Tests; these reliability statistics parameters are important in social science to determine how reliable obtained datasets are for a valid scientific experimentation. Cronbach Alpha is a coefficient of internal consistency is commonly used as an estimate of the reliability of a psychometric test for a sample of examinees. Reliability is met when Cronbach's alpha of a latent construct is 0.70 or greater [44]. A Typical Reliability research question is: Q1a: Are all the variables or influencing factors measurable? Hypothesis 1a(H1a): All variables can be accurately/acceptably measured Hypothesis 1b(H1b): None of the variables can be accurately/acceptably measured Hypothesis 1c(H1c): Some variables can be accurately/acceptably estimated.

Correlations, Variable Normality, Multicollinearity Are statistical assumptions that will first be examined to investigate statistical relationships between variables and how these variables influence and affect other variables.

Pearson Correlation A Pearson product-moment  $r$  correlation is conducted to assess the relationship between variable 1 and variable

2. Pearson  $r$  correlation is a bivariate measure of association (strength) of the relationship between two variables. Pearson correlation analysis assumes that the variables have a linear relationship with each other [16]. A Typical Pearson Correlation research question is:

Q2a: Is there a statistically significant relationship between each or some of the variables?

Hypothesis 2a(H2a): There is a statistically significant relationship between all of the variables

Hypothesis 2b(H2b): There is a statistically significant relationship between some of the variables.

Hypothesis 2c(H2c): There is no statistically significant relationship between all the variables

Exploratory Factor Analysis (EFA) An exploratory factor analysis will be conducted to determine the factor structure of variables. Exploratory factor analysis identifies any underlying relationships among a set of scale variables. This iterative procedure is repeated until all requirements are met. A Typical EFA research question is:

Q2b: What are the underlying dimensions of the variables?

Hypothesis 2(H2d): The EFA model adequately depicts the variables.



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Hypothesis 2e (H2e): The EFA model does not adequately depict the variables.

### 3.3 Techniques for effective water management in agriculture

Though while also recognizing that the utilization of technologies and techniques to aid water management and water security for agriculture is only part of the solution; it's very much pertinent to understand these technologies/techniques and the methodical analysis of their impact and how they can be optimized are important for the development of efficient water management activities for effective and productive agricultural practices. From irrigation technologies, to water saving technologies, crop specific water saving techniques/technologies, ICT based and Wireless technologies; these are the more common types of important water management technologies that contributes to effective agriculture and aids associated analysis, needed to continually improve or develop even newer technologies that apply new processes and techniques for an even more efficient water management methods for effective agriculture in the context of the ever-growing competition for water, climate change, drought and other forms of demographic, societal and climatic challenges. For this data-centric research work, emphasis is on using some data analysis, Machine Learning and Wireless technology algorithms and techniques to analyse water management/security processes for effective agriculture and to meet the challenge of how to incorporate innovative technologies and management approaches in decision making and long term water management policy making to increase and optimize agricultural output and processes with lesser resources and maintain environmental sustainability [35].

#### 3.3.1 Mathematical Analysis for Optimal Water Management in Agriculture

For this mathematical approach to water management/water security analysis; the focus is to be able to water resources can be efficiently used for agriculture and how farmers' optimal economic gains can be measured and monitored with respect to water used for effective agriculture. The analytical background for this is described:

By Applying the Integral Theory of Calculus:

$$V = \int_a^b A(x) dx$$

(3.1)

Where V is the Volume or Capacity of water that can cover a cross-sectional farm area of land for a unit Crop ( $c = 1$ ) (where other factors affecting water source remains constant). Let the crop farming cross-sectional area of land that lies between  $x=a$  and  $x=b$ . Let the continuous function  $A(x)$  represent the cross-sectional area of the farm section of land in the plane through the point  $x$  and perpendicular to the  $x$ -axis.

Therefore, The Total water capacity or volume of water (VC) needed by a crop ( $c$ ):





$$VC = c \cdot V \quad (3.2)$$

Then for a Multi Crop Farm, having crops ( $c_1, c_2, c_3, \dots, c_N$ ) occupying farm areas ( $A_1, A_2, A_3, \dots, A_N$ ) respectively; the total volume of water for  $N$  number of crops ( $VT$ ) is defined as:

$$VT = Wc = (Vc_1 + Vc_2 + Vc_3 + \dots + Vc_N) + RVc_N \quad (3.3)$$

Where  $RV$  is the adequate volume of rain (where other factors affecting water source remains constant) needed by  $N$  crop(s) and  $Wc$  is the water capacity or needed water volume in a farm or region.

Furthermore, The total volume of water or water capacity available in a farm area ( $W_v$ ) is defined as:

$$W_v = W_c + W_w \quad (3.4)$$

Where  $W_w$  is the volume of wasted water (that can be stored) not needed by  $N$  crop(s)

For water efficiency  $W_{EFF}$ , which is a measure of the efficient use of water in a farm by  $N$  crops, while other factors remain constant is defined as:

$$W_{EFF} = Wc / W_v \quad (3.5)$$

$$\text{Then: Farmers-Water-Agric-Profit } (P_{WA}) = R_A - X_{(Wc)} \quad (3.6)$$

Where  $X_{(Wc)}$  is the total cost (including cost of irrigation, associated technologies, etc) of producing the water volume or needed water capacity by the farm and  $R_A$  is the total revenue from Agriculture for a farm or region or country.

### 3.3.2 Simple Moving Average (SMA) Time Series Forecast

Time series is a collection or sequence of observations recorded at regular time intervals, which may have hourly, daily, weekly, monthly or even annual frequency of observations. Time series analysis is about understanding aspects of the nature of the series, so as to create meaningful and accurate forecasts with the information from the series.

Assuming an additive decomposition, then we can write

$$y_t = S_t + T_t + R_t \quad (3.7)$$

Where:  $y_t$  is the data,  $S_t$  is the seasonal component,  $T_t$  is the trend-cycle component, and  $R_t$  is the remainder component, all at period  $t$

### 3.3.3 Multivariate linear Regression Model

The multivariate machine learning (ML) model using Python programming language was incorporated for the dependent variable to be determined using the independent variables. The



Regression model is chosen, as it is evident that the factors or variables changes linearly with time change. A multivariate ML regression model is defined by the equation:

$$Y = m_1X_1 + m_2X_2 + m_3X_3 + \dots + m_NX_N \quad (3.8)$$

Where: Y is the dependent variable values matrix;  $m_1 \dots m_N$  are the coefficients (weightings) of the independent variables values (X matrices).

### 3.3.4 K-Nearest Neighbour(KNN) Algorithm

k-Nearest Neighbors (KNN) is a supervised machine learning algorithm that can be used for either regression or classification tasks. KNN is non-parametric, which means that the algorithm does not make assumptions about the underlying distributions of the data. To perform the algorithmic procedure, we choose  $k$ , which is the number of nearest neighbours, and  $p$  is the number of classes or number of data columns.

Where:  $k = \sqrt{Nt/2}$  ;  $Nt$  = Number of training data.

Also, k should be an odd numbered value and must not be a multiple of the number of classes. The distance between the sample data points is described as the Minkowski distance ( $D_m$ ) is calculated using the formula:

$$\left( \sum_{i=1}^n |x_i - y_i|^p \right)^{1/p} \quad (3.9)$$

Where: where  $X$  and  $Y$  are data points,  $n$  is the number of dimensions, and  $p$  is the Minkowski power parameter.

### 3.3.5 Grey System Analysis

A grey system means that a system in which part of information is known and part of information is unknown. For real life scenarios where the meanings of the criteria are different and there exists much difference among the values of variables/or factors observed; the fixed weight clustering method is applied in such a situation.

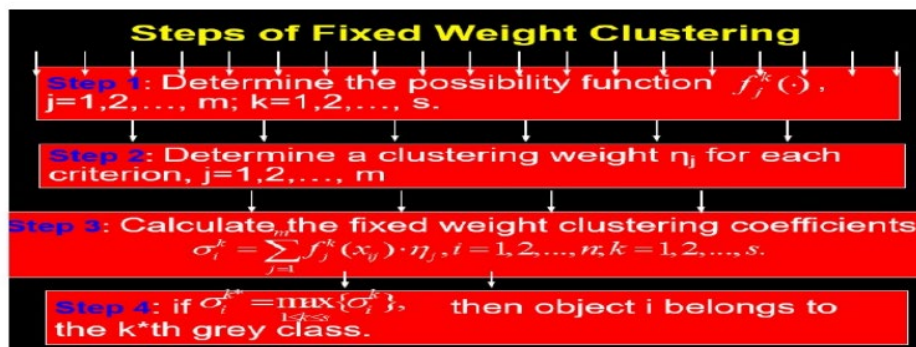


Figure 5: Fixed Weight Clustering Algorithm of Grey System Analysis.

### 3.3.6 Hybrid Relay-Cooperative Wireless Sensor Network System

For the hybrid relay - Cooperative system as shown in Figure 3.4, it is a combination of a multi – hop relay system and a two sensor nodes(i.e. source N and cooperating node N C) cooperative wireless system.

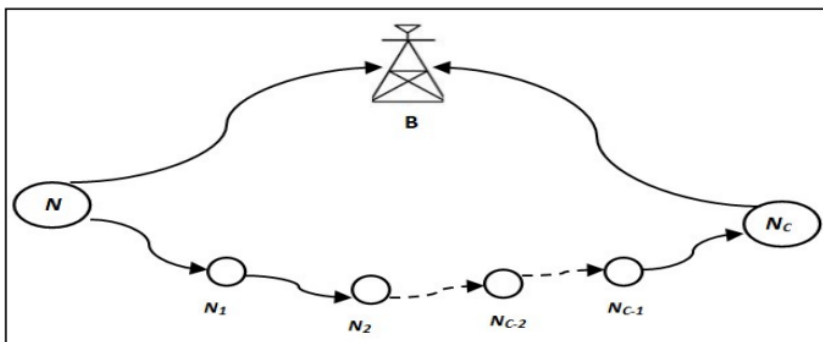


Figure 6: Hybrid Relay-Cooperative Wireless System

In this case as shown in Figure 3.2, there are relays:  $N_1, N_2, \dots, N_{C-1}$  between the source transmitting sensor  $N$  and the 'last relay' which is the cooperative node  $N_C$ . This system is suitable for a case where the sensor nodes can access geographical data, and so the cooperating sensor node is selected based on its location, needed to provide effective cooperation to the source sensor node. The sensor nodes between the source node and the cooperating node act as relays (limited intelligence and communication resources) of the signal by forwarding hop by hop the signal from the source to the cooperating sensor node, which then sends the signal to the Base Station (Sink Node)  $B$ , where it is combined with the direct signal from the source to the destination, and then the resultant signal is effectively detected by  $B$ , thereby benefiting from cooperative communication. The base station then transmits the signal via internet or cellular network to the farmer's mobile devices and intelligent information is received and acted on.

The main advantages of this system are that it reduces the need for extra hardware and communication resources all around the farm or field, due to the use of less complex relays used to hop signals and a limited number of processing nodes (source and cooperative). This thereby makes the system more cost effective, energy efficient and environment friendly. The cooperative



communications MIMO (Multiple Input-Multiple Output) technique of Amplify and Forward (AF), which involves each relay and/or cooperative node amplifying the received signal and then forwarding it to the Base Station; while the Decode and Forward (DF) algorithm involves the relay and/or cooperating nodes in turn tend to detect each node's transmitted data (bits/symbols) and then re-transmitting it to the base station (destination) thereby providing spatial diversity to combat the effect of fading on each individual node's signal. For the Coded Cooperative algorithm, which involves more complexity and better performance, it is described in more details as follows:

In the first period: The source node  $N$  which is also the node closest to the intended or target area of measurement, sends its data vector  $X$  to the first relay node  $N_1$  and the base station  $B$ , with the received signals given as  $Y_{N,N_1}$ ,  $Y_{N,B}$  respectively; and  $H_{N,N_1}$  and  $H_{N,B}$  being the channel co-efficient matrices with their associated Gaussian noise ( $n_{N,N_1}$  and  $n_{N,B}$ ); as given in equations (3.9) and (3.10) respectively:

$$Y_{N,N_1} = X \cdot H_{N,N_1} \cdot \sqrt{P_N} + n_{N,N_1} \quad (3.10)$$

$$Y_{N,B} = X \cdot H_{N,B} \cdot \sqrt{P_N} + n_{N,B} \quad (3.11)$$

Also, where  $P_N$  is the Average signal power of the source node, which is normalized to 1.

At the second period: Since the relay network is actually a multi-hop system, the first relay node detects the received signal  $Y_{N,N_1}$  from the source and forwards it to the next relay node  $N_2$  as ( $Y_{N_1,N_2}$ ):

$$Y_{N_1,N_2} = Y_{N,N_1} \cdot H_{N_1,N_2} + n_{N_1,N_2} \quad (3.12)$$

So from one period to another, the relay nodes keep hoping the signal received from a previous relay node to the next relay node, until the data arrives at the last relay node (i.e. the cooperating node  $N_c$ ) as:

$$Y_{N_{c-1},N_c} = Y_{N_{c-2},N_{c-1}} \cdot H_{N_{c-1},N_c} + n_{N_{c-1},N_c} \quad (3.13)$$

Then at the final period, the cooperating node  $N_c$  detects and forwards the signal  $Y_{N_{c-1},N_c}$  to the Base Station  $B$ , as shown in equation (3.19):

$$Y_{N_c,B} = Y_{N_{c-1},N_c} \cdot H_{N_c,B} + n_{N_c,B} \quad (3.14)$$

Then the signal  $Y_{N_c,B}$  from the cooperating node  $N_c$  is then optimally combined with that from the source node  $Y_{N,B}$ , and then effectively detected. At each relay node, and also at the cooperating terminal/node  $N_c$ , the appropriate cooperative communication technique (e.g. Coded)/protocol is



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applied to combat the effects of fading, shadowing, thus processing the signal to ensure that the signal can be detected efficiently.

For the Coded hybrid relay-cooperative system, at the first period as similarly described;

the source/ transmitting node punctures its coded signal  $NT(\text{codeword})$  and sends its first part  $NT_1$  to the first relay node  $N_1$ , and the base station B. At the second period, the punctured codeword is de-punctured and decoded by the first relay  $N_1$ , and then re-encoded, punctured and sent again to the next relay node,  $N_2$ . So the source node's codeword  $NT_1$  is de-punctured, decoded and then re-encoded, by each relay node and then punctured and hopped from one relay node to another until the last relay node (the cooperating node  $N_c$ ); which is assumed to have successfully decoded the  $NT_1$   $N_{c-1}$ ,  $N_c$  parity bits from the previous relay node  $N_{c-1}$  using the Viterbi decoder. Then  $N_c$  sends the punctured (second) part  $NT_{2N_c,B}$  of the source node's codeword to the base station, where the codeword of the source node is de-punctured and then effectively combined.

For a Coded hybrid relay-cooperative system with more than one cooperative node (multi-cooperation); MRC is employed first by the base station, to combine all the several versions of the transmitted codeword  $NT_2$  from the cooperating nodes, to form one optimal second parity codeword of the source node's signal. Then the base station then carries out the de-puncturing and efficient detection using the hard decision viterbi decoder, in this case also, it must be pointed out that decoding was assumed to be successful at every cooperating user and the base station, thereby the CRC would need not to be implemented.

**Table 1. Cooperative Wireless System Parameters**

<b>Modulation Scheme</b>	QPSK	<b>FFT Size for OFDM</b>	64
<b>Multiple Access Scheme</b>	OFDMA	<b>Cyclic Prefix Size</b>	12
<b>Fading Channel Model &amp; Number of Taps</b>	Rayleigh Frequency selective fading & 13Taps	<b>Data Frame Size</b>	128
<b>Simulation Technique</b>	Monte Carlo	<b>Target Bit Error Rate (BER)</b>	$10^{-3}$

## Wireless System Figures of Merit

Bit Error Rate (BER) - The BER was used as a measure of the performance of the systems analysed, therefore it is the figure of merit used to achieve one of the targets the Hybrid Cooperative Communication system. The BER indicates the probability of bit error  $P_b$ , or how many bits are in error for a given transmission, range of available energy, and channel conditions; thereby providing a measure of the quality of data transfer.



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Therefore;

$$\text{BER} = Ne/Nb \quad (3.15)$$

Where:  $Ne$  is the number of bit errors, and  $Nb$  is the number of bits transmitted

Signal to Noise Power Ratio (SNR) - In harmony with the second key 'target' of this project work, which is Energy Efficiency described in Chapter1 of this thesis; the SNR is used as a measure of the energy (processing and transmission) consumed to achieve good quality communication at a target BER.

$$\text{SNR (dB)} = E_b / N_0 \quad (3.16)$$

Where:  $E_b$  is the energy per transmitted bit, and  $N_0$  is the noise spectral density, denoting the noise power.

So in the simulations, the ratio of energy consumed in the transmission of a bit to the noise, provides the particular SNR or rather energy consumed. Therefore, the BER vs  $E_b / N_0$  curve is a standard in this work for analysing the performance and overall energy consumption of each system model simulated.

Also, another figure of merit relating to energy efficiency is the Energy Saved, which is a measure of the overall amount of energy saved (SNR) to meet a target BER as more processing is done in the system:

$$\text{Overall Energy Saved (dB)} = E_p \text{ (dB)} - E_{PER} \text{ (dB)} \quad (3.17)$$

Where:  $EP$  is the energy spent in processing, and  $E_{PER}$  is the reduced energy spent to achieve the new improved performance.

## 4. RESULTS AND DISCUSSION

### 4.1 Descriptive Statistics of the described Independent Variables affecting Wc

**Table 2: (Data Sources: UN Statistics Division; March, 2011:**



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<b>Independent Variables (VAR) Sample (N= 266) *mio = 1million</b>	<b>Mean</b>	<b>Median</b>	<b>Variance</b>	<b>SD (Standard Deviation)</b>	<b>Max.</b>	<b>Min.</b>
Rainfall/Precipitation *mio m3_Year 2011 ( <i>VAR 1</i> )	400751.5	36489.1	1.78E+12	1334755	15333391	0
Population_Year 2018 ( <i>VAR 2</i> )	29305386	3510076	1.62E+16	127433900	1439323776	0
GDP Per Capita (USD)_Year 2018 ( <i>VAR 3</i> )	16639.66	6363.313	6.61E+08	25708.42	185978.609 3	0
Arable Land (hectares)_Year 2016 ( <i>VAR 4</i> )	5328663	297500	3.43E+14	18527500	156463000	0
Agriculture GDP (per millions USD)_Year 2017 ( <i>VAR 5</i> )	12965.5	919.5	4.52E+09	67245.61	991020	0
Investment Cost (USD)_Year 1995-1999 ( <i>VAR 6</i> )	30252767	5085816	6.46E+15	80352260	1000525651	0
Ground & Surface water amount *mio m3_Year 2011 ( <i>VAR 7</i> )	240763	14890	7.54E+11	868494.9	11194572.5	0
Agric Water Use(10 <sup>9</sup> m3 per year)_Year 2012 ( <i>VAR 8</i> )	6.868502	0.025078	897.3064	29.95507	388	0

<https://unstats.un.org/unsd/environment/waterresources.htm> ; FAO Aquasat DataStore:  
<https://www.fao.org/aquasat/statistics/query/index.html> July, 2022 & Live Web portals: June, 2022)

As shown by the obtained figures, the average value or mean value for Rainfall/Precipitation amount was about twice the amount (100%) from Ground & Surface Water volume in 2011, indicating that there was more than sufficient water source from Rainfall to the earth. Furthermore, the standard deviation values are quite high, indicating that our dataset is more spread out (globally across countries in the world) around the mean values, and this confirmed the non-necessary step of calculating the skewness or kurtosis for such a widely dispersed real life dataset taken from different years, for countries (where available ) across the world.

From the obtained data; the Rainfall/Precipitation amount which is twice that from Ground & Surface Water volume indicates that there was more than enough rainwater to replenish the water bodies in 2011. This of course implies that there was enough water for agricultural practices, which should reduce costs of water production and irrigation activities and farming in general, thereby also increasing cost food production.

Furthermore, the well dispersed nature of the datasets obtained for the years across countries globally, brings to light the variations in factors that affect water availability with respect to effective agricultural practices across different regions. This therefore, implies that extensive analysis, strategy and policy developments; as well as adequate technologies on water management in relation to effective agricultural practices; will need to also incorporate various factors and unique conditions of



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different regions, locations, countries and environments for a robust solution to the water availability challenges affecting agriculture.

## 4.2 Reliability Tests

The analysis performed was done using datasets from reliable and approved data sources, stores and portals, approved as global statistical benchmarks; so therefore, the datasets are assumed to be reliable. The Statistical Reliability Parameters are thereby not tested as they can be assumed to be valid and satisfactory. The obtained real life datasets from approved datastores, repositories and databanks; thereby supports **Hypothesis 1a (H1a)**; that indeed, all the independent variables defined can be accurately/acceptably measured; thereby indicating that Hypothesis 1a can be accepted. However, Hypotheses 1b and 1c which states that none and some the independent variables defined can be accurately/acceptably measured respectively; can be both rejected, as they are not supported by the obtained datasets.

## 4.3 Correlation and Multicollinearity Tests

### 4.3.1 Pearson Correlation Tests –

**Table 3: Correlation Statistics of Independent Variables (Pearson Correlation)**

Bivariate Test	Pearson Coefficient	Bivariate Test	Pearson Coefficient
VAR1 and VAR2	0.0187956	VAR3 and VAR5	-0.01489614
VAR1 and VAR3	0.1754243	VAR3 and VAR6	-0.01069805
VAR1 and VAR4	0.03361142	VAR3 and VAR7	0.1701069
VAR1 and VAR5	0.01036505	VAR3 and VAR8	0.08331179
VAR1 and VAR6	-0.02394537	VAR4 and VAR5	0.6457757
VAR1 and VAR7	0.9450426	VAR4 and VAR6	-0.00593164
VAR1 and VAR8	0.02152677	VAR4 and VAR7	0.02246642
VAR2 and VAR3	-0.001868821	VAR4 and VAR8	0.009673465
VAR2 and VAR4	0.8853843	VAR5 and VAR6	-0.007484429
VAR2 and VAR5	0.7668154	VAR5 and VAR7	0.02180795
VAR2 and VAR6	0.003701965	VAR5 and VAR8	-0.001304712
VAR2 and VAR7	0.01561029	VAR6 and VAR7	-0.01936273
VAR2 and VAR8	0.01855559	VAR6 and VAR8	0.1009622
VAR3 and VAR4	-0.02299219	VAR7 and VAR8	0.03406123

As shown by the obtained and analysed figures using the R statistical software; the Pearson coefficient is of the range - 1.0 to +1.0; and so the obtained values shows that there is a moderate to strong associations in the positive and negative directions between the independent variables. The highest coefficient value in the positive direction is between VAR1 and VAR, indicating a strong positive correlation between VAR1 and VA7. Also, the minimum coefficient value in the negative direction is



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between VAR5 and VAR8, indicating a very strong negative correlation between the variables VAR5 and VAR8. These correlations values also confirm the quantitative nature of the datasets in addition to their qualitative properties; and also indicate that there is a linear relationship between the independent variables as obtained and analysed.

From the obtained data and analysed results in Table 2; the high positive association value between VAR1 and VAR 7 indicates the strongest positive association/relationship between Rainfall/Precipitation amount and the amount of Ground & Surface Water in 2011, which of course is expected. This then implies for effective agricultural practices sustained by enough water availability, the balance between amount of precipitation and ground/surface water amount must be sustained and would inevitably ensure that there is cost effective water production for an effective water-agriculture nexus. On the flipside also, and as proven by climate science, any reduction in the amount of either VAR1 or VAR7 would negatively affect the other and also the volume of agricultural production. Furthermore, the most minimal negative Pearson's correlation coefficient value of the association between VAR 5 and VAR 8, indicates the strongest negative correlation between the Agricultural GDP amount and the amount of water used for Agriculture. This suggests that as the GDP accrued for Agriculture increases, the amount of water use decreases and vice versa; thereby implying that better and efficient water management (ie. using less water to achieve greater food production) would also lead to an increase in Agricultural revenue, because costs relating to water related agricultural practices will be reduced.

Additionally, the coefficient values between independent variables obtained as an indication of the relationships between the variables are classified as either statistically significant or not statistically significant, as indicated by the coefficient values within the range of -1 to + 1; with the values closer to either +1 or -1 as being more strongly correlated or statistically significant(positively or negatively). Therefore, the results obtained supports Hypothesis 2b (H2b), that indeed, there is a significant statistical relationship between some of the independent variables; thereby indicating that Hypothesis 2b can be accepted. This further suggests that certain independent variables affecting the available and needed water capacity (Wc) needed for agricultural purposes, are correlated and influence each other, and further implies that analyses, strategies, management processes and systems for effective water management or water capacity management for agriculture, must take into account influences between variables as it affects amount of water needed for effective agriculture. However, Hypotheses 2a and 2c which states that there is significant statistical relationship between all the independent variables and there is no significant statistical relationship between the independent variables respectively; can be both rejected, as they are not supported by the obtained results and tests.

#### 4.3.2 Multicollinearity Test Analysis using OLS Regression by Machine Learning

Table 4: Results of Multivariate Regression Analysis Model using OLS by Machine Learning

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Independent Variables	Coefficients	t	p> t	[0.025	0.975]
<i>VAR1</i>	0.289	7.317	0.000	0.209	0.365
<i>VAR2</i>	2.7156	0.876	0.283	-3.423	8.854
<i>VAR3</i>	1.3620	2.091	0.039	0.071	2.652
<i>VAR4</i>	-2.2539	-1.260	0.210	-5.798	1.291
<i>VAR5</i>	-0.2112	-0.584	0.560	-0.927	0.505
<i>VAR6</i>	-0.8552	-0.442	0.659	-4.688	2.978
<i>VAR7</i>	0.1534	2.570	0.011	0.035	0.272
<i>VAR8</i>	445.6320	0.792	0.439	-669.531	1560.795
97.5% Confidence Interval of parameters/coefficients (0.975)					
Durbin-Watson: 2.022		Skew : -0.579		Kurtosis : 19.755	
p : Exact probability of t [t : T value for null hypothesis]					

As shown by the obtained and analysed figures using the Python for Machine Learning Linear Regression; the Durbin-Watson value of 2.022, which is almost at the ideal value of 2; means there is no multicollinearity and further indicates that there is no autocorrelation between the independent variables. From the obtained data and analysed results briefly described; absence of multicollinearity between the independent variables, means our datasets and independent variables are statistically significant; thereby indicating that all or most of the independent variables do influence the dependent variable (Wc) whether in small, medium or large amounts. This then implies that the analysed independent variables or factors all influence and affect the available water capacity for Farming in a region, location or Country. Therefore, the results obtained supports Hypothesis 2 (H2), that indeed, internal factors or independent variables within a Region/Country can positively or negatively affect how much water capacity for farming is available; thereby indicating that Hypothesis 2 can be accepted.

#### 4.4 Exploratory Tests using a 4 factor hypothesis test analysis

Table 5: Exploratory Data Analysis of Independent Variables

Independent Variables (VAR)	Uniqueness	Loadings/Weightings			
		Factor 1	Factor 2	Factor 3	Factor 4
VAR 1	0.005		0.971	0.205	
VAR 2	0.005	0.989			
VAR 3	0.966		0.181		
VAR 4	0.005	0.924		0.367	
VAR 5	0.401	0.751		-0.142	0.122
VAR 6	0.999				
VAR 7	0.005		0.890	0.208	0.399
VAR 8	0.997				

Chi Square Stats.	Degree of Freedom	p-value	Number of Factors
4.83	3	0.0892	4



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As shown in table 4; the latent/underlying factor Loadings coefficient close to -1.0 or +1.0; indicate that the underlying factors strongly influence the independent variable; while that close to 0, influences the independent variables weakly. So from the obtained values, two underlying factors (i.e. Factors 1 and 2) more strongly affect most of the independent variables (i.e. VAR1, VAR2, VAR4, VAR5, VAR7). Also, the 5 or less value of the chi-square (i.e. 4.83) or as some scholars would prefer, the ratio of the chi-square value divided by the degrees of freedom; indicates that the sample data is a good fit whereby the values of 5 or less is a common benchmark. The chi-square value further indicates that there is a high correlation between the expected and observed values, as there is very little difference between the expected and observed values, which confirms the dataset as a good fit.

From the obtained data and results; the values of Factors 1 and Factors 2 indicate presence of underlying/latent factors affecting almost all the independent variables; meaning that among such independent variables there exists some form of underlying strong relationships. This suggests that most of the variables actually can be adequately part of the model, and there are underlying factors affecting the independent variables that influence the available and needed water capacity for effective farming, and therefore must be taken into consideration in such practical cases. Such internal factors could include soil type, and how they also influence water management and usage with respect to agricultural practices.

Additionally, the chi-square and its related degrees of freedom values, further confirm the validity of the EFA (Exploratory Factor Analysis) model as being a good fit and adequately depicts the independent variables modeled, which supports Hypothesis 2d (H2d), thereby indicating that Hypothesis 2b can be accepted. The correlation of the variables as indicated by the chi-square values, suggests that the model is a good fit and that a good number of the various independent variables influence each other, and their underlying internal factors must be accounted for and analysed to be able to develop effective strategies, systems, policies and processes for the effective management of

water needed for farming. However, Hypothesis 2e (H2e) which states that the EFA model does not adequately depict the variables; can be rejected, as H2e is not supported by the obtained and analysed results and tests.

#### 4.5 Agricultural Water Resources Profile Analysis



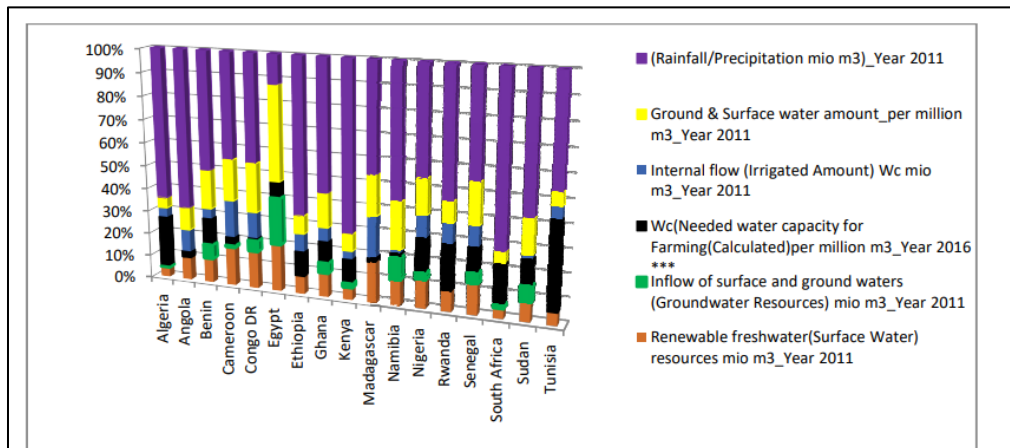


Figure 7: Agricultural Water Resources Profile of Selected African Countries ( Statistics Division; March, 2011: <https://unstats.un.org/unsd/environment/waterresources.htm>

portals: June, 2022). \*\*\* Calculated values for  $W_c$ : for 1 unit of farm crop occupying 1 unit cross sectional area.

As shown in the profile plot in Figure 7, some Countries have close to 50% of Rainfall/precipitation in 2011 and less than 20% of Ground & surface Water for the same year; and with  $W_c$  being also about the 15-20% available. As further indicated,  $W_c$  is noticeably not related to the amount of rainfall, and other water sources for each of the Countries; implying that the Needed/Available Water Capacity ( $W_c$ ) for Farming is not proportional to the amount of water source available to a region or country.

For  $W_c$ , which is a mathematical function of the amount of Arable land available; such Countries having far greater proportion of Rainfall than surface/ground water will need to innovatively harvest or store its excessive/waste rainfall to make up for such a shortfall in surface water, which may reduce in size due to so many socio geographic, economic and political factors; with such approach a cost effective and efficient water-agric food system will be optimized to perform excellently even with distortions in natural weather patterns brought about by factors including the reality Climate Change. According to the scenarios described in the IPCC Special Report on Emissions Scenarios [11, 32], changes in precipitation and temperature may lead to changes in runoff and water availability, which, in turn, could affect crop productivity [32, 43]. Furthermore, the non-proportional relationship between  $W_c$  and the water sources for

farming in a country, is one of strong interest, as it does suggest that a good number of factors including arable land measure, does influence the amount of water available for farming, which is not just about how much water sources are in a region. This further suggests, that for adequate provision of water for farming, necessary strategies, systems, processes and tools will be needed to ensure that the right amount of  $W_c$  is available for farming, because the analysis indicates to us that a region may have enough natural water sources, but may lack adequate water for effective farming due to poor water management strategies, systems, policies or even negative climatic conditions/changes; this of course further makes the effective and innovative management of water resources an important activity for effective and sustainable agriculture and food production. Additionally, increases in physical water productivity by agriculture, through better management and





uptake of more efficient technologies, such as drip irrigation and adoption of other water saving farm practices, has contributed to higher farm production. Overall the OECD average water application rate per hectare irrigated decreased by 7% between 1990-92 and 2002-04, while in most cases the volume of agricultural production increased [46, 47].

#### 4.6 Global Agro economic Profile Analysis for Female Gender Inclusion in Agriculture

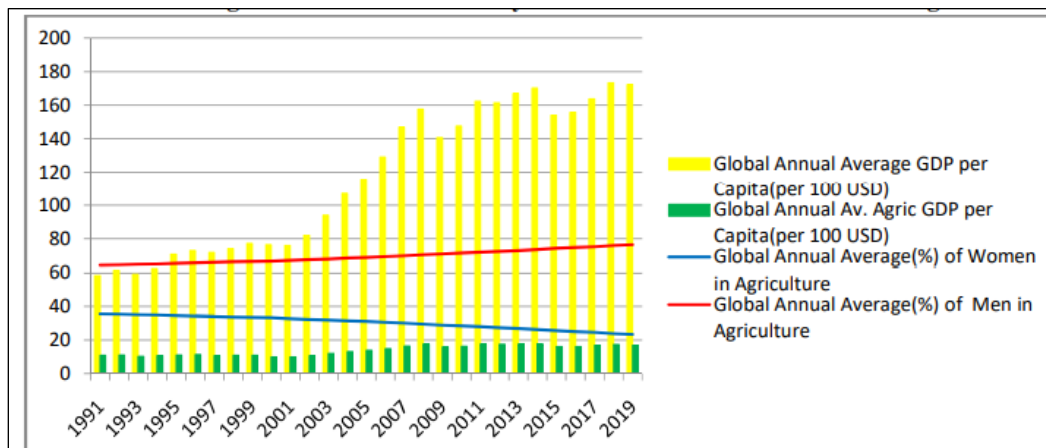


Figure 8: Global Agricultural Value and Gender Distribution (Source: World Bank Data: <https://data.worldbank.org> ) July, 2022.

The plots in Figure 8 shows a continuous decline in average Women participation in Agriculture globally, while there is an increase in average Men's participation; with noticeably close to a ratio of 3: 1 Men to Women average amount in Global Agricultural employment. This decline in Women Agricultural amount has interestingly also reflected in the average annual GDP accrued globally from Agriculture, which has also not improved for over 10 years. Furthermore, the plots in Figure 2 also indicates that for each bi-annual percentage amount of Women in agriculture, there was some slight changes in the average GDP globally from Agriculture, though the changes were minimal for some years. From the plots and analysed results; the noticeable decline in Women participation in Agriculture and the low average annual GDP from Agriculture globally can also adversely affect effective agriculture and food production in many countries globally. From such observation, it is clear that an increased Women participation or rather increased Gender equality in this sector will likely boost Agricultural revenue, thereby making countries richer and creating a more efficient and effective Food production system which will also influence the better management and processes of water resources optimization needed for effective Agriculture. Additionally, focusing on the unique challenges women face and their lack of access to resources is an important key to increasing overall agricultural productivity (Meinzen-Dick, 2010) [37]. Women are often excluded from decision-making



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and have little choice over the services they receive. They have limited access to water and this is often coupled with their limited access to land. Securing access to land among poor farmers, particularly women, can lead to secure access to water rights (IFAD, 2001) [27, 62]. Furthermore, the changes in average global GDP in agriculture over the years shown, further indicates the effect of female population in agriculture over the years and suggests that an investment to support and increase the amount of women in agriculture will create further positive changes and growth in agricultural GDP, as well as overall GDP of regions or countries globally. Furthermore, these GDP changes also suggest that additional factors like accompanying workforce of men in agriculture, availability of modern tools, equipments, systems, processes, policies and strategies; will also further positively affect and contribute to empower Women to be even more productive agriculturally and contribute to effective water management for a greater GDP in Agriculture and food productions for regions and Countries globally.

4.7 Time Series Forecasts of Global Average Annual Precipitation and Internal Freshwater, and as also affected by Climate Change

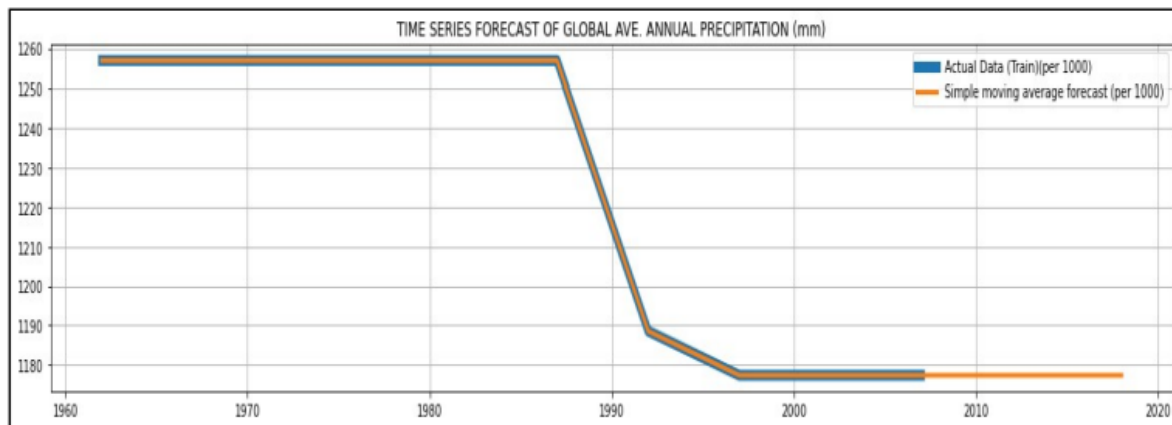


Figure 9: Time Series Forecast of Global Average Annual Precipitation (mm) (from 1962 – 2018)  
(Source: World Bank Data: <https://data.worldbank.org>) July, 2022.



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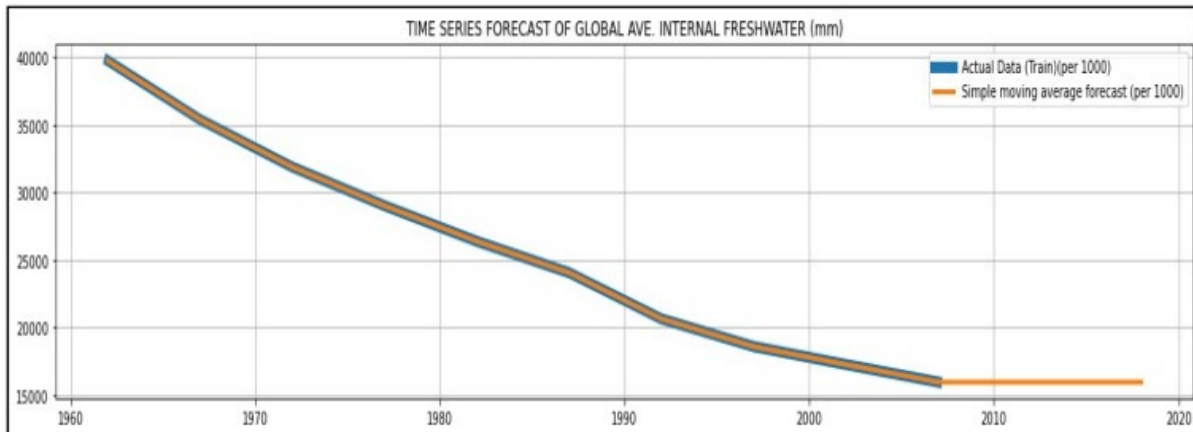


Figure 10: Time Series Forecast of Global Average Annual Internal Freshwater (i.e. Surface water and Ground water) (from 1962 – 2018) (Source: World Bank Data: <https://data.worldbank.org> ) July, 2022.

The plots in Figure 9 and Figure 10 show a steady and significant decline in the average amount of Precipitation and Internal Freshwater globally, which should be a cause for concern. Furthermore, the forecast does not indicate an increase in amount for both water sources in the near future, and the declines appears to be more pronounced and almost linear for internal Freshwater for over 10-20 years, which curiously are the major sources for irrigation Farming globally; another indication of the effect of Climate Change and the need to tackle it. Additionally, the accurately fitting time series forecasts plots of Figures 9 & 10 also indicates a good corresponding curves fit and matching of the historical and future datasets per time, as a continuous measurement of the average amount of precipitation and internal freshwater globally.

As analysed from the plots in Figures 9 & 10; the significant continuous declines in the average global amount of precipitation and internal freshwater, calls for urgent innovative water management and monitoring systems, processes and management strategies such as intelligently and technologically monitoring and harvesting water resources, saving and recycling waste water, etc; to ensure that agricultural practices are not negatively affected and the growing need of food production globally is adequately met. Furthermore, global collaborations will need to be intensified to fight Climate Change and other water reduction factors, to ensure that the adequate amount of water needed for agriculture is maintained, available and efficiently utilized to create an effective and efficient water agriculture food production nexus need by an increasing world population. Also, the well fitting time series plots, indicates that the average amount of precipitation and internal freshwater can also be predicted and continuously monitored for data-driven climate change related analysis as it relates to water management for effective agriculture, and when combined with a spatially comprehensive database of climate, crops, and GIS, simple agroclimatic indices are an inexpensive and rapid way of mapping altered crop potential for quite large areas. Applying agroclimatic indices in Africa (Badini et al., 1997) [9] has provided understanding of the relationships between the

weather, soils, and agricultural production systems and the complexities associated with their variability. Carter and Saarikko (1996) [13] describe basic methods for agroclimatic spatial analysis [3].

4.8 Prediction of Global Wc using Multivariate Linear Regression Analysis from independent variables/factors.

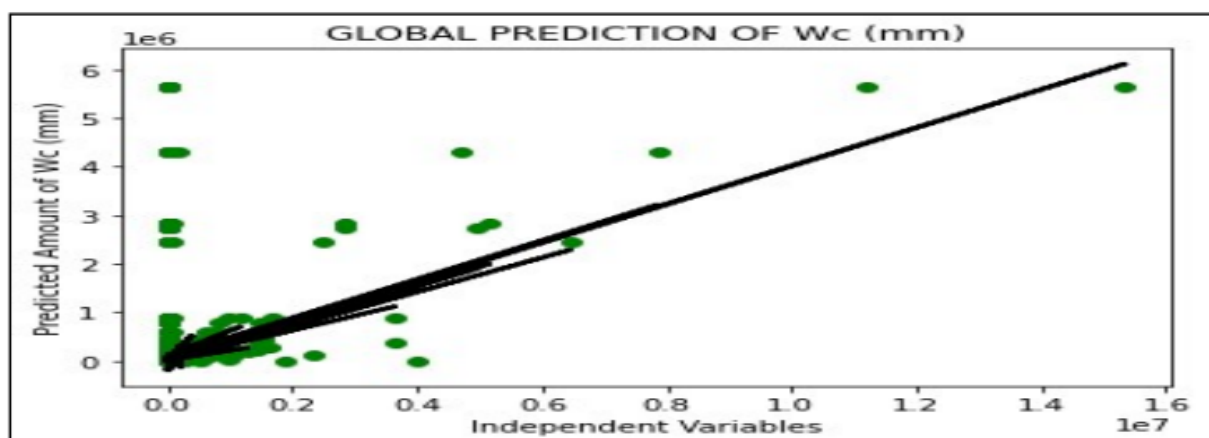


Figure 11: Predicted Global amount of Needed/Available Water Capacity (WC) for Farming using a Multivariate Linear Machine Learning Regression Model (Data Sources: UN Statistics Division; March, 2011: <https://unstats.un.org/unsd/environment/waterresources.htm> & Live Web portals: June, 2022).

4.9 Prediction of the Global Internal Flow for the Analyses of various Agricultural Water Sources using KNN Analysis from independent variables/factors.

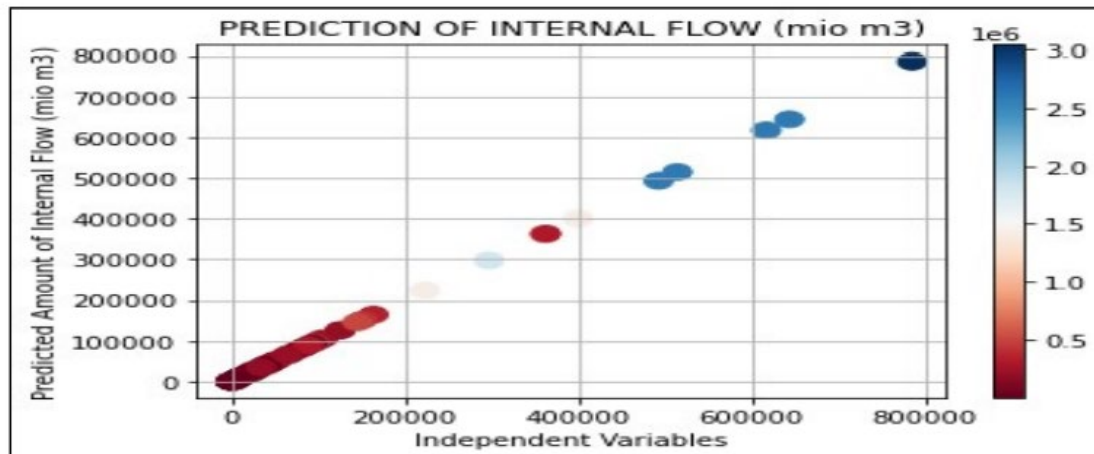


Figure 12: Predicted Global amount of Internal Flow of Water for Farming using a KNN Analysis Machine Learning Model (Data Sources: UN Statistics Division; March, 2011: <https://unstats.un.org/unsd/environment/waterresources.htm> & Live Web portals: June, 2022).

The result plot in Figures 11 is to study, analyse and predict the average Needed/Available Water Capacity (WC) for Farming Globally for a specific time period from independent variables (VAR1, VAR2, VAR3, VAR4, VAR5, VAR6, VAR7, and VAR8) as described by the conceptual model in the methodology section using the Ordinary Least Square Regression (OLS) model. Furthermore, with the aim to thoroughly analyse water sources for Agriculture; a study, analysis and prediction is also made in Figure 12 for the average Global Internal Flow of water using the KNN Machine Learning probabilistic Model from independent variables: Rainfall/Precipitation, Inflow of surface and ground waters (Groundwater Resources), Renewable freshwater (Surface Water) resources, Waste water (where mio m<sup>3</sup> is million m<sup>3</sup>) for the year 2011. These analyses are key to the development of effective intelligent processes, systems and management strategies for water management to aid effective agricultural practices.

As shown, the linear profile of both plots shows a significant accuracy of the prediction models, with an average prediction model Accuracy of 82%. Furthermore, the plots indicate the influence the two sets of independent variables have on the sets of predicted dependent variables (i.e. Wc and Internal Flow); in addition to the linear increase of these predicted values which also indicates an increased demand for Wc and Internal Flow for water as due to the expected increase in food demand globally and the need for a more effective agriculture for cost effective increased food production.

As shown in the table of values of the prediction plot of Wc in Table 4; the coefficients of the respective independent variables are shown and can be either positive or negative values, which means an increase in every unit of that independent variable will have a positive or negative impact on the dependent variable. As also shown by the p values from Table 4 for the prediction plot of Wc, some of the independent variables (i.e. VAR1, VAR 3, and VAR7) are more statistically significant than



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other independent variables of lesser statistical significance; with the most statistically significant being VAR1 (i.e. having the minimum p-value); which also indicates that any changes in the value of VAR1 will most greatly affect the value of the dependent variable (WC).

For the KNN Internal Flow prediction analysis, the model was built, as defined in the methodology with the following parameters: (K Nearest-Neighbours = 5, Number of Classes or Columns = 4, Total Data Sample Number (N) = 181, Training Data Sample size = 144); shows a f1-score of over 0.9(90%) which is very good and excellently optimal and indicates the model has done an excellent job of predicting the global average amount of Internal Flow of water giving other independent global average water sources variables (i.e. Rainfall/Precipitation, Inflow of surface and ground waters (Groundwater Resources), Renewable freshwater (Surface Water) resources, Waste water) for the year 2011. For a real life situation as this case, the f1-score is of most importance and a better metric due to the presence of imbalance class distributions which usually associated with real life datasets. Furthermore, the almost perfect alignment of the linear prediction KNN plot in Figure 12 is an indication of its precision, which has a score of 0.94(94%) which is very close to the highest or best score of 1(100%); which indicates that intuitive ability of the model not to label as positive a data sample that is negative and vice versa. Additionally, the close to perfect prediction plot is further confirmed by the recall score of 1.00(100%); which is the best and highest recall value and indicates the intuitive ability of the model to find all positive samples, which also means the ability of the model to predict positive outcomes out of actual positives. Also, a very important classification metric of the KNN predictive model if the confusion metrics shown as:

Confusion Matrix: [ [ 0 2]

[ 0 34 ]

The values of the matrix, indicates that there are only two sample negative values incorrectly predicted as positives (i.e. False Positives (FP)); and also 34 sample positive values correctly predicted as actual positives (i.e. True Positive(TP)); and no sample positive values incorrectly or correctly predicted as negatives ( i.e. TN= 0 and FN = 0). This therefore, indicates that the KNN model experienced very minimal or negligible confusion during prediction and so its prediction accuracy is very good as also indicated by the f1\_score.

From the interpreted results briefly described; For the predictions and models; estimating and/or forecasting the amount of water resources available for Farming and Internal Water flow are an important steps in the process of developing effective systems, strategies, processes and resources for effective water management to aid optimized agricultural practices with the uncertainty that financial, geo-climatic, and demographic limitations provide. This will ensure that resources are well managed and distributed for an effective water agriculture and food nexus needed especially in Countries experiencing acute water shortages or flooding that also negatively affects farmlands, and also globally.





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The multivariate linear regression method is the most commonly used regression method for a continuous datasets of independent and dependent variables, which are also common in real life; though this regression method is sensitive to noise/errors and requires a large set of complete data. The accurately acceptable prediction plot and values of WC supports Hypothesis 1(H1), that indeed the Needed Water Capacity for Farming can be measured and also predicted; which will aid better management, strategy development, design of systems, more efficient personnel and resource management needed for an optimized water management needed for effective agricultural practices. Furthermore, the predictive plot of Wc and the values obtained in Table 3; further confirm that the set of independent variables (i.e. VAR 1 to VAR8) do affect the Available/Needed Water Capacity for Farming in a Region/Country positively or negatively in accordance with Hypothesis2 (H2). This therefore, further implies that by considering factors affecting each of the independent variables and managing such factors appropriately, the Wc would be affected and thereby properly managed for better agricultural practices while also maintaining a needed sustainable environment.

For the more statistically significant variables and in particular the most statistically significant variable VAR1, and how greatly it affects the dependent variable Wc; this indicates that a variable, in this case (VAR1), can have or has greater influence on the dependent variable or rather the Available/Needed Water Capacity for Farming in a Region/Country, in harmony with Hypothesis 3(H3). Furthermore, for a further analysis, such independent variables which have a greater influence on the dependent variable can be separated from other variable and another model can be created to analyses how much such variables affect the dependent variable. All these aid adequate and effective management of water resources as some variables can be effectively tuned or adjusted while keeping other variables while keeping other variable(s) constant and thereby greatly influencing the amount of Needed Water Capacity for Farming in a Region/Country greatly in a cost effective manner without spending so much on adjusting all variables per time.

The excellent prediction plot and values of the KNN Analysis for Internal Flow also supports Hypothesis 1(H1), that the Global average internal flow of water can be measured and also predicted; which will also add to better management, deeper strategy development, design of a variety of systems, more efficient personnel and resource management needed for an optimized water management needed for effective agricultural practices. The results also indicates that the independent variables of Rainfall/Precipitation, Inflow of surface and ground waters (Groundwater Resources), Renewable freshwater (Surface Water) resources, and Waste water; do also influence the amount of internal Flow in line with Hypothesis2 (H2). This can also mean that any of the independent variables can be modeled as a dependent variable and other water sources can be analysed as independent variables, to determine the effect of variables on a particular dependent water source variable. Such flexible analysis would further enhance insights to how well water sources can be better managed, measured, predicted, and optimized to aid effective agriculture that also importantly makes use of waste water and creates an efficient water, agriculture and food nexus, that contributes to environmental sustainability as a green initiative. The KNN analysis has the advantages of being very easy to implement, faster and accepts new data seamlessly than other algorithms, because it requires no training before predictions; but it also has some cons, which are that it does not work well for categorical features due to distance calculations and larger datasets



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which will require a higher cost of more calculations during predictions. The KNN classification analysis method further aligns with our theory that such analytic data-driven approach can be carried out on a variety of water sources and water related agricultural data, which will very much aid the efficient and effective policy, strategy, systems and management developments needed to innovatively management water for effective agriculture for the cost effective and efficient production of food for the ever growing world population, limited and decreasing water resources which is under the increasing pressure of demand.

The predictive analyses are vital for the effective and efficient management of water resources for agriculture, because for climates that are humid, surface water forms the main source for irrigation; but for sub-humid and arid climates, the major source for agriculture and food production is underground water. Though generally, water for agriculture is classified broadly as either surface or underground (ground) water [25]. There is no doubt that water availability and withdrawals vary widely around the world, and with the present global water use for agriculture and food production being at about 70% of total water usage; there will sure be water availability problems as demand also rises [25]; and there will be extreme variations in water resource availability across various regions and countries to meet the projected requirement of year 2025[25]. Also, According with the Food and Agriculture Organization of the United Nations, FAO (1998) [22], demands for water for growing more food will increase causing shortages in regions that up to know are self sufficient in water resources [25]; all these indicate the need for more analytically driven water management analysis, to be able to efficiently forecast and management water resources needed for agriculture and ensure that availability problems and challenges are well taken care of.

Given these facts, it is clear that food security in the XXI century will is closely linked with water security and success in irrigation. FAO figures show that between 30 and 40 percent of the world's food comes from the irrigated 16 percent of the total cultivated land. Around one-fifth of the total value of fish production comes from freshwater aquaculture; and current global livestock drinking-water requirements are 60 billion liters per day. Forecasts estimate an increase of 0.4 billion liters of water per year for livestock consumption. The Second World Water Forum, (The Hague, October 2000), recognizes water as a scarce commodity. Its Vision Management Unit stated that supply and demand management has to go hand in hand for removing the mismatch between water resources and agriculture and food needs. To ensure a sustainable rural development "A holistic, systemic, participatory, innovative, predictive, institutional mechanisms and processes" are needed [25]. The United States Geological Survey (USGS) [63] emphasized that long-term observation-well networks are needed to provide data to monitor areas of ground-water depletion. In order to provide the information needed on large aquifers, a rotational assessment of water-level changes on these major systems should take place at least every 5 to 10 years. A Report by the Subcommittee on Water Resources, Office of Science and Technology Policy manifest that: "Assuring long-term ground-water supplies is one of the most significant natural resource issues facing the Nation today" [25].



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#### 4.10 Grey Analysis of Agriculture and Water related factors for selected African Countries per Sub region.

Table 6: Grey Analysis results of categories of selected African Countries based on incomplete information available

Country	$f_1^k$	$f_2^k$	$f_3^k$	$f_4^k$	$f_5^k$	$\sigma_i^1$	$\sigma_i^2$	$\sigma_i^3$	$\max(\sigma_i^k)$
Algeria	0.1046512	0.081078	0.198922	0.558246	0.050072	0.310643	0.493319	0.174572	0.493318595
Angola	0.6540698	0.00232	0.123494	0.42673	0.342107	0.493319	0.174572	0.398135	0.493318595
Benin	0.5465116	0.000894	0.057229	0.110764	0.023734	0.174572	0.398135	0.769186	0.769185949
Cameroon	0.8197674	0.011919	0.162651	0.163751	0.203707	0.398135	0.769186	0.660663	0.769185949
Congo DR	0.4593023	0	0.189759	0.005687	1	0.769186	0.660663	0.586088	0.769185949
Egypt	0.2790698	1	0.059842	0.310621	0.005429	0.660663	0.586088	0.265878	0.660663285
Ethiopia	0.9098837	0.141569	0.431295	0.0382	0.252099	0.586088	0.265878	0.280797	0.586088286
Ghana	0.5101744	0.015635	0.11747	0.267995	0.070064	0.265878	0.280797	0.481455	0.481455128
Kenya	0.4709302	0.030953	0.150602	0.195975	0.103166	0.280797	0.481455	0.273414	0.481455128
Madagascar	1	0.211331	0.081325	0	0.238766	0.481455	0.273414	0.765287	0.765286751
Namibia	0.2122093	0.003203	0	0.781412	0.056695	0.273414	0.765287	0.192086	0.765286751
Nigeria	0.4505814	0.089534	1	0.232032	0.287326	0.765287	0.192086	0.237911	0.765286751
Rwanda	0.8851744	0.001594	0.010593	0.040069	0	0.192086	0.237911	0.550985	0.550985001
Senegal	0.6947674	0.033514	0.072289	0.144129	0.028754	0.237911	0.550985	0.756124	0.756124291
South Africa	0	0.155187	0.35241	1	0.137379	0.550985	0.756124	0.193312	0.756124291
Sudan	0.693314	0.421263	0.572987	0.033451	0.282121	0.756124	0.193312	0	0.756124291
Tunisia	0.1177326	0.044019	0.063253	0.487097	0.001134	0.193312	0	0.19331191	0.19331191

(Data Sources: UN Statistics Division; March, 2011:

<https://unstats.un.org/unsd/environment/waterresources.htm> ; FAO Aquasat DataStore:

<https://www.fao.org/aquasat/statistics/query/index.html> July, 2022 & Live Web portals: June, 2022)

As earlier described in the methodology, the grey system of analysis shown in Table 5 is to analyse and categorise selected African Countries from each of the Sub regions in relation to their respective Water and Agricultural data: [1. Total Employment in Agric.(%)\_Year 2017 (%), 2. Agric Water Use (10<sup>9</sup> m<sup>3</sup> per year)\_Year 2012), 3. Arable Land (hectares)\_Year 2016, 4. GDP Per Capita (USD)\_Year 2018 and 5. Rainfall/Precipitation (mio m<sup>3</sup>)\_Year 2011]; as a key step to effectively and efficiently analyse and manage water resources for effective agriculture strategies and processes; it can also be applied to other Agricultural and economic processes. Here, the following Grey Analysis parameters were used to carry out the required analysis:  $\eta_0 = 0.20$  ;  $\eta_1 = 0.50$  ;  $\eta_2 = 0.40$  ;  $\eta_3 = 0.25$  ;  $\eta_4 = 0.60$  and Where: i = Selected Countries in each Continent : j = list of criteria/categories (1, 2, 3, 4, 5); K = k th grey scale (1, 2, 3).

From the results obtained in Table 5, the maximum values( $\max(\sigma_i^k)$ ) based on all the factors considered indicates that that Nigeria, Egypt, Ethiopia can be classified as being in Group 1; Algeria, Benin and South Africa are in Group 2; While Ghana, Senegal, Rwanda are in Group 3 and so on. These classification or groupings represents three clusters or groupings based on the three data classifications used for our analysis and how we can treat each Countries under a specific group/class as similar entities affected by similar factors and having similar Agro water related conditions, even with limited partial data or information available; which of course is the key advantage and use of the Grey analysis system.



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From the interpreted Grey analysis results briefly described; therefore, in this situation, in reference to the three criteria selected; by considering all the factors analysed, Water related Agricultural issues for each of the Countries in the same Group can be analysed similarly as common entities within the same class/cluster affected by similar factors. This intelligent analytical process, has the advantage of helping Agricultural systems, Water management systems and personnel to proactively categorize, understand, analyse, forecast and manage unique country or regional methods to effectively monitor and manage water resources for efficient Agricultural practices, processes, systems, and strategies; in line with unique factors and metrics which are of influence in each country and across countries in specific regions. Though the method can be analytically cumbersome and when the number of factors are much more; but it is very ideal for a situation where not many or a few variables or factors are being considered and can be adequately categorized using incomplete datasets available as is typical in a real world scenario, which is a key advantage of this Grey analysis method.

When data from a variety of influencing factors for a Country/Region are categorized; adequate measurements can be made, forecasts and planning can be improved, predictions can also be even streamlined into sections and more revelations with respect to specific datasets and factors affecting a variable can be determined to further produce better water management and effective agricultural practices specific to a region or Country efficiently. Being aware that a specific environment, Country or Regional factors do uniquely affect agricultural processes and practices in a region per time; such sectionalized analytical process and groupings, ensure that strategies are efficiently developed and can be implemented for specific locations with respect to each Country(s) or Region(s) unique agricultural and water peculiarities. As can be deduced from the groupings, we see for example that when the size of arable land is considered, agricultural employments, Rainfall amount, GDP per capita and amount of water use for agriculture; Nigeria, or Egypt or Ethiopia or Angola..., can be used as a case study for the Countries under Group 1; thereby creating accost effective study and water management strategy developments creation that would positively affect the effective and efficient practice of agriculture in these Countries making up such Group. Such a procedure can also be replicated for other Category Groups to ensure an elegant and intelligent cost effective analytical approach to the analysis and management for water management processes for effective agricultural practices that can be well applied to a specific farm, region, Country or even on a Global scale.

Such analytical classification can also influence water pricing and cost which has also been highlighted in this work as an independent variable, which also affects Wc and varies across Countries and Regions and clustering countries with similar conditions analytically is a key efficient step in innovatively analyzing water management and improving water pricing and costs for effective agriculture. Additionally, according to a comprehensive analysis by the World Bank in various countries and regions around the world, the ratio of water charge to net income and to output per hm<sup>2</sup> can be used to determine the range of affordable water prices for peasants [50]; so such grouping analysis by the grey system is vital for effective and efficient water management for agriculture. Furthermore, the grey cluster analysis for selected African countries presents an innovative collaborative policy approach for which countries with similar influencing factors can support each other by strengthening the cumulative water management resources in the region,





which will also have a positive cumulative effect on farmers in the region, continent and even a global scale. From collaborative systems, policies, strategies, development, and financial steps, such community based analytical clustering can improve the overall efficiency and effectiveness of water management for an optimized agricultural sector; because reliable access to water remains a major constraint for millions of poor farmers, mostly those in rain fed areas, but also those involved in irrigated agriculture. Climate change and the resulting changing rainfall patterns pose a threat to many more farmers, who risk losing water security and slipping back into the poverty trap. The need, therefore, to strengthen the communities' capacity to adopt and disseminate agricultural water management technologies, processes and strategies cannot be overemphasized [15].

Such analytical clustering mechanisms is vital in supporting efficient monitoring and evaluation exercises, which assist effective scaling up of systems and policies. Such policies cut across key areas like policy engagements, project financing and knowledge management as also areas where such analytical approach for water management is critical. In scaling up agricultural water management impacts, it is important to conduct an assessment of the local context to identify the best possible pathway to use as an entry point [15], and as a building block to groupings and analyzing similarities across regions and communities. Furthermore, this data based groupings using grey analysis, can be used to impact, analyse and scale up effectively water management policies greatly in such areas as : Integrated natural resources (land and water) management policy framework, Water user groups should be responsible for O&M of irrigation infrastructure, Targeting poor and vulnerable members of the community, Participatory watershed management and planning, Project financing, Private-sector involvement, Climate change and many others as related to farmers and clusters of community(ies) at large.

#### 4.11 Performance (BER) Comparison of Cooperative MIMO techniques for the Hybrid Cooperative System

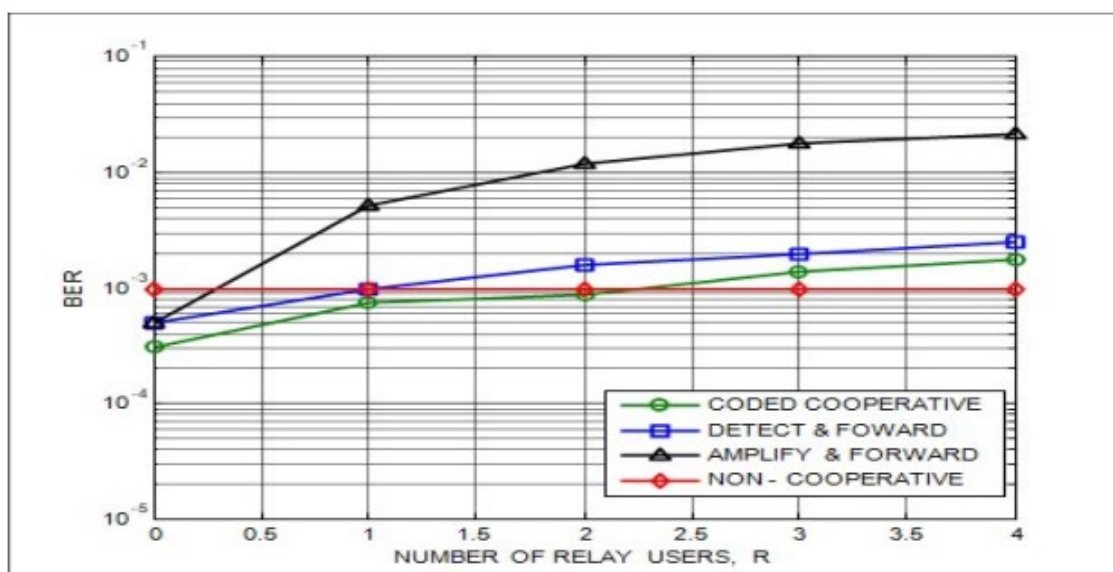


Figure 13: Performance (BER) Comparison of Cooperative MIMO techniques for the Hybrid Relay / Cooperative System having R Relay nodes, between the source node and cooperating node.

#### 4.12 Energy Consumption Comparison of Cooperative MIMO techniques for the Hybrid Cooperative System

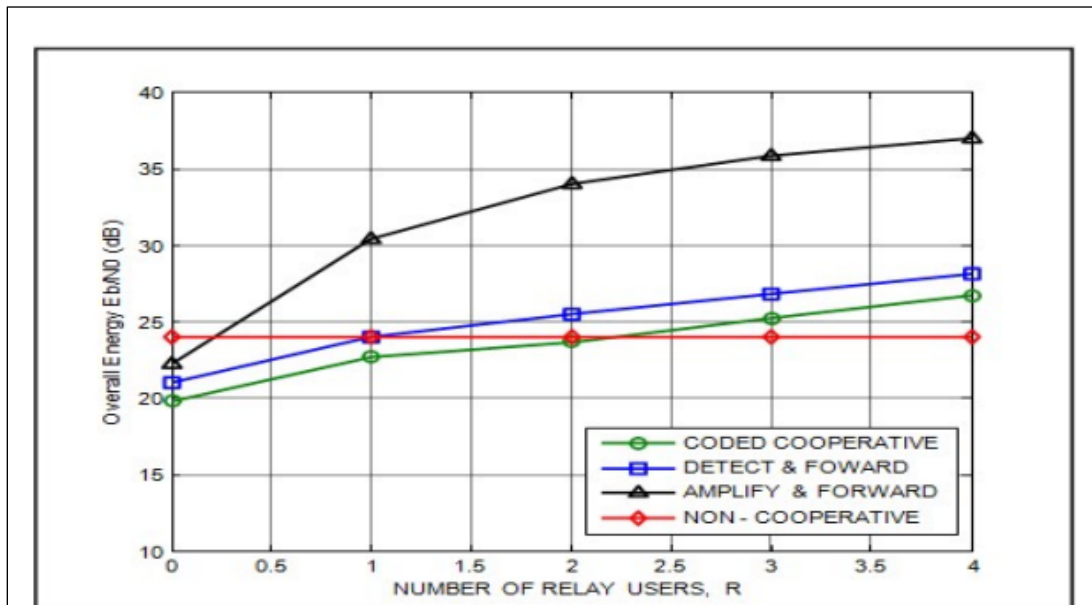


Figure 14: Overall Energy Consumption Comparison of Cooperative MIMO techniques for the Hybrid Relay / Cooperative System having R Relay nodes between the source(N) and cooperating node(Nc), where the inter – node and uplink channels have the same mean SNR ( $E_b / N_0$ ).

As earlier described in the methodology, this Hybrid Cooperative Communication System is designed and analysed to investigate the performance and Energy Consumption of such a system and the output of each of the cooperative MIMO techniques in such a system. Here in Figures 13 and 14, more cooperative communications techniques (Amplify and Forward (AF), Decode and Forward (DF) and the Coded Cooperative System) and are compared with respect to their Performance and Energy Consumption as against a non-cooperative wireless system. Where the relays nodes ( $N_1 \dots N_{c-1}$ ) and indicated as R, the cooperative node(s) ( $N_c$ ) as C; and the Base/Control sink node or station as B. For this analysis, the nodes (i.e. Source, Relay and Cooperative) are also 'unpaired', and just one cooperating node ( $N_c$ ) provides cooperation to the transmitting/source node (N); while the inter – node and uplink channels have the same mean SNR ( $E_b / N_0$ ).





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As shown in figure 13; the comparison in performance (BER) was made at a fixed SNR ( $E_b/N_0$ ) of 24dB for the non – cooperative case that gives the target BER of  $10^{-3}$ . As shown the cooperative systems show significant decline in performance as the number of relay nodes, increases ; this because the multi – hop protocol has the draw – back of loss of data integrity as the links gets longer (reduced end-end reliability), because the data received and then forwarded by a relay would be also contain more noise, thereby reducing performance. For the Amplify& Forward and Detect & Forward techniques; this is more evident because of their repetitive protocol, for the AF, this is because each relay amplifies the signal received, thereby also amplifying more noise, while for the DF; since each relay forwards the data it receives, so it forwards also erroneous bits, therefore reducing the performance of the system. The Coded cooperation on the other hand shows a better performance than the other two techniques because of the inherent error correcting ability of the channel code, but as the number of hops gets longer, performance degrades, as the number of erroneous bits can no longer be handled by the code. This again confirms that increased processing, and channel coding gives a boost to cooperation, as coded cooperation benefits from its error correcting ability of its code.

As shown in Figure 14; the comparison in overall (total) energy consumed by cooperation was made with the non – cooperative case at a fixed target BER of  $10^{-3}$ . As shown the energy efficiency also reduces as the number of hops increases. This is due to the limitation of the multi – hop system, whereby data integrity reduces as the link gets longer, therefore, making the relay nodes need more energy to maintain link quality, henceforth leading to an overall increase in energy consumption. As shown , the for the Amplify & Forward and Detect & Forward, show very low energy savings, due to the repetitive nature of their protocols as explained in the performance section above, so as loss of data integrity increases, they would need more energy to maintain a good performance. Furthermore, as shown in Figures 13 and 14; the AF and DF algorithms show acceptably good performances and energy savings when the number or relay users are at minimal values. Though small, but on a practically larger scale of many nodes, this incremental savings of energy and performance advantages can also be of very good use; as it has the advantage of lesser coding that accompany the coded system.

As indicated, the Coded Hybrid cooperative system will give a better performance in terrains where there tends to be signal distortions, which will enable a more intelligent monitoring and management of water resources for effective agricultural processes. As shown, the coded cooperative having the advantage of the error correcting ability of the code, is the most energy efficient of the three techniques, though also nor being very energy efficient as the number of relay hops increases, thus the diversity gain and also the coding gain is reduced, as typical of sensor nodes as also confirmed by other research work that simulated output results for the two wireless sensors differed as the number of nodes increased; when there were more nodes, the packet loss ratio increased, and the throughput decreased [36] . So also, this system's performance and energy efficiency reduces as the number of relay hops increases, though the cooperating node tries to improve the performance and energy efficiency.



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For the integrated algorithm approach, this extra simplification provided by the AF and DF for minimal number of relays and also shorter hops, can be put to use by developing an integrated system that incorporates AF and DF schemes for specific hops and then the coded algorithm for specific longer hops, to ensure that a tradeoff between simplicity and cost is achieved by ensuring the whole network of nodes operates optimally and at minimal energy consumed with the use of different MIMO schemes/techniques at different hops and linkages. Therefore, it can be deduced that the hybrid relay / cooperative system can also be profitable, meeting performance targets and also being energy efficient and environmentally friendly; by ensuring a coded cooperation technique or a technique with channel coding is used, using short relay hops between source(s) and cooperating nodes(s), lesser hardware and power consumption. Channel variations are a major issue in practical wireless systems, and so this makes efficient power control schemes for cooperative communications a key factor of practical importance [61, 67]. Also, the possession of geographical data (as needed in an agricultural setting) would serve well in this case, thereby using the short and even possibly longer relay hops to route the data from the source to the cooperating node via energy efficient routing algorithms, since the position of the best cooperating node as well, as other nodes would be known. As also in previous researches [38], a typical WSN agricultural system as demonstrated can be the implementation of an Irrigation Management System based on WSN, which incorporates a remote monitoring mechanism via a GPRS modem to report soil temperature, soil moisture, WSN link performance and PV power levels. Sensor network and other [49] agricultural techniques might also help them to store and utilize the rain water, increase their crop productivity, reduce the cost for cultivation and make use of real time values instead of depending just on prediction. Furthermore, previous research [55] also proposed a complete agricultural solution for the farmer based on Wireless Sensor Networks and GSM technology. The data acquired about environmental factors of the field is transmitted to the farmer enabling him to control the actuators in the field. As also described by previous research works, the sensor/node data uploaded to the internet using the data logging unit can be accessed from both personal computers (PCs) and mobile phones [19].

#### 4.13 Analysis of the Hybrid Cooperative Wireless System and number of Cooperating Nodes

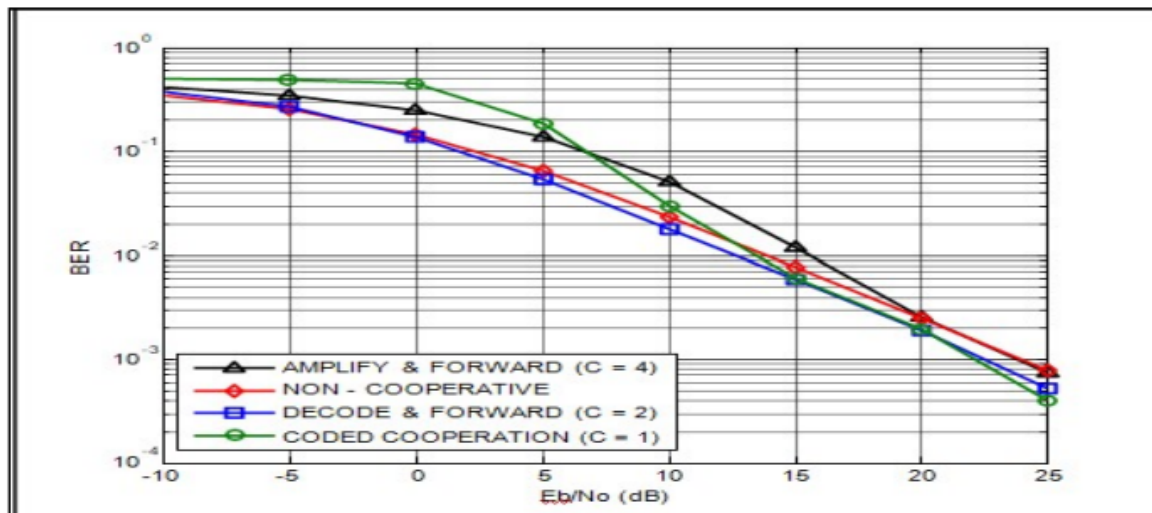


Figure 15: Cooperative MIMO techniques for the Hybrid Relay / Cooperative System and having one Relay, ( $N_1 \dots N_c = R = 1$ ) and number of Cooperating nodes ( $N_c = C$ ); where the inter – node and uplink channels have the same mean SNR ( $E_b / N_0$ ).

The Hybrid Cooperative system is analysed as shown in Figure 15, with respect to number of cooperating users, with the intent to investigate how the system Performance and Energy Efficiency varies with respect to each of the cooperative MIMO techniques. As shown in figure 15, the nodes are also ‘unpaired’; and each cooperative MIMO technique is shown with the amount of cooperating nodes ( $N_c = C$ ), each technique needs to achieve at least the performance of the non – cooperative case.

Also shown by the BER values, the performance of this system improves as the number of cooperating nodes to the source, and the relay increases; this is so, because as diversity, better signal integrity increases; there would be fewer errors at the receiver(s). Furthermore, the minimum number of cooperating users ( $N_c = C$ ), in relation to the amount of relay nodes differs with respect to the cooperative MIMO technique, due to each technique’s protocol as earlier explained. Also, as shown in figure 15 at a target BER of  $10^{-3}$ ; energy efficiency improves for each cooperative technique as the number of cooperating nodes’ increases; this as earlier pointed out is due to more processing by more nodes, reduced errors, and more diversity, thereby reducing the overall energy consumption of the system. Furthermore, as management of resources is also a key potential of this system; each technique is shown to require a minimum amount of cooperating users to be added to a minimum amount of relay nodes (one in this case), to provide at least a performance as good as the non – cooperative system, and saving a sizeable amount of energy.



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Therefore, from this basic analysis, based on the target BER; the cooperative techniques would require the following least amount of cooperating nodes to meet the set target Performance and Energy threshold:

- Coded cooperation -  $N_c = C \geq R$
- Detect & Forward -  $N_c = C \geq R + 1$
- Amplify & Forward -  $N_c = C \geq R + 3$

Where,  $R=1$ ; is the minimum number of relay nodes  $[(N_1...N_{c-1}) = R]$ , and  $(N_c = C)$  is the minimum number of cooperating nodes. Also, as shown is that as the number of cooperating users are increased or made larger than the number of relays, the performance and energy efficiency improves for each technique, though each technique would require a unique criterion for the minimum number of cooperating users needed. This hybrid system can also have the potential of providing effective management of resources, because any relay while acting as a multi – hop link between a source and a cooperating user, can simultaneously be a cooperating user to another source, thereby maximizing system resources. Additionally, as a typical WSN wireless network, based on the network connectivity, the power consumed in the network can also be computed or also estimated and then can be predicted. As shown by other research works [34]; WSN nodes have three energy consumptions states: sleep, transmit and receive; but for this research work, the focus here is transmitting/transmission wireless power.

The hybrid relay / cooperative system mitigates loss of data integrity associated with a repetitive multi – hop system (which has also been shown to be less energy efficient as the number of relays became larger than the number of cooperating users for all cooperative MIMO techniques). Additionally, the coded cooperative technique of the Hybrid/Relay cooperative system was shown to be the best in terms of performance and energy efficiency, and for even further improvement of the coded cooperative technique, the use of more robust coding schemes like turbo codes, overlay block – fading codes could be implemented to improve performance [2, 20, 60], over the RCPC codes as used in this research work.

Furthermore, from the comparative analysis results of the three Hybrid/Relay cooperative MIMO techniques; further increased performance and energy efficient cooperative communications could be achieved by using cooperative technique(s) that involve channel coding (maintaining quality signal strength and performance is regardless of the conditions of the wireless channel); pairing between users, appropriate relay assignment scheme(s), and possibly more cooperating users for greater cooperative diversity gain.

## 5. LIMITATIONS AND RECOMMENDATIONS OF STUDY

This research study was focused on the analyses of water resources as it relates to effective agricultural potential and usage. Though a thorough analysis of the various factors affecting

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water capacity for effective agriculture was carried out, there were also a few limitations within the scope of this study. In terms of data acquisition, the datasets used were from approved and dedicated data stores, repositories and databanks, which in some cases were not fully complete with respect to certain regions or countries; thereby limiting further extensive regional or country based analyses; for example, in specific environments, up to date gender related data of women in agriculture not being readily available provides a challenge in carrying out adequate and additional specific comparative and informative analyses for regions and locations. Also, for an item like soil, specific functions and subsequent values provided by ecosystems are variable and rely on numerous soil physical, chemical, and biological properties and processes, which can differ across spatial and temporal scales (Doran, 2002; Nannipieri et al., 2003; Van Diepeningen et al., 2006; Spiegel et al., 2015)[18, 42,57 64]. As such, selection of a standard set of specific properties as indicators of soil quality can be complex and varies among agricultural systems and management purposes [10]. Additionally, the data analysis did not involve sample surveys from respondents, which could further add more perspectives to the study, by employing mixed or data triangulation methods.

Furthermore, with respect to the available water capacity for effective agriculture, a non-exhaustive list of key variables were considered and analysed in relation to physical, agricultural, socio economic and conditional factors influencing water management for effective agriculture [56]. However, some other variables were not part of this analysis, variables such as that relates to political and policy frameworks; specific types of irrigation systems and specific types of crops; which would provide even more analysis that can provide additional insights on how such factors also influence water management for effective and efficient agricultural practices [4]. For the effect of climate change on agriculture; the biggest limitation or problem occurs with the uncertainty surrounding the effects of climate change and the unknown time frames. It is still uncertain who will be most impacted by the changes and this fosters a lack of initiative for taking action now to mitigate the effects of climate change. Thus, continuous education, monitoring and knowledge acquisition will be necessary factors in the study and preparation for climate changes as it affects specific regions or locations under unique conditions [5].

Also, for the cooperative hybrid/relay wireless system; the code rate of the RCPC codes can be made more flexible by dividing the frames into more sub frames, and thereby adjusting the sizes of the frames for much improves performance and energy efficiency, especially in a multi –user system [58]. Furthermore, pairing and the issue of partner assignment was not implemented in this work; it is an issue in multi – user systems, and can be effectively implemented by using effective algorithms or schemes that give optimal or near optimal performance by efficient choice of partners in a multi – user environment making the base station able to treat all nodes fairly, based on the knowledge it has of all the channels between nodes.

Also, this work was done on the basis of equal transmit power of wireless sensor nodes; but it can be taken further by implementing an adaptive power control mechanism, that varies as nodes' transmit power based on the instantaneous channel (inter – user and uplink) conditions; in this way much more energy efficiency and improved performance would be achieved.





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Additionally, as it's also known that the range of battery-operated wireless sensor devices is limited; so, multi-hop communication is also very useful in sending data to control or base station [12].

Tests on the cooperative MIMO techniques can also be done on a variety of environments, which do possess unique channel characteristics; in this way much more developments in the cooperative MIMO techniques as well as improving each techniques' performance with reference to unique wireless environments shall be obtained. This hybrid relay / cooperative system can be further investigated, with energy and performance efficient routing protocols developed, so as to 'unlock' the potentials of this system. This system promises efficient resource management, effective geographically based communications, improved performance and energy efficiency, and other potentials which may not be fully known at this stage.

## 6. CONCLUSIONS

Agriculture is the primary source of income for three out of every four people on the planet who are living in poverty, and it is crucial for food security and economic development in developing countries. Therefore, innovative concerns and measures must be used in agricultural water management and practices for both field and system in order to decrease water scarcity, increase environmental friendliness and societal welfare, and thereby increase food production. This study's main objective was to examine the methods and variables that influence how water resources, water security, and water management are used in the agricultural sector, as well as how water management and policy decisions can be made to improve the efficiency of the relationship between water, agriculture, and food production.

Datasets from trustworthy and recognized data stores, portals, and sources were used for this study's research work, analyses, demonstrations and investigations; as a result, it may be assumed that the datasets are reliable and credible. This analytical research work, investigated, analysed and demonstrated that the needed and available water for farming ( $W_c$ ) in a location, region and/or Country and the internal variables affecting and influencing  $W_c$ , can be measured and also accurately predicted. Furthermore, this study suggests that these independent variables (which are also influenced by underlying factors) holistically affects  $W_c$  and can be accurately accounted for, as needed information for effective and efficient strategy, systems, policies, technologies development, to aid effective water management for agriculture.

With respect to water resources and its relationship to available water for Farming; this work by using a case study comparison of some selected African Countries, demonstrated that  $W_c$  can be innovatively and mathematically determined, and should be adequately sustained by the robust, improved, innovative management of natural and artificial water resources within a country or region, to overcome the challenges of water scarcity, droughts and flooding; brought about by higher demand for water, climate changes, socio-geographical, economic, and political factors; to culminate in more effective agriculture and food production.



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On the high importance of more diversity and inclusion in global economies and with respect to the need for increased Women participation in Agriculture; this research paper analysed and examined the socio-economic importance and impact of gender equality also in Agriculture; shown by the need for more Women to participate actively in Agriculture, which will potentially contribute positively and greatly to effective agriculture, including more efficient water management and also increased food production, as well as the average GDP of countries globally. Furthermore, the reality and importance of combating climate change cannot be overemphasized, as this work further contributes to the body of research by depicting using a time series analysis the linear continuous reduction in water resources (Precipitation and Internal Freshwater) as a negative effect of climate change and on why as an urgent need, more research, analysis, processes, investments, systems, policies, and actions needs to be continually investigated, analysed, created and implemented; to combat climate change and mitigate its effects on water resources, agriculture and humanity in general.

Cooperative communications has been shown in this work to improve performance in terms of BER and also energy efficiency by saving a good amount of total energy (for similar channel conditions), thereby reducing the overall (total) energy consumption of the system, compared to a non – cooperative system. Therefore, the trade – offs in performance and transmit power is confirmed; because, having more wireless nodes cooperating would mean more processing at each node leading to better performance, though this would arguably mean more node power for processing; but each node would transmit with a reduced energy to maintain network quality, thereby reducing the net energy consumption of a cooperative system. Analysis of the Hybrid/Relay cooperative communications system, showed useful potentials and benefits in terms of performance and energy efficiency and thus is a key technology needed to further improve wireless communications, which will be very useful in the intelligent and technologically driven management of water resources for effective agriculture; by ensuring that useful information on weather, soil, environment, crop, demographics, water sources and water related and irrigation information and data can be accessed, transmitted in real time and used to analyse, monitor, manage and implement timely actions and policies that would further optimize the water agriculture and food nexus for the great good of society.

Data-driven analytical (including Machine Learning and Grey Analysis) and simulation tools, methodologies, techniques and theories were employed to measure, analyse, investigate, deduce, predict and draw meaningful conclusion in this research work; to ensure that the objective and the aims of this research were effectively met and important results, observations, inferences and conclusions were actualized. This work thereby investigated and methodologically presented a cost effective analytically robust approach to water management for effective agriculture, which would lead to even further research works and also contribute to efficient and effective food production and the sustainable well being of humanity and the environment globally.

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## **Contending the Border Interest and the Protection of Human Rights: Analysis of the European Union Role to the Migrants Crisis Issues at the Turkey Greece - Border In 2020**

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### **Abstract**

The wave of asylum seekers that anticipate to enter the European Union area from Greece border in response to the failure of the 2016 EU-Turkey agreement has led the Greek government supported by the European Union to take very tight and extreme security measures and worst cause violence for asylum seekers on the border. In this case, EU as European regional institution with its policy and regulation has the obligation to respond. Therefore, this paper will discuss the European Union position as regional institution in response towards the 2020 Greece-Turkey border crisis with an analysis of Human Rights and Liberal Institutionalism lenses. This paper also uses a qualitative approach with the type of descriptive analysis. The results of this analysis then reveal that in this case the position of the European Union prioritizes borders security because Greece border security became the EU member states interest rather than concern about protection of asylum seeker right in the border, so that the response in this crisis will lead to policies to support Greece.

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**Keywords:** Greece-Turkey Crisis, Border, Human Rights, European Union (EU)

## I. Introduction

Europe is known as a region with prosperous and safe countries making it a destination for migration or even to apply for asylum. This is then seen from the number of asylum seekers who come to Europe as reported by EUROSTAT that in 2015 there were 1,257,030 and in 2016 there were 1,205,804 asylum seekers who applied for special protection in European Union (EU) member states. This inflow creates great pressure in many countries, especially Greece because of the large number of asylum seekers arriving from the Eastern Mediterranean route via Turkey to Greece, even though this route became the largest in 2015 (European Parliament, 2017). According to UNHCR, asylum seekers arrived in Greece in 2015, reaching 861,630 and in 2016 there were 177,234 people, of which most of these asylum seekers were citizens of Afghanistan, Syria, Iraq and other Middle Eastern countries (Operational Portal Refugee Situation).

The soaring number of asylum seekers arriving in Greece then prompted the EU to take policies because Greece itself is a member state and EU territory. Therefore, included in the reform of the Common European Asylum System (CEAS) to cooperate with neighboring countries, in March 2016, the EU and Turkey entered into a cooperation agreement regarding asylum seekers, in which the agreement explained that irregular migrants, including asylum seekers, especially from Syria would be detained or returned in Turkey and the Turkish government itself is obliged to take the necessary measures to prevent illegal sea or land migration routes being taken to enter the EU (Council of European Union, 2016). This condition led Turkey to accommodate 3 million refugees, the majority of whom came from Syria, amounting to 2.7 million (Long, 2018). Then on the other side of the agreement, the EU will disburse 3 billion euros in stages to facilitate refugees detained in Turkey (Council of European Union, 2016).

This policy is certainly quite influential. According to UNHCR, the number of refugees who arrived in Greece only reached 8,000 people from April to July 2016 after the agreement was enforced, where before the agreement took effect from January to March who came to Greece could reach 150,000 thousand (Pew Research Center, 2016). Likewise, in the following years, namely 2017 – 2019 there was a drastic decrease in the number of arrivals of asylum seekers to the Greek border compared to 2015-2016 (Operational Portal Refugee Situation).

This success did not last very long, as in early 2020 it was discovered that this cooperation agreement was on the verge of failure, where at the end of February 2020, Turkish President Recep Tayyip Erdogan said that Turkey had opened the border gate with Greece and was no longer detaining asylum seekers for entered Europe because the EU did not fulfill its promise in the cooperation they agreed to in 2016 (McGee, 2020). A few days later, in early March, the EU through the Head of Foreign Affairs, Josep Borrel, advised not to go to the border because the



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Greek-Turkish border was closed (Independent.uk, 2020). This problem seems to show that asylum seekers from the Middle East who seek refuge in the EU are neglected because the Turkish government is no longer responsible and on the other hand the EU does not accept them by closing the border. This then sparked a debate over EU policy related to asylum seekers so that the idea emerged that this crisis was caused by the failure of EU policy reforms related to CEAS (Enria & Gerwens, 2020).

Hence, the Turkish President's statement then made the Greek government respond by placing the Police, Army, and Special Forces and assisted with the European Border and Coast Guard Agency (Frontex) to handle the Greek-Turkish border following the large number of asylum seekers who wanted to enter Greece. In addition, Greece has effectively cut off access to the asylum system without any legal basis and justification (Human Rights Watch, March 4, 2020). This is of course a direct policy carried out by the national government but this policy in the end ignores and violates the human rights of asylum seekers.

It has been reported that asylum seekers seeking to enter the EU after this issue arose received human rights abuses. The Greek government is known to have opened fire on a boat containing asylum seekers and there are still around 450 people trapped on a navy ship in Lesbos, Greece (Enria & Gerwens, 2020). Then according to Human Rights Watch Greek security forces and unidentified uniformed gunmen at the Greco-Turkish land border detained, assaulted, sexually abused, robbed, and stripped asylum seekers and then forced them to return to Turkey (Human Rights Watch, March 17, 2020).

Seeing this crisis, Greece and the EU have received a lot of criticism from the United Nations and other NGOs. As stated by the UN Special Rapporteur on the human rights of migrants that they are very concerned about the violence received by asylum seekers and Greece must take steps to stop this violence (United Nations Human Rights Office of the High Commissioner, 2020). Similarly, Lotte Leicht, EU Director at Human Rights Watch, explained that the EU should show that it can respond to the arrival of people fleeing conflict and persecution by focusing on protecting human rights (Human Rights Watch, March 4, 2020).

This crisis certainly brings a dilemma for the EU itself to take a response related to the Greek-Turkish border crisis because in fact with the existing policies and rules, the EU is obliged to ensure both of these things, namely external border security and the protection of the human rights of every individual who in this case is as an asylum seekers can be met but in this crisis it seems that these two things are difficult to deal equally. For this reason, specifically in this paper, the author will analyze with the question of how the position of the European Union as a regional institution in responding to the Greek-Turkish border crisis. Whether in this case as a regional institution with its regulations and rules, the EU should be more concerned with the enforcement and protection of human rights or vice versa whether the EU's external borders should be a priority.



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Furthermore, this paper will also look at the concept of Human Rights and the perspective of Liberal Institutionalism.

This issue is important to look at because so far, several research studies have not focused on human rights violations against asylum seekers on the Greek border. For instance, in Lena Karamanidou's (2014) article entitled "Violence Against Migrant in Greece: Beyond the Golden Dawn" who argues that violence against migrants occurs in Greece and it is rarely investigated or prosecuted by Greek authorities because the state's response has been shaped by discourse and policies. rational about migration. Karamanidou's writing then shows that the Greek government itself has been influenced by the anti-migrant narrative, making it difficult to highlight the national government's response to cases of migrant violence, especially those at the border. Then apart from that, there is another study written by Luisa Marin (2011) with the title "Policing the EU's External Borders" which explains the monitoring of the EU's external borders to see developments related to externalization against illegal migrants at the border. In addition, such as the research conducted by Kara E. Dempsey (2020) with the title "Spaces of violence: A typology of the political geography of violence against migrants seeking asylum in the EU" which then only focuses on the relationship between forms of migrant violence in several countries. EU and then describes the complexities of risks faced by migrants.

These studies do discuss the border and migrant violence in European Union countries but do not specifically look at the EU's position and its policies regarding cases at the border involving human rights violations against migrants. For this reason, this paper will examine and analyze the position of the EU itself, which is also important because the EU's external border, namely Greece, is included in the EU territory, where the EU itself claims its territory as an area of Freedom, Security and Justice (Official Journal of the European Union, 2012) but this crisis seems to contradict this idea. In addition, the 2020 Greek-Turkish border crisis occurred and was further exacerbated by the failure of the EU's reform policies.

Thus, the structure of this paper will consist of several parts, namely, an explanation of various EU policies related to asylum seekers and also policies related to the external borders of the EU. Then, the discussion will continue on the principles of human rights established internationally and the EU's perspective on human rights in regulations and rules, especially regarding the human rights of asylum seekers. The next section will discuss the EU's policy dilemma between policies to fulfill and protect the human rights of asylum seekers or policies regarding strengthening external borders in the Greek-Turkish region. This section will also describe and explain some statements from the EU itself and also responses from other institutions to see which direction the EU will take steps related to this crisis. The final part of this paper will discuss the position of the EU as a regional institution and the response that should be given to the crisis at the Greek-Turkish border.

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## II. Literature Review

### The Immigrant Concept

When it comes to immigrants, there is no universal and legal definition of what a 'migrant' is. However, according to the United Nations High Commissioner for Human Rights (OHCHR), an immigrant is any person who is outside a country where they are citizens of the country or country of birth or their usual place of residence, even stateless persons. Migrants are thus used as a neutral term to describe a group of people who share a lack of citizenship attachment to their host country (United Nations Human Rights Office of the High Commissioner). Meanwhile, the OECD Factbook (2007) explains that nationality and place of birth are the two most common criteria used to define the "immigrant" population. Foreign-born residents include all people who have migrated from their country of birth to their current country of residence. Then according to the International Organization for Migration (IOM) that a migrant is a person who moves or has crossed an international border or in a country far from his usual place of residence regardless of (1) the legal status of the person; (2) whether the movement is voluntary or involuntary; (3) what is the cause of the movement; or (4) how long the stay (United Nations).

Immigrants in this case have several categories but, in this case, the categories of immigrants that will be discussed are asylum seekers and refugees. An asylum seeker can be defined as a person who has fled persecution in his home country and has become a safe haven in another country but has not received recognition or legal status (HIAS Organization). Whereas refugees themselves can be defined in international law as people who have fled persecution or conflict in their country of origin. Therefore, refugees are people who are definitely and legally recognized so that they are entitled to full protection (United Nations Human Rights Office of the High Commissioner).

In line with this understanding, the European Union also recognizes an asylum seeker is someone whose claim has not been decided by the country where he has filed it or in another responsible country (UNHCR Protection Training Manual for European Border and Entry Officials). Asylum seekers will then become official and clear refugees if they have gone through various policy procedures established by the European Union. Thus, not all asylum seekers will be recognized in the end, but most refugees who are officially confirmed to have been originally asylum seekers.

### EU Policy Regarding External Borders and Asylum Seekers

Responding to the phenomenon of the large number of asylum seekers and then encouraging the European Union to make policies related to systems and procedures for asylum seekers. The policy is called the Common European Asylum System (CEAS). This policy was formed based on the rules in the Treaty on the Functioning of the European Union, Article 78 which also explains that the policy contains several things, namely 1) equal status for asylum



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seekers from third world countries and applies throughout the Union; 2) equal status for persons seeking international protection; 3) a general system of protection for refugees in the event of a massive inflow; 4) general procedures for granting and withdrawing asylum or protection status; 5) standards regarding conditions for accepting asylum or protection applicants (Official Journal 115, 2008).

CEAS is a system for asylum with various procedures in it and has gone through several revisions from 1999 to 2005. Some of the procedures in CEAS are as follows.

- Asylum Procedure Directive

This policy establishes general procedures for EU member states to provide international protection so that these procedures apply to persons fleeing persecution or serious harm and applying for international protection in the EU. This procedure also allows member countries to run it efficiently and with a high level of protection (European Commission Migration and Home Affairs).

Then in more detail in article 3 of this procedure explains that the scope of application of the directive applies to all claims made on the territory of an EU member state either at the border or in the transit zone. Then article 6 explains details about access to asylum procedures which requires the state to ensure that individuals can access procedures effectively in practice. However, these rules do not apply to those unable to reach territories, borders, or transit zones. In addition, article 7(1) states that the presence of an asylum seeker on the territory of an EU Member State is lawful the asylum seeker is permitted to remain in the Member State for procedural purposes until a decision has been made. This also applies to asylum seekers at the border as stated in article 35 (European Union Agency for Fundamental Rights Handbook, 2013).

- Reception Condition Directive

This policy aims to ensure better and more harmonized standards of admission conditions across the Union and ensure that applicants have access to housing, food, clothing, health care, education for minors and access to employment under certain conditions. In addition, this instruction also pays special attention to vulnerable people, especially unaccompanied minors and victims of torture. Member States should therefore carry out individual assessments to identify the special admission needs of vulnerable persons and to ensure that vulnerable asylum seekers can access medical and psychological support. Furthermore, this procedure also includes rules on the detention of asylum seekers, which ensures that their basic rights are fully respected (European Commission Migration and Home Affairs).

- Qualification Directive

This policy establishes the criteria for applicants to qualify for refugee or protection status and sets out the entitlements granted to recipients of this status. Therefore provisions on protection

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from repatriation, residence permits, travel documents, access to employment, access to education, social welfare, health care, accommodation access, access to integration facilities, as well as special provisions for children and vulnerable people are also included. in legislative instruments (European Commission Migration and Home Affairs).

Then this procedure also outlines what things an asylum seeker must accept as Article 6 of this directive states that all persons who file an asylum claim must be provided within three days of a document stating that they are permitted to stay while the asylum claim is being examined (European Union Agency for Fundamental Rights Handbook, 2013). This allows asylum seekers to stay on the territory of the European Union until a decision is made on their status.

- Dublin Regulations

Dublin policy stipulates that member states are responsible for examining asylum applications. This Dublin Regulation has been updated from Dublin I to Dublin IV. In Dublin III there are procedures on the protection of applicants such as mandatory personal interviews, guarantees for minors and the wider possibility of reuniting them with their relatives as well as procedures regarding returns under protection in accordance with these procedures. Then in 2016, the EU Commission made a revision and submitted a proposal for Dublin IV which changes include increasing the capacity of the system to determine and be responsible for examining applications for protection, protecting the interests of asylum seekers with stronger guarantees and a solidarity-based justice mechanism that includes a corrective allocation mechanism (European Commission Migration and Home Affairs).

- EURODAC Regulation

This policy is more directed at setting asylum application data such as fingerprints. Since its founding in 2003, EURODAC has proven to be a very important tool providing fingerprint comparison evidence to help determine which member states are responsible for examining asylum applications made in the EU. Its main objective is to carry out the implementation of EU Regulation No. 604/133 ('Dublin Rules') and together these two instruments make up the Dublin system. This is also done for criminal investigations with fingerprints for the purpose of prevention, detection, investigation of serious crimes and terrorism. In addition to policies related to asylum seekers with various established procedures, the EU also has policies related to the EU's external border (External Border). This policy remains based on the rules in the Treaty on the Functioning of the European Union, article 77 on the regulation of external borders and the rules in the Treaty on the European Union, article 3.2. Therefore, the EU aims to establish common standards for control at its external borders, and gradually implement an integrated system to manage them (Fact Sheets on the European Union, 2019).

Policies regarding external borders which are included in The Schengen external borders acquis are as follows. The first is The Schengen External Borders Code which is the main

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instrument that establishes general rules regarding external border crossings, entry requirements and duration of stay in the Schengen3 area, and facilitates access for those with legitimate interests to enter the EU territory. This procedure also introduces increased screening of all persons crossing the EU's external borders both on entry and exit, to ensure that they do not pose a risk to public order (European Parliamentary Research Service, 2019). In addition, The Schengen External Borders Code also requires member states to carry out systematic checks of relevant databases on all persons when they cross external borders. This obligation applies at all external borders (air, sea and land) both for entry and exit (Fact Sheets on the European Union, 2019).

Then there is also The Schengen Information System (SIS) which regulates information systems and databases that help ensure international security in the Schengen area. Authorities across the EU use SIS to enter or view alerts of wanted or missing persons and objects. But after the last reforms in 2018, the scope of the SIS is now defined in three legal instruments, which are three separate regulations covering police and judicial cooperation in criminal matters, border checks and the return of third nationals living illegally (Fact Sheets on the European Union, 2019).

Next is a policy called The European Border and Coast Guard Agency (Frontex), where this policy is a central pillar of the EU border management that guards the borders. This Frontex joins and cooperates with the national authorities of member countries which are responsible for border management. This agency together with the national authorities of each member state is tasked with monitoring the EU's external borders, identifying and dealing with any potential security threats to the EU's external borders (European Parliamentary Research Service, 2019). However, Frontex does not arbitrarily intervene in member state authorities but can intervene and assist member states in the event of a situation such as a member state not complying with the management board's decision to address vulnerabilities and borders, and there is special and disproportionate pressure on external borders that jeopardizes the functioning of the state. the Schengen area (Fact Sheets on the European Union, 2019). Accordingly, the regulation on Frontex is regulated in Council Regulation 2007/2004 which states that the responsibility for controlling and supervising external borders lies with member states while this body will exclusively facilitate the implementation of existing and future actions related to the management of external borders by ensuring coordinating the actions of member states in implementing these actions (Carrera, 2007)

Apart from this, in the context of the crisis at the Greek-Turkish border 2020, he explained that the policies established by the European Union for borders and asylum seekers are very structured, but what about their implementation, especially with the large number of asylum seekers arriving at the Greek border. For this reason, through various policies that have been formed by the EU, both regarding the asylum seeker system or the border, the EU's position will be seen when a crisis occurs at the border.





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## Human Rights

Human rights are basically a right that inherent in all human beings, regardless of race, gender, nationality, ethnicity, language, religion, or other status. According to the United Nations, human rights include the right to live and be free, including freedom from slavery, torture, freedom of opinion, expression and many more and everyone has the right to these rights without discrimination<sup>4</sup>. In addition, human rights are rights that focus on freedom, protection, status, or benefits for rights holders. Thus, tasks related to human rights require actions that involve respect, protection, facilitation, and provision (Nickel, 2003).

Continuing from that, human rights have been recognized internationally and worldwide. Therefore, the UN includes laws, regulations and even human rights principles. Principles that are appropriate and related to fundamental human rights are regulated in The Universal Declaration of Human Rights (launched on the United Nation Population Fund (UNFPA) website) as follows.

- Universality and Inalienability

Human rights are universal and inalienable. Everyone everywhere in the world has rights. The universality of human rights is embodied in the words of Article 1 of the Universal Declaration of Human Rights: "All human beings are born free and equal in dignity and rights."

- Indivisibility

Human rights cannot be separated. Regardless of civil, cultural, economic, political or social problems, it remains that human rights are inherent in the dignity of every person.

- Interdependence and Interrelatedness

Human rights are interdependent and interrelated. Each contributes to the realization of human dignity through the fulfillment of his developmental, physical, psychological and spiritual needs.

- Equality and non-discrimination

All individuals are equal as human beings and based on the inherent dignity of each human person. Therefore, no one may suffer discrimination based on race, colour, ethnicity, sex, age, language, sexual orientation, religion, political or other opinion, national, social or geographical origin, disability, property, birth or status. other.

- Accountability and Rule of Law

The state and other power holders are responsible for the observance of human rights. In this regard, they must comply with legal norms and standards enshrined in international human rights instruments.



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Then with regard to human rights itself, the European Union as a regional organization formed by a series of countries that are members of this organization declares in The Charter of Fundamental Rights of the EU that the European Union is founded on universal values that cannot be separated from human rights, freedom, equality and solidarity based on the principles of democracy and law so that the European Union makes its territory an area of Freedom, Security and Justice (Official Journal of the European Union, 2012). For this reason, The Charter of Fundamental Right of the EU which was specifically established by the European Court of Justice (ECJ) reflects the content of protecting human rights contained in the national constitution so that the ECJ itself ensures the EU's compliance with the principles in this law (European Union Agency for Fundamental Rights Handbook, 2013).

The Charter of Fundamental Rights of the EU explains in Article 1 that human rights must be respected and protected, then continued in Article 4 which states that no one has the right to be tortured or treated or punished with inhuman or degrading treatment (Official Journal of the European Union, 2012). Therefore, everyone who is in the territory of the European Union countries, whether they are legal citizens or not, has the right to be treated as written.

Furthermore, the European Union as a collection of countries that upholds individual human rights even shows its concern for asylum seekers and refugees. It is proven in The Charter of Fundamental Rights of the EU which regulates asylum seekers and refugees which is contained in Article 18 which reads "The right of asylum must be guaranteed by respecting the rules of the Geneva Conventions and in accordance with the Treaty on the Functioning of the European Union". Meanwhile, Article 19 includes a prohibition against returning a person to a situation where there is a strong threat of being persecuted or facing a real risk of torture or inhuman and degrading treatment or punishment. To that end, the European Union in terms of protection of asylum seekers or refugees adopts the principle of non-refoulement (European Union Agency for Fundamental Rights Handbook, 2013). The law regarding the protection of human rights is also the basis for policies related to asylum seekers, refugees, people seeking international protection, and even other immigrants so that the policies formed remain based on fundamental values that respect individual rights. Therefore, through international human rights principles and EU human rights law, their application will be seen in the 2020 Greek-Turkish border crisis.

## **Liberal Institutionalism**

Liberal Institutionalism or also called Neoliberalism is a theory that existed after World War II when international organizations began to emerge, namely the United Nations and regional organizations including the European Union. This theory emphasizes the possibility of international cooperation in institutions and compares it with realism which emphasizes power and conflict (Stein, 2008). Furthermore, Arthur Stein (2008) explains that this theory emphasizes institutions or institutions because institutions are important and they can make a difference in state behavior and in the nature of international politics.

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Liberal Institutionalism theory itself focuses on the idea of complex interdependence as first put forward by Robert Keohane and Joseph Nye in the 1970s which emphasizes four characteristics that distinguish Liberal Institutionalism from Realism, which include: First, in institutions there are various channels that allow interaction between states and the relationship between actors. While the second, attention is given equally to all issues, where there is no difference between high and low politics as stated by realism which emphasizes security issues and the decline in military power as a means of determining policy (Inis, 1971).

Then this theory also talks about the impact of institutions on state action and about the causes of institutional change. According to Robert Keohane in his writing entitled *International Institution and State Power* (1989) explains that this theory assumes the state is the key actor but not the only actor. He also stated that the perspective of Liberal Institutionalism is only relevant for the international system if there are two main conditions. First, the actors must have a common interest and gain from their cooperation. The second is that variations in the level of institutionalization have a substantial effect on state behavior.

Continuing from that, this theory emphasizes the role played by international organizations and the international community in world affairs. The international community here as explained by Hedley Bull in *Devitt* write, can be formed because a group of countries are aware of common interests and shared values so that they form society in the sense that they are bound by a common set of rules in their relations with each other. and participate in the work of public institutions. Therefore, the cooperation formed by a group of countries can achieve reconciliation and shape the sovereignty of an organization to encourage economic growth and respond to regional and international security issues (Devitt, 2010). This then shows that countries that bind themselves in the organization specifically share sovereignty with the organization, especially in responding to regional problems. In addition to explaining the formation of organizations driven by the interests of the state, this theory also specifically explains the impact of organizations on state actions. According to Robert Keohane that an international institution or organization can have a significant impact on government behavior and provide meaning that can lead to state action, it can even influence the understanding that state leaders have about the role they must play. International institutions therefore allow states to take actions they could not previously. Keohane also explains that this can happen because international institutions have constitutive and regulatory aspects so that they can determine how interests are defined and how actions are interpreted (Keohane, 1989). In line with that, Arthur Stein (2008) in his writing entitled *Neoliberal Institutionalism* describes three reasons how international institutions can influence domestic politics. First, the domestic requirement to join international institutions thus indirectly has an important effect on internal political arrangements. Second, because membership in an institution makes the state submissive, it affects the state's commitment to certain policy paths. Third, international institutions can provide a degree of legitimacy and make difficult domestic changes easier by providing political protection.



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The ideas in this theory also explain international organizations and international regimes based on rules, norms and principles that help regulate the interaction of state and non-state actors on issues such as human rights (Devitt, 2010). Then international regimes such as principles, norms, rules and procedures all contain what Keohane puts forward as commands about obligatory behavior. In Keohane's view, international regimes must be seen within the boundaries of the issue area and because issues depend on the perceptions and behavior of actors so that they can change gradually over time. That is why institutions can develop rules and norms that promote environmental sustainability, human rights and economic development (Suhr, 2005).

Furthermore, Keohane and Hoffmann then put forward the suggested role of international organizations and regimes (reported in Suhr, 2005), two of which are that international institutions play a role in helping to determine obligations that guide state actions so that they serve as "templates" for policy choices. This leads to how the state adapts the rules to conduct policies. Then the second is that international institutions influence the interests of states and their fundamental preferences through socialization in which norms and ideals are transmitted from one party to another. In addition, Keohane together with P. Haas and M. Levy (1993) (in Suhr, 2005) put forward another idea about what role international institutions might play, namely the role of increasing national capacity to protect the quality of the global environment and institutions can encourage transfers. information, skills and expertise needed for effective domestic programs and providing direct assistance.

### III. Discussion

International migration in the European region is in fact not only a problem for one country but has become a problem for all member states of the European Union and because of this, the problem of migration has become something that the EU government has to deal with (Kapetis, 2012). Likewise, the Greek-Turkish border crisis has become a serious problem not only for Greece but for the EU as a whole.

When the arrival of many migrants, in this case asylum seekers, to the Greek border both from land and river, after the statement from the Turkish government seemed to force the Greek government and the EU to take action quickly. The Greek government then immediately placed troops on the border along with officials from the EU, namely Frontex, to guard the border. At the border there are also some men in black uniforms who are not known even in some interviews with some asylum seekers at the border, they say there are people who do not speak Greek and do not wear Greek uniforms who also helped push back asylum seekers who want to enter Greece (Human Right Watch, March 17, 2020). In addition, the Greek government was also known to stop applying for asylum within a month (Stevis-Gridneff, 2020) resulting in 189 asylum seekers who had just arrived in Greece being detained on the island of Lesbos and about 436 people being transferred to Malakassa, North Athens. They were detained indefinitely under unfavorable

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conditions because these asylum seekers could not apply for asylum because it was closed by the Greek government (Human Rights Watch, March 20, 2020).

Furthermore, the situation at the Greek-Turkish border at the beginning of 2020 was very concerning, where violence against asylum seekers abounded. On the river route, namely the Evros river, according to a Human Rights Watch report (2020) that asylum seekers who arrive by boat are immediately detained in unofficial places of detention or on the streets by a group of people in uniforms and clothes of ordinary citizens and their valuables such as money, cell phones and the bag is taken. Some of them, including children, were beaten with wood or iron, kicked, electrocuted, and even women who were sexually abused by Greek authorities. After receiving this treatment, the asylum seekers were forced to return to Turkey under deplorable conditions. Not only that, some asylum seekers were even separated from their families and there was a shooting by Greek soldiers on one of the women who wanted to save her child across the river in Greece (Amnesty International, 2020). While on the land route, precisely at the Pazarkule land border, Greek security forces fired tear gas and gunfire to prevent asylum seekers from entering the border. This resulted in many suffer from gunshot wounds and several people (the exact total) were shot to death (Human Rights Watch, March 17, 2020). Likewise, in the Amnesty International report which explains that these asylum seekers were beaten by the authorities and detained for days until finally they were forced to return to Turkey without being allowed to submit an asylum application.

The treatment that occurs at the border is undeniably a violation of human rights when viewed from the applicable fundamental rights principles, namely Universality and Inalienability, indivisibility, equality and non-discrimination, accountability and rule of law. Asylum seekers in this case are also human beings and need to be protected and their human rights are not violated as well as in human rights principles also explain the obligations of the state or stakeholders to be responsible for the observance and protection of human rights which in this case is the Greek government and even specifically the EU. In terms of policies and regulations, the EU already has a solid foundation related to the protection of human rights, but its implementation is still a difficult thing to do.

The European Union is a free, safe and fair region (Freedom, security, justice) and the policies and rules that exist in this region are based on respect for human rights. As the rules in The Charter of Fundamental Rights of the EU, especially article 1 which talks about human rights must be respected and protected, then continued in Article 4 which states that no one has the right to be tortured or treated or punished inhumanely or degradingly. In addition, there are also rights for asylum seekers and the right not to be repatriated to areas where the person can receive torture (non-refoulement) in articles 18 and 19. Seeing this, legally, the Greek government has acted in violation of this rule because apart from committing violence, the government also does not open applications for asylum. It is true that violence and human rights violations were carried out by the



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Greek government but the EU itself also has the authority to ensure member states carry out policies based on this rule without violence and persecution for asylum seekers.

Furthermore, through the EU's policy regarding asylum seekers indirectly in this case it does not work as it should, where in the CEAS policy, especially the Asylum Procedure Directive which explains in article 6 that the state must ensure that individuals can access procedures effectively in practice. . In addition, article 7(1) states that the presence of an asylum seeker on the territory of an EU Member State is lawful the asylum seeker is permitted to remain in the Member State for procedural purposes until a decision has been made (European Union Agency for Fundamental Rights Handbook, 2013). It is clear that this is not accepted by asylum seekers on the contrary they are tortured and forced back without a clear legal basis. When this policy is not fulfilled, the other policies in CEAS, namely the Reception Condition Directive, Qualification Directive, Dublin Regulation and even EURODAC are certainly not fulfilled. This seems to show that the policies established by the EU for its member countries cannot be guaranteed to be implemented.

Next, when it comes to external borders. In EU policy, they prioritize the safety of people who will enter the EU territory with various procedures and inspections and urge all member countries to pay attention to this security so that illegal crossings will not occur. As stated in the Schengen Border Code article 13 which explains that EU countries must effectively implement border control. However, this policy also regulates border arrangements that must respect human rights as in Article 3 which explains that border control must be carried out without prejudice to the rights of refugees and people seeking international protection specifically related to the principle of non-refoulement and Article 4 which explains that EU member states must respect fundamental rights when exercising border control. In addition, troops on the border can only use attacks when in an urgent situation and only use attacks as a last resort and when absolutely necessary (European Union Agency for Fundamental Rights).

Then if you look at the case of shootings and tear gas on the Greek-Turkish land border for asylum seekers, whether this should be done by the authorities and is an urgent situation to carry out attacks. When seeing the number of asylum seekers at the border, there were clashes as reported in CBC World News (2020) that there were some groups of asylum seekers who tried to break the fence and force their way into the border. This of course made the officers at the border carry out attacks and dropped tear gas and even killed several people. The Greek government itself admits that this is for prevention because some people have enacted anarchy (CBC News, 2020). This incident certainly shows that the shooting and tear gas launched at the land border is to maintain security and the Greek government itself considers that an attack must be given so that it can be said that the attack is legal according to EU rules to guard the border. But what about asylum seekers arriving from the river? through the case described earlier that they did not commit acts of anarchy instead they accepted violence which of course can be said to be illegal under EU law.

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Later than that, when the Greek-Turkish border crisis occurred, the EU's quick response seemed to prioritize its external security. This can be seen when senior EU Officials met with the prime minister of Greece at the Greek-Turkish land border and even praised the Greek government and local communities for the protection they have done on the EU's external borders and has become a "shield" of the EU region (Human Rights Watch, 2003). 17 March 2020). In addition, the EU itself has stated through the president of the European Commission, Ursula von der Leyen, that their current priority is Greece and Bulgaria, which must receive full support (Stamouli, 2020). Even in the European Council's official statement regarding this crisis, they stated that the EU and member states will effectively protect external borders so that they will take steps related to border strengthening. They will also assist Greece with funds to improve border arrangements (Council of European Union, 2020). This then implies that the EU itself does not really care about the human rights violations that have occurred for refugees, instead they prioritize support and measures for Greece and mechanisms to increase security at the border.

The Greek-Turkish border crisis, together with the response of the EU government, drew a lot of criticism because in this case the EU government ignored the rules and policies that they had formed. As the refugee rights researcher and advocate at Human Rights Watch points out, the EU is hiding behind the Greek attack rather than appearing to protect asylum seekers and move them to safer places. Even Frontex, which is also tasked with monitoring the border, has not done anything significant to ensure asylum seekers do not accept violence (Human Rights Watch, 17 March 2020). This then becomes a dilemma for the EU because the EU itself is difficult to implement their rules and make member states also apply according to the policies they have made. In addition, the policies made by the EU regarding asylum seekers and external borders have not been specifically and clearly to deal with the problem of the large number of asylum seekers so that when this case occurred, the Greek government and even the EU could not handle it properly. This certainly has an impact on people who need international protection and want to enter the EU territory where they are neglected and even receive bad treatment.

The European Union in this case is the central government in the European region and member countries are committed to following the rules and policies that they have agreed on. When viewed from the perspective of Liberal Institutionalism, the policies and rules made by the EU are the result of common interests and shared values so that they can form policies and rules and bind themselves to these rules. run according to the specified policy. In addition, this theory also explains that organizations can influence state actions and lead to state actions, even Keohane argues that this happens because organizations have constitutive and regulatory aspects so that actions can influence state actions and policies.

In this case, it is difficult to later see that the Greek government acts according to the rules and policies established by the European Union because from this case it is very clear that the government on the other hand prioritizes the security of the EU state and territory by not following the rules and regulations related to the protection of human rights. But back again to this theory



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statement that organizations are formed through the interests of the state to respond to regional and international security problems. This then brings this crisis to be seen from the EU's perspective as an institution, where in this case indeed they have norms and rules related to the protection of asylum seekers but as an EU institution operates on the interests of its member countries so that in the context of this problem the interests of the state are stronger to influence the response. EU. In a state of crisis which is then seen as a threat to the EU region, the response that will be taken by the EU will certainly be related to where the member states want this crisis to be resolved. When looking at the statement above regarding the response of the EU and member states to continue to support Greece and strengthen the border, it is not the wrong thing to do because the EU as an institution is faced with security problems at the border which in this case also threatens the entire region. Therefore, the EU's response will represent the interests of other member states to strengthen borders. This then indirectly shows that more than an organization can influence the behavior of the state, the interests of the state will influence the policies of the organization more if the interests of the state are the same from all member countries.

On the other hand, Keohane also put forward the idea that organizations would be able to make countries take actions that they could not previously because the reach of an organization was wider. In this case, the issue of the Greek-Turkish border is also a problem for the EU as a whole and because Greece's membership in the EU also makes the EU also obligated to provide an assistance and broader policies. For example, with Frontex assistance, financial assistance from other member countries and the policy of transferring asylum seekers to another part of the EU region. These kinds of things make the EU an institution that has the power to help Greece act beyond its capacity as a state.

Apart from that, then what about the idea of this theory which suggests that international organizations are based on rules, norms and principles that help actors interact on issues such as human rights (Devitt, 2010) and what about Keohane's idea which suggests that rules and Norms in organizations can lead to state action. If in this crisis the EU as an institution has not been able to bring state actions to continue in accordance with the rules and norms related to the issue of protecting the human rights of asylum seekers because even though EU policies and regulations have looked at the value of human rights protection, during a crisis, EU policies become a dilemma when faced with the interests of the EU. state, especially national security. Therefore, the role of the EU to guide state actions with the rules they make is still a challenge so that when a crisis like this occurs that involves human rights violence, it is difficult to get attention.

## IV. Conclusion

The Greek-Turkish border crisis 2020 has indeed brought the European Union in a dilemmatic condition between their policies for the protection of asylum seekers or vice versa for border borders. However, in this case, the European Union is an institution built by state interests so that when looking at this case the EU's position as a region prioritizes border security. This can



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be seen in terms of the response of the European Union which prioritizes border security and does not take special action related to the human rights abuses of asylum seekers.

It is then beneficial that regardless of the rules, norms and EU policies regarding asylum seekers and the existing border environment, through the perspective of Liberal Institutionalism, the EU's position in responding to this crisis will remain based on the interests of member states and must act according to these interests even in the implementation of the EU. It must have some rules and policies related to the human rights of asylum seekers.

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## Why Is It Control and Auditability So Important In Today's Virtual Environment?

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### Abstract

Corporate and information processing management recognized that computers were key resources for competing in the business environment. Information technology in the last few years has developed very rapidly. Many changes have occurred due to the development of this technology. The role of the auditor is certainly more important when technology is used. Auditors must improve their audit skills and understand IT auditing to facilitate their performance. Because nowadays all transactions use computers, auditors must also use computers and other technological assistance to facilitate their work.

**Keywords :** IT Control, Audit IT, Auditability, Virtual Environment

### Introduction

Information technology in the last few years has developed very rapidly. Many changes have occurred due to the development of this technology. The presence of this technology changes all activities that occur in organizations and companies. Now all use an integrated system, the integrated system must have been computerized (Yulisfan and Nedelea, 2021). This means that all activities, transactions and other business processes that occur in the company already use technology that aims to establish efficiency and of course effectiveness. Simplifying business processes and assisting in the decision-making process is also something that can be helped by the presence of technology. All of the things described above, in terms of the use of information technology will only work well if the company has good procedures for its internal control (Sari, 2015). Information technology audits are also needed here in order to minimize future risks and fraud, as well as find out whether the purpose of using information technology, applications, and systems is running well or not. The use and introduction of information technology and information systems has indeed helped a lot, but apart from the benefits received, there are also new risks that come along or additional risks caused by this technology (Yulisfan et al., 2021). Such as the risk of data errors, due to the large amount of data processed, misuse by users, data theft and so on that have a negative impact on a business. This is where the role of auditors and internal control is very much needed by every business (Warae et al., 2021).

With the information technology was born also an environment called a virtual environment. Where in a business sometimes they not only have physical assets but also have invisible virtual assets. These virtual assets certainly help companies in managing virtual environments. This virtual

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environment makes companies do not need to have large physical assets, only in the form of hardware, later the workers, can work anywhere even from home as long as they are connected to the internet (Lubis et al., 2021). This virtual environment can obviously reduce a company's operating costs. Examples such as the use of documents that no longer need to be printed but can be viewed from a screen and stored in a cloud. Some examples include digital assets such as virtual reality systems, augmented reality systems, email applications, a system, corporate intranet networks, financial application systems, servers, search engines, robots, databases, data analysis applications, IoT devices, and so on.

The role of the auditor is certainly more important when technology is used. Auditors must improve their audit skills and understand IT auditing to facilitate their performance (GAO-18-568G, 2018) Because nowadays all transactions use computers, auditors must also use computers and other technological assistance to facilitate their work. The use of computer tools (information technology) in audits makes it easier for auditors to making audit working papers, obtaining information related to auditing, detecting fraud, conducting periodic monitoring, making audit reports, making it easier to store audit files, and making it easier for auditors to perform data analysis (Gormley, 1984 and Gtblogger, 2018). The use of information technology in the audit process, in addition to facilitating the auditor in carrying out the audit, also reduces costs incurred in carrying out the audit process. So that the audit process becomes more effective and efficient. Because almost all of the audit evidence they will receive will be in digital form such as softcopy and others. This is the challenge faced by auditors, they must be able to overcome all of this by developing themselves and opening up to technology. This paper will discuss why an IT audit is needed, how to do it and the techniques and how an auditor can improve his or their skills.

## Literature Review

Information technology audits determine whether IT controls protect corporate assets, ensure data integrity and are aligned with the business's overall goals. IT auditors examine not only physical security controls, but also overall business and financial controls that involve information technology systems.(Cole, 2014) Initially, IT auditing (formerly called electronic data processing (EDP), computer information systems (CIS), and IS auditing) evolved as an extension of traditional auditing. (Senft & Gallegos, 2014).

According Cole, (2014) Because operations at modern companies are increasingly computerized, IT audits are used to ensure information-related controls and processes are working properly. The primary objectives of an IT audit include:

- Evaluate the systems and processes in place that secure company data.
- Determine risks to a company's information assets, and help identify methods to minimize those risks.
- Ensure information management processes are in compliance with IT-specific laws, policies and standards.
- Determine inefficiencies in IT systems and associated management.
-

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Auditability describes the ability of an auditor to achieve accurate results in the examination of a company's financial reporting (Nugroho, 2011 & Oktavia, 2015). Auditability depends on the company's financial recording practices, the transparency of its operational reporting, and the forthrightness of company managers in interacting with and providing their auditors with the required information. (Liberto, 2022).

To be successful in the twenty-first century, organizations need to have some presence on the Internet. Nearly all sales begin with a search on the Internet; it could be as simple as finding a certain type of store in an area, the phone number, or the address or direction to the store. Some organizations are completely "virtual" and only do business online. Products are not displayed in a physical store; instead they are completely dependent on photos posted on the Website. Others will incorporate tools that allow customers to zoom in and out, as well as to rotate the product to get a 360° view (Wardhani et al., 2021). The design of such systems may be complex, and management of it may be very difficult.

The virtual organization is critically dependent on the timely flow of accurate information throughout the organization. A good way to view how stringent the network requirements are is to analyze them in terms of the quality of telecommunications service. Most telecommunication experts believe that the network must be able to reach anyone anywhere in the world and be capable of supporting the sharing of a wide range of information, from simple voice, data, and text messages to cooperative transactions requiring the information updating of a variety of databases. The CEO and CIO want to meet or exceed their business objectives and attain maximum profitability through an extremely high degree of availability, fast response time, extreme reliability, and a very high level of security. (Senft & Gallegos, 2014).

### 3. Method

The data used in the preparation of this paper comes from the literature related to the problems discussed. The main references used come from online journals, scientific articles, news, books sourced from the internet. the type of data obtained is qualitative data. This writing method is a literature study. Information obtained from various literatures and compiled based on the results of the study of the information obtained. Writing strives to be interconnected with each other and in accordance with the topics discussed in order to facilitate the writing process. The collected data is selected and sorted according to the topic of the study. Then the writing is done based on the data that has been prepared logically and systematically. then processing with a descriptive analysis method based on secondary data. Conclusions are obtained after looking back at the background, literature review, and results. The conclusions drawn represent the subject matter of the paper that has been written, and are supported by practical suggestions as recommendations and material for further discussion.

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## 4. Result & Discussion

### 4.1 Result

According Senft & Gallegos, 2014 , the need for an IT audit function came from several directions: Auditors realized that computers had impacted their ability to perform the attestation function. Corporate and information processing management recognized that computers were key resources for competing in the business environment and similar to other valuable business resource within the organization, and therefore, the need for control and auditability is critical. Professional associations and organizations, and government entities recognized the need for IT control and auditability (Bakar et al., 2021). The breadth and depth of knowledge required to audit IT systems are extensive. For example, IT auditing involves the

- Application of risk-oriented audit approaches
- Use of computer-assisted audit tools and techniques
- Application of standards (national or international) such as ISO 9000/3 and ISO 17799 to improve and implement quality systems in software development and meet security standards
- Understanding of business roles and expectations in the auditing of systems under development as well as the purchase of software packaging and project management
- Assessment of information security and privacy issues which can put the organization at risk
- Examination and verification of the organization's compliance with any IT-related legal issues that may jeopardize or place the organization at risk
- Evaluation of complex systems development life cycles (SDLC) or new development techniques; e.g., prototyping, end user computing, rapid systems, or application development
- Reporting to management and performing a follow-up review to ensure actions taken at work

The auditing of complex technologies and communications protocols involves the Internet, intranet, extranet, electronic data interchange, client servers, local and wide area networks, data communications, telecommunications, wireless technology, and integrated voice/data/video systems. According to Weber (1999) there are four main objectives why it is necessary to audit information systems such as securing assets, maintaining data integrity, maintaining system effectiveness, and achieving resource efficiency. From the explanation above, it can be seen that it is very important for an organization or company to audit it and its control of information systems, to see whether the system that is running is right and whether the system is able to help achieve the goals of the company and the organization. Until now, there are still many organizations and companies that are not consistent in conducting audits and controls so that their investments in technology and information systems end up in vain. Auditors must learn new skills to work effectively in a computerized business environment. These new skills concern three fields:

1. Understanding of computer concepts and design system.
2. Ability to identify new or additional risks and know what controls are effective in reducing these risks.
3. A knowledge of how use a computer to audit computer.



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These are new skills needed to review technology computer.

In principle, the IT audit process is similar to a manual audit process which does not IT based. The only difference is that IT-based audits emphasize risk assessment done more. In the IT-based auditor process, a different approach is needed with the help of audit software. The role of the software helps the auditor's task to reviewing electronic audit evidence. Software will be very helpful especially in speed and the accuracy of the assessment considering that evidence of transactions in electronic form can reach thousand.

Overall audit techniques relating to computer-based electronic data processing can be divided into (Wilkinson J.W.; Cerullo M. J.; Raval V; Wong-on-wing B.; 2003):

- ✓ Auditing around the computer → this approach treats the computer as a black box. In essence this approach focuses on the inputs and outputs.
- ✓ Auditing through the computer → this approach opens the black box and directly focus on processing steps and edit checks and checks programmed. This approach handles real time and periodic processing applications directly where the audit trail is affected.
- ✓ Auditing with the computer → this approach uses either mainframe or microcomputer to assist in performing the steps in the program detailed audit. The process uses information technology in auditing. This approach is divided into two:
  - Microcomputer Audit-Assist Software → perform audits with assistance microcomputer or laptop with available software packages, for example excel
  - Audit Software → use audit software during substantive testing of company records files. For example; GAS (Generalized audit software)The use of audit software has several requirements and advantages

## 4.2 Discussion

Corporate and information processing management recognized that computers were key resources for competing in the business environment and similar to other valuable business resource within the organization, and therefore, the need for control and auditability is critical. Given the wide commercial and domestic use of EFTs, the need to regulate, monitor and control has been greater. Three U.S. federal laws which impact IT auditors.

- The computer fraud and abuse act - intent to access vs. cause damage (Morris vs. Unites States)
- The Computer Security Act of 1987- Ensuring the creation of and adherence to government IT related security standards as it pertains to the protection of information stored on government computer systems.
- The Privacy Act of 1974 What information pertaining to an individual are collected and maintained by the federal government. Permits an individual to prevent the information collected for a particular purpose being disclosed or used or another purpose without that individual's consent.Permits an individual access to information pertaining to him/her collected by the federal government and to make amendments to said information.Requires federal agencies to collect,



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maintain, and use any personal information in a manner that assures that such action is for a necessary and lawful purpose, that the information is current and accurate, and that safeguards are provided to prevent misuse of the information.

Discuss the skills needed to audit an information system. Are the skills technical or non-technical?

1. Interpersonal Skills - to interact with various levels of personnel.
2. Technical Skills - to understand the variety of technology used in information processing activity. Especially technology that impacts the company's financial statements.
3. They must gain an understanding of and a familiarity with the operational environment to assess the effectiveness of internal control.
4. Finally, the IT auditor must understand the technological complexities of existing and future systems and the impact they have on operations and decisions at all levels.

## 5. Conclusion

The benefits of IT in improving services and work processes of an organization are felt. With a large enough investment, it is necessary to ensure the reliability and security of the IT system that will be used. IT systems must also be able to meet the needs of work processes, be able to reduce the risk of data sabotage, data loss, service disruptions and poor management of IT systems. IT audits or what was once referred to as electronic data processing, computer information system, and IS audits, were originally an extension of conventional audits. In the past, the need for an IT audit function only came from a few departments. Then the auditors realized that the computer had affected their performance regarding the main function. Companies and information management are also aware that computers are a way out of resource problems to compete in a business environment even between departments. Therefore, there is an urgency to carry out control and audit of the ongoing process. That's when the professionals realized about the need for IT audits. IT audit is an integral part of the general audit function, because it will determine the quality of the information checked by computer systems.

At first, auditors with IT auditing skills were seen as ordinary technology resource staff, often seen as just technical assistants. Yet today, IT auditing is a job whose actions, objectives, and quality are regulated by global standards; there are rules of ethics; and professional. Of course this requires special knowledge and practical skills, previously also preceded by intensive preparation. From this brief explanation, it is clear that there will still be many challenges ahead for IT auditing. Each party must be able to work together to design, implement, and achieve the basic goals that have been generally achieved. The long process is like what has been carried out by the Consulting & Training (CT) Division of Gamatechno. IT audit is one of the services provided by the Consulting & Training Division of Gamatechno to support an effective and efficient information technology implementation process.



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## The Situation and The Problem with Computer-related Crimes

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### Abstract

This study aims to determine various situations and problems computer related crimes. Information technology plays an important role, both in the present and future. Advances in information technology, especially in the fields of computers and the internet, have proven to have many positive impacts on the progress of human life. The rapid development of Information Technology has also resulted in significant changes to accounting. Utilization of Information Technology as a supporter of the achievement of organizational goals and objectives must be balanced with the effectiveness and efficiency of its management. However, every positive side must have a negative side. Indeed, the development of computer-based information technology that is connect to the internet often used as a means and a medium for committing crimes. This research is based on a Theoretical Study or Literature Review to analyze what the situation and problems regarding computer crime are related to accounting information systems are in the audit process. Based on the results of the study, it was found that the development of computer-based information technology has given rise to cyber-crimes by using data or information to the internet. Such as crimes by falsifying data on important documents.

**Keywords:** Computer, Internet, Crimes, Human Life

### 1. Introduction

Computer-based information technology has a considerable influence in modern society, especially for corporate organizations. Today companies are faced with a changing and highly competitive environment. For this reason, the role of information technology is very important for companies to assist in improving business processes and decision making (Amrita & Marsudi, 2021). Business processes and decision making will be better if the company applies information technology properly and correctly, for this reason a good internal control process is needed for information technology applications that exist within the company and at the same time conducts a continuous, regular and independent audit process on information systems which exists (Arens et al., 2014).

An Accounting Information System that is done manually can now be done with the help of a computer, namely a computer-based Accounting Information System. The process in manual and

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computer-based accounting is not much different, the difference in computer-based information systems is only in data entry or transactions, this in the general ledger will change and can directly change the Financial Report as well. The more advanced IT is, the more influence it has on the accounting field. The real impact is that data processing has changed from a manual system to a computer system (Laudon et al., 2020). The development of accounting related to computer-based AIS in producing financial reports will affect auditing practices. Changes in the accounting process will affect the audit process because auditing is a field of practice that uses financial statements (accounting products) as its object.

IT advancements also affect the development of the audit process (Committee of Sponsor Organizations of The Treadway Commissions, 2015). Advances in audit software facilitate computer-based audit approaches. Accountants are professions whose activities are related to IT. This change in control and processing methods gave rise to new methods of auditing. Auditors use special software designed for them to use in performing audits of computerized applications (COSO, 2015). This is the software needed to filter data from computer files. Auditors must learn new skills to work effectively in a computerized business environment.

This study aims to determine various situations and problems regarding computer crime are related to accounting information systems are in the audit process. The emergence of several cases of cybercrime, such as credit card theft, hacking several sites, intercepting other people's data transmissions, such as e-mail and manipulating data by preparing unwanted commands into computer programs (Grant Thornton, 2019). So that in computer crimes it is possible to have formal offenses and material offenses. Formal offense is the act of someone entering someone else's computer without permission, while material offense is an act that causes harm to other people.

## 2. Literature Review

Development technology Internet which so fast like now this demand knowledge from users, which normal known with Internet knowledge. Internet knowledge refers to on quality individual in usage Internet which developed from time to time (Potosky, 2007). In use Internet, there is two knowledge that is declarative and procedural (Sternberg & Sternberg, 2012). Knowledge declarative refers to on knowledge of existing terms in the cyber world, while knowledge procedural refers to understanding and skills in use Internet.

Knowledge Internet is factor urgent for public in prevent cyber crime (Nasution et al, 2021). With Internet good knowledge, netter in this case SMEs, will know the positive impact and negative which could caused. So that will increase awareness cyber security (cyber security awareness ) so that avoid from cases cyber crime.

In cope case cyber crime which there is, required understanding about cyber security (cyber security) from user Internet. Cyber security is the ability to protect and endure to cyber attack (Kissel, 2013). Cyber security as fortress defense for netter will different Among one individual with individual which other. Thing this because difference level awareness (awareness) that exists in each user. Cyber security awareness is activity in center whole attention individual in resolve series



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problems that exist in the cyber world (Hapsari and Marsudi, 2018 and Nasution et al., 2021). So that for could optimizing cyber security from attack crime which there is required cyber security awareness for every user.

Fraud using a computer is wrong representation fact which no honest which meant for let-right person other do something which causing loss. In this context , fraud the conducted de- just method:

- Changing in an unauthorized way. It requires some technical expertise and it is form of general theft by an employee which change data or input data false or with enter in- structure which no legitimate or to use process which invalid.
- Change, destroy or steal the output, usually to hide sound unauthorized transactions. This difficult detected;
- Changing or deleting data stored.

Other forms of fraud can be facilitated bag with use system computer, including bank fraud, carding, identity theft, extortion and stolen secret information. Various fraud Internet many to base phishing and social engineering the target is usually the consumer and business people. Therefore, every company, business entity, etc, that implements a computer-based information system is required to conduct an audit process of the company's information system to find out whether there are problems related to computer related crimes and maintain the quality of information from any situation and problem with computer-related crimes.

### 3. Methods

This research is based on a Theoretical Study or Literature Review to analyze what the situation and problems regarding computer crime are related to accounting information systems are in the audit process. In writing this paper, this research method which the author use is a normative juridical research method by collecting library materials collected in secondary data. Secondary data are library materials that include official documents, library books, laws and regulations, scientific works, articles, and documents related to research materials. Secondary data can be obtained from various sources such as primary legal materials, secondary legal materials and tertiary legal materials.

### 4. Results and Discussion

#### 4.1. Results

Crime this conducted by groupselected criminal. Not like crime which use computer astool, crime this need want- technical knowledge of the perpetrator. By demi- increasingly along development technology,so develop also characteristic crime-his. Crime this relatively new in computer history, which explains some of the without the preparation of society and the world In general, to eradicate crime this hat. There are many evils of naturethis is done every day on the internet. Crime which especially target network computer or device to include *Virus* computer, *Denial-of-service attacks*, *Malware (malicious code)*, etc.



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When individual is target main *cybercrime*, computer can be considered as a tool rather than a target. Crime this generally does not involve expert technical. Weakness man generally exploited. Damage which handled part big character psychological and no form, make action hu- kum against this variant is more difficult. here evil that has existed for centuries in world *offline*. Fraud, penstolen, and the like already exist even before development equipment to technology tall (Federal Bureau of Investigations, 2019). Criminal which same only given a tool that increases po- the victim's tension and make it kin hard to track and arrested.

In relation to cyber attacks, Indonesia has a Cyber and Password Agency Country (BSSN) which formed based on Presidential Decree No 53 year 2017 and perfected with Presidential Decree No 133 year 2017 (National Cybersecurity Operations Center National Cyber and Crypto Agency, 2020). BSSN is transformation of the National Crypto Agency and Directorate of Information Security, Directorate General Application informatics, Ministry Communication and informatics. Its task is to carry out cybersecurity effectively and efficiently by leveraging, developing and consolidating all element which related to security cyber.

Laudon (2020) disclose Technology Information (IT) cover *hardware* and *software* that a company needs to achieve its goals business. Thing this cover machine computer, technology storage, phone handheld which is currently also used intensively for business, as well as various computer program which used in the business world. Development technology moment this the more massive and fast with the development of the use of network data via the internet in the industrial era 4.0. (Marsudi and Widjaja, 2019 and Marsudi & Dionysus, 2020)). The role of IT has a significant impact on the System Information Accountancy (DRAIN). Impact which seen by significant is processing data changed from system by manual to system by computer.

According to Marina et al (2021), AIS is useful as a management tool for get information, analyze, and make decision. Besides that useful as tool for account for answer authority which has delegated to levels in underneath and executor.

## 4.2. Discussion

The IT audit and cybersecurity planning process is also constantly evolving in the face of cyber attacks. The cybersecurity process includes identification, protection, detection attack, response on attack, and recovery post attack. Identification covers inspection system IT which used by enterprise and cybersecurity design (Shulha et al., 2022). In this phase it is necessary to know who which Possible attack company, what which Becomes target attack, tactics what which Possible used. Phase protection is implementation security cyber and development vigilance on attack cyber and training. The IT system is implemented supported by training for employees to achieve a culture of vigilance. The detection phase includes cyber risk monitoring, search for potential threats, and respond to incidents that occur. Supervision cyber risk includes checking whether the controls in the system are effective countering the threat of attack along with the search for potential threats that will appear. When a cyber attack occurs, the response phase includes digital forensics and evaluation standard security. In phase this need known by details how attack could occur and how system can respond on attack the. Standard security will rated and conducted review. Phase recovery includes

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penetration testing, supply chain monitoring, and assessment risk cyber as well as endurance cyber. System need checked with test penetration to see how the system that has implemented the standard reacts security. Chain supply company like vendors which no apply security cyber Becomes threat entrance attack cyber so that need monitoring the extent to which the supply chain resilience of the company. and on finally expected to be created enterprise cyber resilience.

Security technology information and control internal related close in the face of changing cyber risks. Understanding attack risk Cyber is the responsibility of all personnel, not just a problem part IT is Thing which need emphasized by management. Door enter attack cyber can through access to site vulnerable, download files free, password which simple, and Thing other which can conducted by all unresponsive personnel. Mitigation that can be done is through: response planning to cyber attacks, simulation of training in the face of attack cyber, endurance cyber suppliers and customer related close with security corporate cyber, option insurance cyber, and training employee.

## 5. Conclusion

Advances in business digitally lead to an increased risk of cyberattacks. Due to the risk of cyber attacks, there is a response to reduce the impact of losses on company. Response the in the form of development in world security information technology and adaptation of internal control within the company. Information technology security and internal control are closely related in the face of cyber attacks. The risk of cyber attacks is the responsibility answer whole personnel company. By because that needed planning response by thorough and review by sustainable.

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## The Top Ten Reasons for the Start Up of IT Auditing?

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### Abstract

As businesses increasingly we use all of facility from technology, use of technologies of all kinds. We use smart phones, smart TVs, smart applications, numerous and various types of informational technology applicable in all kinds of workloads. In the perspective of a worker and the company's manager, the use of informational technology has a great benefit because of some inherent advantages, such as easy access to information, reduction of working time, ease of work control and so on, and now to process accounting and auditing systems, auditors must gather critical information more efficiently. Such tools and techniques as electronic data interchange, the Internet and other modern technological subjects signal the end of the traditional audit. IT auditing involves assisting public or private organizations in ensuring that their information technologies and business systems are adequately protected and controlled. Consequently, IT auditing professionals need to have a solid grounding in information technology, information assurance, auditing process. In the future, paperless audits will become commonplace as audit clients increasingly shift to paperless systems and audit software is developed that allows auditors to complete most procedures on-line. To audit on-line systems, auditors will have to incorporate on-line audit software as their primary audit tool and gather evidence electronically. Assesses the current impact of technology on the audit process and discusses the future implications of technological trends for the auditing profession. and there're many reasons to start up IT auditing. The purpose of this paper is to find the top ten reasons for the build an IT auditing and how IT auditing is very Important nowadays.

**Keywords:** Technology, Information, Auditing, Auditor

### Introduction

Information systems audit is part of the overall audit process, which is one of the facilitators for good corporate governance. Although there is no single universal definition of an information systems audit, IT audit defined it (EDP audit – as mentioned earlier) as “the process of collecting and evaluating evidence to determine whether computer systems (information systems) Weber (1999) protect assets, maintain data integrity, achieve organizational goals. effectively and use resources efficiently.

Information systems are the lifeblood of any big business. As in previous years, computer systems not only record business transactions, but also drive the company's key business processes (Yulisfan



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and Nedelea, 2021). In such a scenario, senior management and business managers have concerns about information systems. The purpose of an information systems audit is to review and provide feedback, assurance, and advice. These concerns can be grouped in three main ways:

1. **Availability:** Will the information systems on which the business depends heavily be available to the business at all times when needed? Is the system well protected against all kinds of losses and disasters?
2. **Confidentiality:** Will the information in the system be disclosed only to those who have a need to see and use it and not to others?
3. **Integrity:** Will the information provided by the system always be accurate, reliable, and timely? What ensures that no unauthorized modifications can be made to the data or software in the system?

## Literature Review

### *Audit*

According to Sanyoto (2007), what is meant by audit is the process of collecting data and assessment of evidence about information to determine and report on conformity of the information with the criteria that have been set and carried out by a competent and independent person.

### *System*

According to Kadir (2003), the system is a set of elements that interrelated or integrated intended to achieve a goal, as an illustration if in a system there are elements that do not provide benefits in achieving the same goal, then these elements can be definitely not part of the system. Meanwhile, in accord with Jogiyanto (2005), a system is a network of related procedures, come together to perform an activity or to complete a certain goal. According to Sanyoto (2007), the system is a collection of elements or resources that are interrelated in an integrated manner, integrated in a certain hierarchical relationship, and aim to achieve certain goals. Based on the expert opinion above, the system is a collection of two elements or more that are interrelated and integrated to achieve a goal the same particular.

### *Information*

In everyday life an information that can be interpreted as data. The data is a value, state, and has a standing character itself regardless of any context. According to Jogiyanto (2005), information is data that is processed into data form that is more useful and more meaningful to those who receive it. According to Laudon and Laudon (2007), states that information itself means data that has been formed into something meaningful and useful for humans. According to Sanyoto (2007), states that information is data that processed into a form that is more useful, more useful, and more meaningful to who received it.

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## *IT Audit*

According to Weber (1999), information systems audit is the process of collecting and evaluating evidence to determine whether computer systems can protect assets, maintain data integrity, enable organizational goals to be achieved effectively and use resources efficiently.

According to Hall (2011), CAAT is a computer-based audit tool that is used to perform various application control tests and data extraction (Weber, 1999). CAAT has 3 levels including 1) auditing around the computer; 2) auditing through the computer; and 3) auditing with the computer. Furthermore, CAAT is also divided into two elements, namely software and techniques (Hudson, 2004). As for this study, the application of CAAT on the use of generalized audit software (GAS) which is the highest application and technique in auditing.

## *COBIT*

According to Sasongko (2009), “Control Objective for Information & Related Technology (COBIT) is a collection of best practice documentation for IT Governance that can help auditors, users (users), and management, to connect the gap between business risks, control needs and problems related to IT governance. IT technical problems”. According to Tanuwijaya and Sarno (2010), “COBIT supports IT governance by providing a framework for managing the alignment of IT with business. In addition, the framework ensures that IT enables business, maximizes profits, IT risks are managed appropriately, and IT resources are used responsibly.” COBIT is one of the frameworks used for auditing standards, COBIT is a standard that is considered complete and comprehensive in scope as an audit framework. COBIT is periodically developed by ISACA. In this COBIT there are several Domains that are used for the audit process.

## **Methods**

Stages of Analysis Methodology:

- 1) System policy and planning. Basic System Planning Policy and Guidelines for developing the system.
- 2) Design analysis. Design Analysis Is identifying and evaluating how to describe a system.
- 3) System selection. System selection is the selection stage to select hardware and software for information systems.
- 4) System implementation. System implementation Is the stage of system implementation that will be carried out if the system is approved including the program that has been made at the system design stage so that it is ready for operation.



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The performance expectancy in this study as the degree to which an auditor believes he or she will make progress in audit task performance when implementing IT on auditing by employing Computer Assisted Audit Technique and Tools or well-known as CAATs. The strongest predictor of intention to use a system is performance expectancy (Yulisfan et al., 2021). It is based on the constructs of perceived usefulness, job fit, relative advantage, and result anticipation (Bakar et al., 2021, Shulha et al., 2022 and Zainal et al., 2022). The perceived utility of a system has a direct impact on its actual use. The perceived utility of IT/IS can be determined from the IT/IS feature. It has been discovered that implementing audit software in a large accounting firm reduces the time spent preparing working papers. The audit professionals' decision-making process is aided by the electronic presentation of accounting data (Sudha et al, 2022). If an auditor's performance expectation rises, so does the auditor's intention to employ CAATs.

## Results and Discussions

### Results

The main challenge of an information systems audit often involves finding and recording highly technical observations. Such technical depth is required to conduct an effective information systems audit. At the same time, audit findings need to be translated into vulnerabilities and business impacts that can be linked to operations managers and senior management (Reegu et al., 2022). Therein lies the main challenge of an information systems audit.

To start up the IT auditing, an IT auditor is needed. There are Top Ten Reasons to be an IT auditor:

*Reason 1:* It usually pays better than financial auditing.

*Reason 2:* The auditing is working with technology all day.

*Reason 3:* Able to constantly learn about technology without having to implement and support it.  
And when the auditors identify problems, they get to provide guidance on how to fix them, but they don't have to fix them.

*Reason 4:* Can cross pollinate ideas from one area of the company to another (or one division to another).

*Reason 5:* Get to do some impressive data analytics to discover misconfigurations, anomalies, trends, and more.

*Reason 6:* Sometimes the auditor's work enables IT to get the funding that it needs, which it hasn't been able to get on its own.

*Reason 7:* Get a broad overview of all company operations and get to know people in all



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departments. That helps the auditors know whether they want to stay with that company or whether to leave it before it implodes. If they choose to stay, all those contacts will be valuable in advancing into other areas of the company.

*Reason 8:* Can work hand-in-hand with security to raise risk awareness.

*Reason 9:* Can uncover fraud, mischief, ignorance, and just plain laziness. Either way, is to add the value of the business.

*Reason 10:* Have access to all systems, data, and people with a business reason.

## Discussions

An Information Technology Audit can be carried out in various stages (Rosli et al., 2012). The audit stages consist of 5 stages as follows 1) preliminary examination stage, 2) detailed inspection stage, 3) phase of conformity testing, 4) the stage of testing the truth of the evidence and 5) the general assessment stage of the test results.

*Preliminary Examination Stage.* Before the auditor determines the nature and extent of the tests to be performed, the auditor must understand the auditee's business (policies, organizational structure, and practices). After that, audit risk analysis is a very important part. This includes a review of internal control. In this stage, the auditor also identifies important applications and seeks to understand the controls over the transactions processed by those applications (Lin and Chen, 2009). At this stage the auditor can decide whether the audit can continue or resign from the audit assignment.

*Detailed Inspection Stage.* At this stage the audit seeks to obtain more in-depth information to understand the controls implemented in the client's computer system. The auditor must be able to estimate that the results of the audit in the end should be used as a basis for assessing whether the internal control structure applied is reliable or not. The strength of the control will be the basis for the auditor in determining the next steps.

*Conformity Testing Phase.* At this stage, a detailed examination of account balances and transactions is carried out. The information used is in data files which usually have to be retrieved using CAATTs software. The database approach uses CAATTs and substantive testing for the Winariyani Computer Faculty Section 01 22 to check the integrity of the data. In other words, CAATTs are used to retrieve data to determine the integrity and reliability of the data itself.

*Stage of Testing the Truth of Evidence.* The purpose of the proof-testing stage is to obtain sufficiently competent evidence. At this stage, the tests carried out are (Reegu et al. 2022):

- 1) Identify errors in data processing.
- 2) Assess data quality.
- 3) Identify the inconsistency of a data.
- 4) Comparing data with physical calculations.
- 5) Confirm data with sources from outside the company.



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*General Assessment Stage on Test Results.* At this stage the auditor is expected to have been able to provide an assessment of whether the evidence obtained can or does not support the information being audited. The results of the assessment will be the basis for the auditor to prepare his income in the audited report. The auditor shall integrate the results of the process in the applied audit approach to the applied audit. The audit includes the internal control structure implemented by the company, which includes:

1. General controls.
2. Application control, which consists of:
  - (a) Manual control.
  - (b) control over the output of the information system.
  - (c) Programmed controls.

## Conclusion

IT audit is an IT audit is a form of supervision and control of the information technology infrastructure as a whole. This information technology audit can run in tandem with financial audits and internal audits, or with other similar monitoring and evaluation activities. At first this term was known as electronic and processing audit, and now information technology audit is generally a process of collecting and evaluating all information system activities within the company.

The importance of IT audits for companies:

- 1) Increase the credibility of the financial statements so that the reports can be trusted for the benefit of parties outside the entity such as shareholders, creditors, the government, and others.
- 2) Prevent and find fraud committed by the audited company management.
- 3) Provide a more reliable basis for the preparation of Tax Returns submitted to the Government.
- 4) Opening the door for the entry of external sources of financing.
- 5) Disclosing monetary errors and irregularities in financial records.

Seeing the importance of IT audits for companies, there are still companies that do not prioritize IT audits. There are several reasons why companies have not conducted IT audits, including the following:

- The company feels that the IT implemented is still only a support tool, not a strategic tool
- Policies and objectives for implementing IT are not very clear
- The value of IT investment that is not considered significant compared to the company's financial value.
- Lots of IT technical jargon that is difficult for top management to understand.

How many times is the IT audit conducted? IT audits are usually conducted once a year. The company may conduct an audit on a monthly or quarterly or quarterly basis if necessary. However, in general, companies only conduct audits at the end of the year, considering that the audit must be carried out by a Public Accounting Firm which is an independent third party, which means that the audit every time requires a fee.



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Through the audit, the company's management can also get input on accounting procedures to make them better or on which procedures are apparently not implemented properly. In principle, the audit minimizes the opportunity/possibility of fraud, theft, errors, and similar things that may occur, which are carried out by company employees, whether intentional or not.

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## Role of Asynchronous Transfer Method (ATM) on Corporate

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### Abstract

This study aims to explain the unfamiliar term of “Asynchronous Transfer Mode” and its benefits in company. It is safe to say that companies nowadays depends on technology. And one of it is the asynchronous transfer mode that is a “special” network. This ATM is like a tool to boost the internet speed. But ATM can only be used to boost the internet speed if connected to some kind of signals like frame relay or SONET. ATM is also service-independent. All services (data, pictures, sound, etc) can be transmitted through ATM by setting some types of ATM Adaptation Layer (AAL). AAL changes the original format of information into the ATM format, so that the information can be transmitted. ATM works by dismembering, then recombining the varying types of information (voice, video, data, etc) in a 53-byte cell format through the same physical channel. That kind of process named statistical multiplexing. In short, ATM is a double-layered technology, that can be used by anyone, and also is a public network as well as internet, with a neatly managed addressing system that every device in a network can has a unique identity. ATM has such benefits as supporting services for all types of applications currently available and application developments in the future, providing very high utilization of network resources, reducing switching complexity, and so on. With that kind of benefits, ATM is a very useful tools for companies.

**Keywords:** Asynchronous transfer mode, company technologies, ATM layers.

### 1. Introduction

It is known that communication technology is a general thing nowadays. In every aspect, people use the communication technology. With the existence of communication technology, we are able to reach people all over the world. And for that to be happened, the system receives messages from the sender, then translates it into signals that can be read by the system (Prima and Muda, 2021). After that, the system sends the translated messages to receiver’s system and then translates it again from signals into real messages that can be read by user.

These days, communication technology often be considered as a unity with information that later is called information and communication technology. And among the system, there is a thing called asynchronous transfer method (ATM). This ATM is like a tool to boost the internet speed. But ATM can only be used to boost the internet speed if connected to some kind of signals like frame relay or SONET. Further about the ATM, this technology is a double-layered technology that actually can be



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used by everyone (Liu, 2022). This technology has a neatly organized IP address so that every device on this network could have a unique identity. This paper reviews how ATM works inside the network and can be useful for users, especially on corporate.

## 2. Literature Review

Asynchronous is a digital technology that deals with fixed time intervals coordinated by a clock, as data is transmitted one byte or character at a time (Zainal et al., 2022). The word 'asynchronous' in ATM means that the data transfer is carried out asynchronously, which means the sender and the receiver, respectively, is not necessarily seemed to have the same or synchronized time. Asynchronous transfer mode (ATM) is a network technology platform and communication infrastructure that can be used by telecommunications networks for digital transmission (Shulha et al., 2022). Each cell is 53 bytes long consisting of a 5-byte header and a 48-byte payload.

Unlike other more common data link technologies, say, Ethernet, ATM does not involve routing. ATM uses fixed-sized cells instead of cells with varying lengths. There are two characteristics offered by ATM to fix the speed level of data transfer. The first characteristic compares the communicated packets with protocols for telephone systems. And the second one is increasing the speed.

ATM is service independent. All services (data, pictures, sound, etc) can be transmitted through ATM by setting some types of ATM Adaptation Layer (AAL) (Asante et al., 2022). AAL changes the original format of information into the ATM format, so that the information can be transmitted (Dubey et al., 2022). ATM can be implemented on networks in three ways, sorted from the easiest to the most difficult are Native ATM APIs, Classical IP and Address Resolution Protocol and LANE Native ATM APIs. Classical IP is limited only for network with TCP/IP protocol, while LANE could use any kind of protocol. LANE allows existing applications and protocols to operate without changes when ATM is applied (Tokhirov 2021). It means that company does not have to ditch the existing application or network infrastructure. Consequently, there are so many companies in USA using ATM system.

ATM works by dismembering, then recombining the varying types of information (voice, video, data, etc) in a 53-byte cell format through the same physical channel. That kind of process named statistical multiplexing. Through that method, information from the user is transmitted among other information using an information packet addressed to the ATM cell of 53 bytes consisting of 48 bytes containing information and 5 bytes of headers. The cells are identified by labeling the header of each cell and transmitted according to a pre-arranged sequence.

In short, ATM is a double-layered technology, that can be used by anyone, and also is a public network as well as internet, with a neatly managed addressing system that every device in a network can has a unique identity.

Here are some characteristics of ATM:



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1. They do not use error protection and flow control on the *link to link basic*; Error protection can be ignored because of these times, the links on network have a very high quality that control of error can be done enough by end-to-end.
2. ATM operates on connection oriented mode; Before information transferred from terminal to network, a setup logical/virtual connection phase should be done to provide the necessary resource. If the available resources are insufficient, then connection from terminal is canceled.
3. Reduction of header function; If header functions are limited, the implementation of header processing in ATM's node can be way too easier and simpler and can be done at the very high speed (150 Mbps - 2,5 Gbps) and also this will cause low processing delay and queuing delay.
4. ATM protocol layer; ATM layer is the layer for connecting to protocol. Physical layer involves specification of transmission media and signal-coding-scheme.
5. Length of the filed information in one cell is relatively small; It is done to reduce the internal buffer size in switching node, and also delimit queuing delay happened on that buffer.

### 3. Methods

On this section, we will provide more detailed informations about ATM. ATM's network is formed by ATM switches and ATM endpoints. ATM switches are responsible for transiting cells through the ATM network. ATM switches also have responsibility for several things: 1). Receiving cells from ATM endpoints or other ATM switches; 2). Reading and updating the header information of the cells and switching it into the destination.

Not only ATM switches have the responsibilities, but also ATM endpoints. ATM endpoints is tasked to be an adapter for the ATM network, such as workstations, router, LAN switch, video CODEC, Digital Service Unit (DSU).

Data blocks with various sizes transmitted by user from the highest layer will be sent back to the AAL (ATM Adaption Layer), which in this process, headers, trailer, padding octets, and CRC (Cyclic Redundancy Check) bits depend on certain condition on each data block.

Next, each data block will be divided into several smaller data blocks which then will be revealed to 53 octet cells in the ATM layer. This data will be sent to the desired destination.

Protocol reference model involves three different levels:

- User level: Available for transfer of information between users, together with related controls.
- Control level: Display functions of call control and connection control.
- Management level: Display management functions related to the whole system.

### 4. Result and Discussion

#### 4.1. Results

In ATM networks, all information is formatted into fixed-sized cells consisting of 48 bytes (8 bits per byte) in the form of payloads and 5 bytes in the form of headers (Kodkin et al., 2022). Fixed cell size



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ensures that the quality of the data, whether voice or video, is not affected by the data frame or packet length. These headers are structured for high speed switching efficiency.

The ATM layer is a layer above the physical layer which has characteristics that are independent of the physical media used.

- a) The ATM network is a connection-oriented network. To make an ATM call requires sending a message first to set up a connection. After that, all subsequent cells follow the same trajectory to reach the destination machine after all messages have been sent then the connection is disconnected. To achieve high transfer speeds, an ATM network uses special hardware and software techniques, namely:
- b) An ATM network has one or more high-speed switches, which are connected to computer hosts or other ATM switches.
- c) ATM uses optical fiber for connections, including connection from the host computer to the ATM switch, which provides a higher transfer rate than copper cable. Usually the connection between the host computer and the ATM switch is between 100-155 Mbps.
- d) The lowest layer of the ATM network uses fixed-size frames called cells. Because each cell is the same length, the ATM switch hardware can process cells quickly.

ATM is able to handle all types of communication traffic (voice, data, image, video, high-speed voice, multimedia and so on) in one channel and at high speed). ATM can be used in Local Area Network and Wide Area Network (WAN). In LAN construction, the use of ATM can save costs because Users who will connect themselves to the LAN ATM system can use adapters to provide transmission speed according to the bandwidth they need.

ATM have the following benefits:

- 1) Support services for all types of applications currently available and application developments in the future.
- 2) Provides very high utilization of network resources.
- 3) Reduced switching complexity.
- 4) Reduces processing time on intermediate nodes and supports ultra-high-speed transmission.
- 5) Reducing the required buffer size at intermediate nodes to avoid delays and complexity of buffer settings.



- 6) Ensure the performance required by the current application and its development in the future.

### ATM has 3 layers:

#### 1) Physical Layer:

The physical layer is concerned with the physical medium, namely: voltage, bit timing and other similar problems and involves the specification of the transmission medium and the signal coding scheme. Data rate at Physical Layer: 25.6 MBps to 622.08 MBps. The physical layer is divided into 2 (two) sub layers, namely: PMD (Physical Medium Dependent) and TC (Transmission Convergence). PMD is an interface for the transmission media (cable, radio gel etc.) The PMD sublayer transfers the bits of information and handles the timing of the corresponding bits.

TC's job is to convert the bit stream into a cell stream for the ATM layer. The TC sublayer is responsible for handling all the problems related to marking the start and end of cells in the bit stream . When cells are transmitted, the TC sublayer sends them a string of bits to the PMD layer and the TC sublayer gets a pure stream of incoming bits from the PMD layer. The physical layer of the ATM protocol is a mixture of the physical layer and the data link layer of the ATM protocol.

#### 2) ATM Layer:

ATM Layer is used for various forms of services and data transfer capabilities (determining the transmission of data in a certain packet size). When viewed from the OSI protocol, the ATM layer performs the tasks performed by the data link layer and the network layer in the OSI protocol.

The OSI data link layer is concerned with the formation of frames and transfer protocols between two machines on the same physical cable (or optical fiber). The data link layer protocol is a single-hop protocol. These protocols are not concerned with end-to-end connections because there can be no switching and routing at the data link layer. The network layer is the layer that connects sources to destinations, so this layer involves switching and routing (that is, it is multihop).

The ATM layer functions to move cells from source to destination and involves routing algorithms and protocols found in ATM switches. The ATM layer is also concerned with global addressing  
The ATM layer performs the following main functions:

- Cell multiplexing/demultiplexing, in the direction of sending cells from individual VP (Virtual Path) and VC (Virtual Channel) will be multiplexed to produce a cell stream. On the receiving side, the cell demultiplexing function will separate the received cell stream into individual cell flows to the related VP and VC.
- Translation of VPI and VCI. The translation of VPI (VP Identifier) and VCI is done at the ATM switching node. In the VP node the value of the VPI field for each incoming cell will



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be translated to the new VPI value for the outgoing cell. On the VC switch, both the VPI and VCI values will be translated to the new VPI and VCI values.

- Generating / splitting the cell header, this function is applied to the termination points of the ATM layer. In the sending direction, the information field received from AAL is added to the ATM cell header (except the HEC field) and the VPI and VCI values from the cell header can be obtained by translating the SAP (Service Access Point) identifier. In the receive direction, the header cell split function will separate the header cells, and only the information fields are passed to AAL.
- Generic Flow Control (GFC). The GFC function is only used on BISDN UNI (User Network Interface) only. GFC is used to support control of ATM traffic flow in one customer network and can be used to reduce overload conditions on UNI. GFC information is superimposed in the assigned and unassigned cells.

### 3) ATM Adaptation Layer (AAL):

AAL maps information from the Higher layer into ATM cells to be transported throughout the network and vice versa collects information from ATM cells to send to the Higher Layer

AAL is divided into 2 (two) sub layers, namely SAR (Segmentation and Reassembly) and CS (Convergence), the lower sub layer breaks down packets into cells on the transmission side and recombines them at the destination. The upper sub-layer enables the ATM system to offer other forms of service for various applications (e.g. file transfer, video, on-demand requests for different requirements for error handling, timing etc.)

Besides consisting of the three layers above, this reference model also consists of 3 planes, namely:

- User Plane (U-Plane) which has a function to transmit information from users transparently.
- Control Plane (C-Plane) is in charge of sending the necessary information to control connections from the user plane (establishing/disconnecting a connection, monitoring the characteristics of a connection, etc.)
- The Management Plane (M-Plane).

ATM Losses:

1. Costs are still relatively high
2. Higher complexity: Complex mechanisms to achieve QoS (Quality of Service)
3. Overhead cell header (5 bytes per cell)



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## 4.2. Discussion

ATMs are needed in business because there are several developments in business needs, including:

- Changes in operations from centralized to distributed
- The existence of a distributed processing & client server paradigm
- LAN/MAN/WAN interconnection requirements
- Significant increase in inter-LAN traffic
- Bandwidth on demand

With the ATM, there is a network that can be used to carry all types of traffic and connections between networks.

## 5. Conclusion

Asynchronous transfer mode; when the speed of the I/O device is slower than that of the microprocessor, many companies prefer the asynchronous transfer mode. As the speeds of both the devices differ, the I/O device's internal timing is entirely independent of the microprocessor. Because of that, they are termed to be 'asynchronous' from each other. The term 'asynchronous' itself means "at irregular intervals".

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## A Study on the Production and Export of Mangoes from India

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### Abstract

Mango (*Mangifera indica* Linn) is the most important fruit of India and is known as “**King offruits**”. The fruit is cultivated in the largest area i.e. 2,312 thousand ha and the production is around 15.03 million tons, contributing 40.48% of the total world production of mango. The main mango producing states in India are Uttar Pradesh (23.86%), Andhra Pradesh (22.14%), Karnataka (11.71%), Bihar (8.79%), Gujarat (6.00%) and Tamil Nadu (5.09%). Total export of mangoes from India is 59.22 thousand tons, valuing Rs. 162.92 crores during 2010-11. India exports mango to over 40 countries worldwide. The major importing countries of India’s Mangoes during the period of 2015-18 were UAE (61.79%), Bangladesh (11.41%), UK (8.92%), Saudi Arabia (3.79%), Kuwait (2.32%), and Bahrain (2.19%) respectively.

**Keywords:** *export, import, production, cultivation of mangoes*

### Introduction

#### India Scenario

Mango is grown almost in all the states of India. Uttar Pradesh tops the list of mango producing states. Other major producing states are Andhra Pradesh, Maharashtra, Karnataka, Bihar and Gujarat. Rest of the states has quite less production

#### World Scenario

Mango covers an area of 4946 thousand ha with a production of 37.12 million tons in the world during the year of 2010. India occupies top position among mango growing countries of the world and produces 40.48% of the total world mango production. China and Thailand stood at second and third position among mango producing countries in the world with 4,366 and 2,551 thousand tons respectively. The other major mango producing countries in the world during



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2015 were Thailand (2550 thousand tons), Pakistan (1784 thousand tones), Mexico (1633 thousand tones) and Indonesia (1314 thousand tones) respectively. The details are given below in the table. The growing market demands both domestic and export for organically grown fruits and vegetables compel us to learn to grow ORGANIC MANGO. This is a simple and basic study to help mango growers produce naturally grown mango free from toxic chemical residue, using both herbal organic concentrates and biotechnology with integrated pest management. Let us remember that in the 1950s and earlier, before Dr. Ramon Barba discovered Potassium nitrate as a good mango flower inducer; mangoes in the Philippines were not sprayed and cared the way we do today, yet they were producing good quality fruits, growing the natural way. Mango (*Mangifera indica*) is the national fruit of the Philippines. It has a wide market potential both domestic and international exports. It is a high value crop where mango grower can earn from P100, 000.00 to P500, 000.00 per hectare a year, provided planted at the right distance of 20x20 m+1, with a population of 50 hills per hectare and properly cared.

It is suitable on upland areas with abundant sunlight and adequate moisture. Mango is a perennial crop that three or more family generation can benefit. It is a good retirement insurance, tree crop where production increases, as trees grow bigger and older. It is considered the King in all the fruits in India. Mango (*Mangifera indica* L.) is the most important fruit of India. It is grown over an area of 1.23 million hectares in the country producing 10.99 million tonnes. It accounts for 22.1 per cent of total area (5.57 million ha) and 22.9 per cent of total production of fruits (47.94 million tonnes) in the country. Though Uttar Pradesh has the largest area of 0.27 million hectares under mango, Andhra Pradesh has the highest productivity of 12 tonnes per hectare.

## Overview of Topic

- ✓ It is considered the King in all the fruits in India. Mango is the most important fruit of India.
- ✓ It is grown over an area of 1.23 million hectares in the country producing 10.99 million tonnes. It accounts for 22.1 per cent of total area (5.57 million ha) and 22.9 per cent of total production of fruits (47.94 million tonnes) in the country.
- ✓ Uttar Pradesh has the largest area of 0.27 million hectares under mango, Andhra Pradesh has the highest productivity of 12 tonnes per hectare. While Andhra Pradesh produces 3.07 million tonnes of mango, U.P., Bihar and Karnataka produce 2.39, 1.79 and 0.92 million tonnes, respectively.



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- ✓ India ranks first among world's mango producing countries accounting for 52.63 per cent of the total world's mango production of 19 million tonnes.
- ✓ We are focusing on building a community of Mango Farmers, Processors, Traders, Dealers, Freight Forwarders, Sellers and Buyers, Services Providers
- ✓ Our emphasis is to provide support for exporting mangos from India to any part of the world
- ✓ Initial preference is Gulf Cooperation Council (GCC) Countries which include United Arab Emirates, Kingdom of Saudi Arabia, Kuwait, Kingdom of Bahrain, Qatar and Sultanate of Oman.
- ✓ Mango growers can produce mango fruits during the off-season especially in Mindanao, being outside the typhoon belt. Other areas of the country with less expected typhoon and heavy rains might venture into producing off-season fruits as the supply is low, demand is high and price is good
- ✓ Producing mango during off-season has its own unique challenges. Production falls during the rainy season. This will require a special care and cultural management
- ✓ Be ready to spray herbal fungicide every after rain during flowering and early fruit development to prevent fungal infection and dropping.
- ✓ Follow a one-year cycle of eight (8) months rejuvenation (from harvest to flower induction) and four (4) months of production (from flower induction to harvest.) Remember, plants also need time to absorb plant nutrients from soil, water and atmosphere, carry them to the leaves for photosynthesis, then transport cooked nutrient to different parts of the plant for food storage and utilization for growth, flowering and fruiting
- ✓ The success and productivity lies in proper rejuvenation of the trees immediately after harvest up to induction and care of flowers and fruits to full maturity
- ✓ After harvest flushing is induced, by pruning, fertilization with high nitrogen and irrigating. Spray HOC-4n1 with FAA
- ✓ After 3 months cultivate around the trunk to prune root and fertilize with high potash or wood ash to induce maturity and dormancy to prepare trees to flower and fruit in 4 to 6 months hence



- ✓ MUMBAI, India — Inside his tiny office near the entrance of Crawford Market, ArvindMorde is a bit harried. It is mango season, after all. His telephone rings. A client wants to ship a box of mangoes to Germany, a gift for the Indian-born conductor Zubin Mehta. Another caller wants to send a box to Switzerland; still another, to Singapor
- The following are primary commercial mango products:
  - ✓ Fresh table fruit, ripe and green.
  - ✓ Dried or dehydrated ripe mango fruit.
  - ✓ Mango Puree, concentrate, nectar and juices.
- Secondary mango products:
  - ✓ Mango fruit preserves in syrup, salted or fermented.
  - ✓ Chilled fresh mango fruits. (Frozen fresh halves)
  - ✓ Green mango pickle (Burongmangga)
  - ✓ Powdered mango (green and ripe)
  - ✓ Mango recipe and bakery additive.
- Other mango products and by-products:
  - ✓ Mango seeds for nursery planting materials.
  - ✓ Mango seeds and shell for feeds
  - ✓ Mango peel. Seeds, leaves, branch for organic fertilizer.
  - ✓ Mango wood for lumber and furniture making and fruit boxes.
  - ✓ Specialize fruit, leaves and plant extract for drugs and medicine.
  - ✓ Mango seed shell as crafted key holder and coin pocket. (Guimaras)
  - ✓ Other products under development.
- The growing market demands both domestic and export for organically grown fruits and vegetables compel us to learn to grow ORGANIC MANGO.
- This is a simple and basic study to help mango growers produce naturally grown mango free from toxic chemical residue, using both herbal organic concentrates and biotechnology with integrated pest management.



- The mango is generally sweet, although the taste and texture of the flesh varies across cultivars, some having a soft, pulpy texture similar to an overripe plum, while the flesh of others is firmer, like a cantaloupe or avocado, or may have a fibrous texture.
- For consumption of unripe, pickled or cooked fruit, the mango skin may be consumed comfortably, but has potential to cause contact dermatitis of the lips, gingiva or tongue in susceptible people (see above).
- Under-ripe mangoes can be ripened by placing them in brown paper bags. They will then keep in a plastic bag in the refrigerator for about four or five days.[25] In ripe fruits which are commonly eaten fresh, the skin may be thicker and bitter tasting, so is typically not eaten.
- Mango is a high value and big earner crop, compared to traditional crops like rice, corn, coconut and sugarcane where income ranges only from P15, 000.00 to P60, 000.00 per hectare a year.
- This is why most farmers growing traditional crops remain poor. Mango can easily give P100, 000.00 to P500, 000.00 per hectare a year with trees 10 to 20 years old. Inter-cropping the mango orchard with seasonal or cash crops like grains and vegetables add more income to farm
- It has a wide market potential both domestic and international exports. It is a high value crop where mango grower can earn from P100, 000.00 to P500,000.00 per hectare a year, provided planted at the right distance of 20x20 m+1, with a population of 50 hills per hectare and properly cared.
- It is suitable on upland areas with abundant sunlight and adequate moisture. Mango is a centennial crop that three or more family generation can benefit. It is a good retirement insurance, tree crop where production increases, as trees grow bigger and older

### Market Profile

Percept Profile has bagged the PR duties for the popular all natural non-fat frozen yoghurt brand from U.S.A. – ‘Red Mango’. Already established as a healthy food option in many countries, Red Mango offers 100% natural, non-fat & low fat, kosher and gluten-free frozen



yogurts fortified with pro-biotic and is vying to create a niche for healthy food in the Indian Food and Beverage Industry.

Percept Profile will deliver a 360° PR mandate to Red Mango and thus position it as the game-changer product offering in the Indian market.

On bagging the PR duties of Red Mango RahatBeri, COO of Percept Profile said, “It’s a matter of immense pleasure & pride that we will be associated with the India launch of Red Mango which is expanding its footprints in the field of Food and Beverage in the country. Adding a unique touch to product offerings, Red Mango caters to today’s diet conscious consumer who wants to eat well & stay well. We will definitely help Red Mango touch more consumers with our cutting edge PR activities and initiatives.”

The India head of Red Mango Rahul Kumar was cited, “We are extremely happy to have Percept Profile on our board & it will positively have an effect on our growing Indian footprint. Keeping the track record of excellent performance in mind, we finalized Percept Profile as the agency which will help us in creating a positive awareness of the brand in the country

### **Cultural Requirements Ideal for Mango**

- ❖ Mango is a tropical tree. It can grow in most landmasses along and near the equator/ Mango can be grown in almost all regions of the Philippines, but they are found to be more productive if grown in the following environmental conditions:

- ❖ Elevation within 600 meters from sea level up to 800 meters is still tolerable.

Mangoes need a dry period of 3 to 5 months to induce maturity of vegetative parts and flower. Fruit development also needs plenty of sunlight up to 120 -135 days after flower induction. Mango is biennial bearer, fruits every two years.

- ❖ The ideal temperature for mango growing is 21degree C to 37degree C.

Soils preferred are deep loamy, rich in organic matter, with balance content of macro and micro nutrient elements.

- ❖ Water requirement: The land is slightly sloping, well drain but with good moisture holding capacity. Optimum moisture or water supply for mango is very important. Soil pH of 6 to 7 is ideal for mango. It is at this level, nutrients are available.





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- ❖ Topography of the land ranges from flat to rolling not exceeding 45 degrees gradient. Stiff mountainsides are also planted to mango, but with difficulty in production management.
- ❖ Mango needs plenty of sunlight. Fully-grown mango trees should have enough sunlight from morning to evening, at the top of its crown to base of trunk. Shading even partially will limit its productivity. Crowded branch and foliage reduce yield.
- ❖ Moderate airflow or wind is needed by mango trees to allow aeration to prevent the build-up of pest and diseases within the tree crown. Avoid strong winds especially during flowering and fruiting stage by growing windbreaker trees.
- ❖ Mango, both in its green and ripe form is a very good tenderizing agent due to these same enzymes, therefore ideal to include in any marinade. In India they use a sour mango powder containing ground up green mangoes called Amchur, both as a seasoning and tenderizing aid.
- ❖ As A Good Source of Fiber We all know the importance of fiber in our diets. If you are eating your mango-a-day, irregularity will not be a problem for you. Research has shown that dietary fiber has a protective effect against degenerative diseases, especially with regards to the heart; may help prevent certain types of cancer, as well as lowering blood cholesterol levels.
- ❖ An average sized mango can contain up to 40% of your daily fiber requirement. For those of you who are physically active, whether working out or constantly on the go, mangoes are also a great way to replenish that lost potassium. Deliciously rich in anti-oxidants, potassium and fiber - the mango is the perfect fruit!

## **Establishment of Mango Orchard**

A few pointers in establishing a good productive mango orchard:

Look for the ideal site of a mango farm base on the cultural requirement ideal for Mango.

- Grafted seedlings are recommended to have uniform tree production. The Philippine Golden Mango (carabao – Lamao selection) is preferred. The farm should be accessible with good roads and abundant water supply for irrigation and spraying.
- Clear field of all trees and structure that will shed the trees to allow full sunshine and free airflow. Set rows at east-west orientation. Better plant them on triangle layout.



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- Layout the farm and trees with access in-farm roads, farmhouse, working shed, water system and other farm structures.
- Recommended planting distance is 20 x 20 + 1 meters quincunx with 50 trees population per hectare. The center hill may be eliminated when trees become bigger and crowded at 20 to 30 years old.
- Weed, cultivate, fertilize and irrigate your trees regularly every 3 months. Combine organic and chemical fertilizers for faster and healthy growth. Use farm compost.
- For orchards devoted to grow organic fruits; natural farming practices using organic and biological farm practices, without chemical inputs may be adopted. There is a growing market demand for organically grown fruits including mango.
- Mangoes account for approximately half of all tropical fruits produced worldwide. The Food and Agriculture Organization of the United Nations estimates worldwide production at nearly 35,000,000 tonnes (39,000,000 short tons) in 2009 (table below). The aggregate production of the top 10 countries is responsible for roughly 80% of worldwide production.
- Benishaan or Benisha (Banginapalli in Telugu and other south Indian languages) and Kesar mango varieties are the most popular varieties in India's southern states, while Chausa, Dasherri and Langra also known as dudhiamalda varieties are most popular in the northern states. Names of other varieties of mango available in India are malgova, peethar, rumani, bangalura, rasalu, thothapari, neelam, sindhoora, and salem.
- Generally, ripe mangoes have an orange-yellow or reddish peel and are juicy for eating, while exported fruit are often picked while underripe with green peels. Although producing ethylene while ripening, unripened exported mangoes do not have the same juiciness or flavour as fresh fruit. Like other drupaceous fruits, mangoes come in both freestone and clingstone varieties.

## Plant Propagation

### 1. Methods of Propagation

- ✓ Sexual propagation with seeds. The trees grow big and productive in 7-15 years. However, fruits may not be the same with genetic variations. Asexual propagation – grafting. Trees start bearing as early as 3–5 years. They produce more uniform true to type fruits, coming from the same mother tree.



## 2. Field Planting

### ✓ Steps in Field Planting:

Propagate and harden the seedlings or planting materials. Expose to direct sunlight at least one week before field planting. Spray or drench with herbal pesticide.

(HOC) Clear the field plows and harrows if possible. Stake planting site 20 x 20 +1m quincunx or 15 x 15m triangle to have 50 hills ha.

- ✓ Dig 1 cubic meter holes and replace the soil with rich/fertile topsoil and fully decomposed organic matter or organic fertilizer. Earthworm casting is ideal mix to topsoil. Fully decomposed animal and plant waste with beneficial bacteria and fungi.

### ✓ Planting procedure:

Drench the seedling in plastic bag and press the soil to loosen it in the bag. Make a hole and pour in water to drench the soil. Gently remove seedling from plastic bag and place in hole, cover and press soil. Place a stake firmly besides the seedling and if needed tie the seedling to it.

- Proper care and management of young tree is necessary to ensure field establishment. High mortality of newly planted trees usually occurs during the dry months and they succumb to pest infestations if not properly monitored.
- The establishment period for young mango tree is about four to five years, it is therefore important that the tree has attained the maximum canopy size before this can be induced to flower.

## Research Methodology

### Research Objectives

- 1) To identify the types of MANGOES produced in India
- 2) To study the role of Indian government in the production of MANGOES
- 3) To analyse factor influencing the prices of MANGOES
- 4) To study the demand and supply of MANGOES in India
- 5) To identify the distribution system followed for MANGOES exports and in India
- 6) To analyse the year-wise exports of MANGOES in India



## Research Design

- ❖ The researcher has selected Descriptive and Exploratory Research Design.
- ❖ Exploratory research is a type of research conducted for a problem that has not been clearly defined. Exploratory research helps determine the best research design, data collection method and selection of subjects.
- ❖ It should draw definitive conclusions only with extreme caution. Given its fundamental nature, exploratory research often concludes that a perceived problem does not actually exist.
- ❖ Exploratory research is not typically generalizable to the population at large. The objective of exploratory research is to gather preliminary information that will help define problems and suggest hypotheses.

## Research Question

A **research question** is the methodological point of departure of scholarly research in both the natural sciences and humanities. The research will answer any question posed. At an undergraduate level, the answer to the research question is the thesis statement.

- ⇒ What are the different types of MANGOES Produced in India?
- ⇒ What are the factors influencing the prices of MANGOES?
- ⇒ How much demand and supply of MANGOES in India?
- ⇒ What is the distribution followed for MANGOES exports and in India?
- ⇒ What are the government subsidies given to Production of MANGOES?
- ⇒ What are the year wise exports of MANGOES in India?

## Data Collection Methods

**Primary Data:** The primary data was collected from the MANGOES Exporters in Salem direct structured questionnaire.



**Secondary Data:** Secondary data, data exist already can be obtained from internet, Books, Farmer's messages, Newspapers, etc.,

### Research Ethics

- ABOUT MANGO
- ABOUT MANGO EXPORT
- TOP 12 MANGO PRODUCERS @ 2005
- HOW TO TEST FOR RIPENESS
- VARIETIES OF MANGO IN INDIA
- ON SEASON MANGO PRODUCTION
- OFF-SEASON MANGO PRODUCTION

### Demand and Supply of Mangoes In India

- Demand is the quantity of commodity consumers wish to purchase and are able to buy at a given price over a given period of time. It may also be defined as the relationship between the various possible prices of a product and the amount of it the consumers are willing and able to buy during some period of time, other things being equal.
- Demand therefore goes beyond just a desire to have a certain good or service. Desire for a commodity without purchasing power or the ability to pay for, is just a want or wish and not demand. Demand backed by purchasing power and the ability to acquire a commodity at a given time is called 'effective demand'. Even in a situation where the product is not available for the consumer to buy, in so long as the means is there and the buyer is willing to purchase it, it is effective demand.
- There is a relationship between the demand for a commodity and price, at any point in time; this could be shown in the form of a demand schedule, a demand function or a demand curve.
- A demand function is a statement telling how each of a number of relevant variables affect the amount of product consumers will buy during some time period. For example, how many umbrellas people will buy in a given market area during a week in a rainy season, may depend on the price of umbrellas, the price of a substitute of umbrella example raincoat and the income of consumers. These variables play a role in what is



called a demand function. The law of demand states that, other things being equal, the amount of product consumers are willing and able to buy during some period of time varies inversely with the price of that product.

- A demand schedule is a table showing the relationship between the various possible prices and the quantity purchased of that commodity over some period of time. Below is an individual demand schedule for mango. Plotting price on vertical axis and quantity demanded on horizontal axis, we obtain the normal demand curve.
- Due to the inverse relationship between  $P$  and  $Q_d$ , the normal demand curve for mango would slope downwards from left to right. A demand curve is a graphical representation of the demand schedule. A demand curve may or may not be a straight line. We however, normally use straight line demand curves for illustrative purposes.

### Market Demand

The quantity demanded of a commodity by all consumers of the commodity in the market is known as the market demand. To obtain the market demand schedule, we sum the individual demand schedules. Assuming a hypothetical economy in which we have four consumers a, b and c. The market demand schedule can be obtained as in the second table below.

- The total demand in the 3rd column gives us the market demand at the given prices. If we plot price on vertical axis and total quantity demanded on horizontal axis, we obtain a demand curve (market demand curve) that slope downwards from left to right. The inverse relationship between price and quantity demanded is also shown in the market demand schedule. That is more is bought at lower prices than at higher prices. The market demand curve slopes downward from left to right because the individual demand curves slope that way. A market demand curve for a product by definition is horizontal sum of the demand curves of the individual consumers in the market.

### Determinants of Demand

The demand for a commodity is influenced by the price of the commodity as well as any demand function variable that will cause a demand curve to shift. These are called the “determinants of demand”. The commodity’s price





- In case of almost all commodities, quantity demanded increases as the price of the commodity falls, income, taste and all other prices remaining unchanged. When the price of a commodity is high, only the rich can afford to buy it. The quantity demanded of the market is therefore low. When the price falls, however, those in the low and middle income bracket can also afford. As a result, the quantity demanded will increase. The real income and substitution effects of price changes also influence the quantity demanded of a product. Real income is the volume or basket of goods nominal income can buy. There is an inverse relationship between real income and price. When price increases real income falls and vice versa.  $\text{Real income} = \frac{\text{Nominal income}}{\text{Price}}$  The substitution effect is based on the rationality of the consumer. When the price of a commodity falls, the rational consumer substitutes this commodity for a relatively expensive one. This implies when price falls more would be demanded, and when price increases less would be demanded.

## Logistics Issues in Export of Mango

### Mango Production

**Table 1. Estimated production 50 trees per hectare. (Planting distance: 20 x 20 +1)**

Age Range of Trees in Years	Estimated Production per Trees in Kilos	Gross Sales per Hectare at 50 trees x P10	Cost of Production at P4.00 per kilo	Gross Profit or Income per hectare with 50 trees
1 to 5	No production	Juvenile Trees	P50, 000.00	(P50, 000.00)
5 to 10	50	P25, 000.00	P10, 000.00	P15, 000.00
10 to 15	200	100,000.00	40,000.00	60,000.00
15 to 20	500	250,000.00	100,000.00	150,000.00

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20 to 25	800	400,000.00	160,000.00	240,000.00
25 to 30	1,000	500,000.00	200,000.00	300,000.00
30 to 35	1,200	600,000.00	240,000.00	360,000.00
35 to 40	1,500	750,000.00	300,000.00	450,000.00
40 to 45	1,800	900,000.00	360,000.00	540,000.00
45 to 50	2,000	1,000,000.00	400,000.00	600,000.00

- Pruning (trimming a plant)
  - Young trees are seldom pruned unless insects and diseases affect these. However, to ‘dwarf’ the tree, it is suggested that tips should be cut after reaching 1-meter height to encourage lateral branching. Otherwise, grafts have tendency to grow tall before giving out lateral branches. This is often referred to as “formative” pruning.
- Fertilization
  - It is very important that grafts be established in the field prior to fertilizer application. Fertilization is recommended 3 to 4 months after field planting and should be done before the end of rainy season. A practical guide for fertilizer application is the development of young shoots, weeks after transplanting.

The following are fertilizers requirements for non-bearing trees, if soil analysis is Not available:

  - ❖ One year old - 100 g Urea and 1.0 kg decomposed manure.
  - ❖ Two years old - 200 g Urea and 2.0 kg decomposed manure.
  - ❖ Three years old - 300 g triple 14 and 3.0 kg decomposed manure.
  - ❖ Four year old – 400 g triple 14 and 4.0 kg decomposed manure.
  - ❖ Five year old - 500 g triple 14 and 5.0 kg decomposed manure.
  - The fertilizer should be placed 0.2 to 0.3 meters (1-2 feet) away from the stem of young grafts and few inches below the ground level.
- Irrigation



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- Weekly manual watering during the dry months by saturating the soil with enough water followed by mulching to conserve moisture. It also serves as source of organic matter. Drip irrigation if available could be incorporated with fertilizer.
- Intercropping
  - Vegetables and legumes most adapted in the area with high market demands are recommended. The practice not only provides additional income to growers but keeps the area free from weeds and improve fertility of the soil.
  - Short maturing trees (inter-fillers) such as citrus, papaya, pineapple, guava, cashew and jackfruit are recommended as intercrops for mango with planting distance 15 meters apart or farther. Intercrops should be managed separately from the main crop and should not interfere with regular activities intended for mango.
- Weed control
  - Ring cultivation is recommended for young mango trees. This is done by scrapping or hoeing the weeds around the base of the trunk. An area of about one meter radius should be maintained weed free. Thick mulching will also prevent weed growth. Inter-row cultivation using plow/tractor is necessary for big plantations. Avoid deep plowing near the root system. Disk harrowing is recommended.
  - Cover cropping involves planting of leguminous and creeping crops like Tropical Kodzu, Centrocemapubesence and Arakispintoy to suppress the growth of weeds provide soil protection, mulch and nitrogen organic fertilizer.. However, cover crops should be cut or plow under as soon as these grow vigorously.
  - Chemicals (herbicides) should be avoided as much as possible. During application, avoid contact with the trunk or leaves to prevent phytotoxicity. Herbicides are not recommended even for large mango plantation rather cultivate field with tractor and plant leguminous cover crops to replace weeds. Herbicides do not only kill weeds, but also other plants and the microorganisms in the soil. It kills soil life.
- Insect/Disease control
  - Scale insects (Aonidiellaorientales, A., inorrata, Aspidiotus destructor, Phenocapsisinday and Hermiberlesiapalmae)-These are small scale-like insects usually found underneath the leaves and branches.
  - Both adults and nymphs destroy the plant by sucking the vital plant sap causing drying and falling of leaves. Abnormal growth of branches are due to toxic substances injected by the insects while feeding.



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- Control: Scale insects particularly the armored group are difficult to control with insecticides because their bodies are covered with wax. When contact insecticides are used, stickers are necessary.
- During heavy infestation, pruning of affected parts should be done followed by spray application of insecticide and fertilizers high in N. When infestation is minimal. Brushing with soap and water can minimize the problem. Spray or drench the whole tree from soil to trunk, branches and leaves with HOC-4n1 at weekly interval until scales and ants are eliminated. Home made lime sulfur is very effective control of scale insects.
- Tip borer (*Chlumetiatrix transversa*) - The adult moth lays its egg on flushes. The eggs hatch into small larvae that bore into the shoots and stems, feeding on the vascular bundles. Since, water and food are prevented from going up the tree.
- Control: With minimal infestation, prune the damage parts and burn them. During severe infestation, spray soil, trunk, branches and foliage with herbal organic concentrate (HOC-4n1) at 7 days interval.
  - (due to destruction of the food bundles), the top most portion dies. When dissected, small, pinkish larvae are present inside
- Corn silk beetle (*Monolepta bifasciata*) - The adults are small, yellow insects and are voracious leaf feeders. Newly formed leaves (flushes) are very attractive to the insect. Infested leaves produce several holes and under severe attack, the entire leaves are destroyed. Damage are easily infected with anthracnoControl: Timely application of HOC-4n1 during flushing. Use any contact insecticides recommended for mango. Spray with herbal organic concentrate (HOC-4n1) is a very good prevention and repellent..
- Grubs (*Lecopholis irrorata*)/termites (*Macrotermes* sp.) - These insects feed on the roots and stems of the tree. Under heavy infestation, young mango trees die. Drench the soil around the trunk with herbal insect repellent and insecticide (HOC-4n1). Control: Fertilizing organic herbal compost and drenching the soil around the tree trunk with HOC-4n1 will drive away grubs. It is important however, to expose the adults prior to application of insecticides by destroying earthen tunnels with cultivation and pressurized water sprayers.
- Anthracnose (*Colletotrichum gloeosporioides*) - This is the most important disease of mango during rainy months. Leaves are susceptible to the disease, especially the flushes.
- The common symptoms are black spots and shot holes. Affected leaves dry and fall to the ground prematurely. Flowers and young developing fruits turn dark and fall. Control: Pruning of affected parts and spraying the remaining parts with HOC-4n1 is recommended



at weekly interval during critical growth stage and immediately after the rain to wash off the fungus sticking on wet foliage, flowers or fruits. can minimize or prevent Anthracnose infection, The critical stages of growth are during flushing, flowering and early fruit development. Prevention is better than cure..

- De-blossoming
- This is the removal of flowers developed on young trees. De-blossoming allows vegetative growth and proper establishment of trees in the field.

### Care and Management of Bearing Trees

- The health, vigor and size of the mango trees determine its productivity. Even if the Philippine Golden mango is biennial in nature, it can be made to bear yearly or more often if the right cultural management is done. Fence and secure the area from stray animals and intruders that may damage the plants. Security is most needed 30 days up to harvest.
- Practice clean culture. Cultivate and weed regularly. Remove all trees and shrubs that serve as host to insect pest and diseases. Grow plants and herbs around the perimeter of the mango farm or orchard that are pest repellent, with pesticide and fungicide property and can be used as herbal concentrate spray.
- They can also serve as windbreakers in areas with prevalent strong winds. Plants like Neem tree, Madre de Cacao, Curry, Acacia, etc. that can also be shelter for diverse beneficial birds, insects and microorganism, that will suppress insect pests.
- The trees should not shed one another. Prune off overcrowded branches. Mango is a terminal bearer, so avoid pruning off healthy terminal fruiting shoot buds. Irrigate and keep the soil moist most at all times. Less water or drier soil is preferred one month before flower induction and one month before harvest. Avoid water logging by providing suitable drainage.
- Fertilize quarterly with abundant organic fertilizer with macro and trace mineral elements. The use of organic compost from pest repellent herbs like most legumes will both increase plant food nutrient and protect the trees from pest and diseases.
- Mango are perennial trees and organic fertilizers can sustain their nutrition year after year as they contain beneficial microorganisms that helps renew soil fertility. To keep the soil alive, avoid using chemical based fertilizers, pesticides and herbicide that kill beneficial fungi, bacteria and earthworms.
- Spray herbal organic concentrate fertilizer on leaves and fruits when growth and fruit development needs supplemental nutrition. Herbal organic concentrate (HOC-4n1) with foliar fertilizer, pest repellent, insecticide and fungicide. Fish Amino Acid (FAA) with macro and trace nutrient elements will insure health, vigor and productivity of the mango



trees. This is specially needed during flowering and fruit development stages. It enlarges fruit weight and sweetness.

### Fruit Containers

- Assuming one hectare produces 50,000 kilos per season and packed in 10 kilo crates or boxes, this will require 5,000 boxes per hectare every year.
- **BAMBOO AND RATTAN BASKETS** – “Kaing or Bukag” with a load capacity of 30 to 70 kilos are commonly used by farmers and mango traders. Bruising and mechanical injuries can be minimized with the use of liners, wooden support planks on vehicles during transport.
- **Hard Plastic or Fiberboard Cartons** – These cartons have a capacity of 12 – 20 kilos. They are used for transporting mango from the field to the packinghouse.
- **Containers of Utility** – Some traders and mango exporters provide contractors and farmers with returnable plastic crates. Others provide cartons that are use to pack fruits for direct market delivery.
- **Wooden crates** – Commercial mango growers are also advised to grow fast growing trees like G’melina, Neem, Bagrass, Falcata and even big bamboo variety for fruit crates and box manufacture to provide packaging materials.

**Table 2. Grading of Philippine Mango for Export**

SIZE	WEIGHT in grams	NUMBER per 2.5 kilos	NUMBER per 5 kilos	NUMBER per 10 kilos	NUMBER per 12 kilos
XI	357-UP	6-7	12-14	24-28	30-32
LARGE	290-356	8	16	31	41-43
MEDIUM	241-289	10	20	40	44-50
SMALL	190-240	12	21	48	51-63
SUPER SMALL	160-189	14-16	28-32	56-64	65-75
BIOCO	085-159	18-20	34-40	65-70	76-80

### Packaging & its details





### For Export

- Each individual fruit of mango will be enclosed in a clean, white, soft, expandable and netted type polystyrene sleeve to prevent bruising before packing in a box.
- The mangoes must be packed in insect-proof boxes. If ventilated boxes are used, all the ventilator openings of the box should be covered with insect-proof screen and all the sides of box should be sealed with adhesive tape to prevent any entry of pests.
- The materials used inside the package must be new, clean, and of a quality such as to avoid causing any external or internal damage to the produce.
- The use of materials, particularly of paper or stamps bearing trade specifications is allowed, provided the printing or labeling has been done with non-toxic ink or glue.
- Mangoes shall be packed in each container in compliance with the Recommended International Code of Practice for Packaging and Transport of Fresh Fruits and Vegetables (CAC/RCP 44-1995, Amd. 1-2004).

### For domestic market

- For domestic market, usually mangoes are packed in wooden boxes, details of which are given below. However, Alphonso and Kesar are packed in CFB boxes

**Table 3. For Domestic Market**

Type of carton	Inner dimension(cm)	Capacity(kgs)
Wooden crates	45X30X30 (Ratnagiri)	16-18
	21.6X21.6X42 (Malihabad)	10-11

### SPECIFICATION DETAILS FOR (CFB) BOXES FOR PACKING MANGOES FOR EXPORTS

**Table 4. (CFB) Corrugated Fibre Board MANGOES for Exports**

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Characteristics		Requirements			
S.NO		Ring & Flap(4 kg)	Full Telescopic (4 kg.)	Ring Flap(8 kg)	Full Telescopic (8 kg)
1	Material of construction	3 PlyCorrugated fibre board	3 Ply Corrugated fibre board	5 Ply Corrugated fibre board	5 Ply Corrugated fibre board
2	Grammage( g/m sq),Min (outer to inner)	*230/140/140	*230/140/140	*230/140/140	*230/140/140
3	Bursting strength kg/cm sq, Min	6.50	6.50	10.50	6.50
4	Puncture resistance, ozs inches/tear inch Min	110	110	280	110
5	Compression strength, kgf , Min	275	275	250	250
6	Cobb (30 minutes) g/m sq, Max	130	130	130	130

#### Distribution of produce from primary to terminal market

- ★ Mangoes grown in different parts of the country are transported to the big cities for marketing. The fruits produced in Andhra Pradesh and Tamil Nadu find markets in Nagpur, Bombay, and Calcutta.
- ★ The important wholesale mango markets in India are Calcutta, Delhi, Bombay, Madras, Ahmedabad, Pune and Nagpur. Mangoes for these big markets are usually collected at the central places in all the mangogrowing areas, e.g., in Uttar Pradesh, Lucknow and



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Varanasi; in Gujarat, Gandevi, Gadat and Amalsartalukas; and in Maharashtra, Ratnagiri and Vengurla.

- ★ Delhi and Bombay are the most important markets for despatch of mangoes. At Delhi all the mangoes are assembled at Sabzimandi, Ashoka market, and at Bombay at Crawford and Byculla markets for distribution.
- ★ In Class I and Class II, scattered suberized rusty lenticels, as well as yellowing wed. of green varieties due to exposure to direct sunlight, not exceeding 40% of the surface and not showing any signs of necrosis are allo

**Table 5. State Wise MANGO Growing In India**

STATE	AREA (000'ha)			PRODUCTION(000'tons)			PRODUCTIVITY(tons/ha)		
	2008-09	2009-10	2010-11	2008-09	2009-10	2010-11	2008-09	2009-10	2010-11
Uttar Pradesh	271.20	276.42	267.22	3465.95	3588.00	3623.22	12.78	12.98	13.56
AndraPradesh	497.70	480.41	391.09	2522.00	4058.35	3363.40	5.07	8.45	8.60
Karnataka	141.29	153.80	161.57	1284.42	1694.00	1778.75	9.09	11.01	11.01
Bihar	144.07	146.03	147.01	1329.80	995.94	1334.87	9.23	6.82	9.08
Gujarat	115.69	121.52	130.10	299.82	856.74	911.30	2.59	7.05	7.00
Tamilnadu	148.84	132.68	148.04	821.41	636.29	823.74	5.52	4.80	5.56
Orissa	164.25	177.63	190.08	449.71	577.48	642.01	2.74	3.25	3.38
WestBengal	85.971	88.14	89.53	548.92	578.00	620.17	6.38	6.56	6.93
Jharkhand	31.848	15.10	38.90	91.52	254.30	427.94	2.87	16.84	11.00
Kerala	76.70	63.75	62.20	445.40	373.17	380.86	5.81	5.85	6.12
Maharashtra	45.70	474.50	47.70	712.80	597.00	331.00	1.56	1.26	0.70
Others	585.72	182.32	6623.36	778.02	817.42	951.12	1.33	4,48	0.14
Total	2308.98	2312.30	2296.80	12749.77	15026.69	15188.38	5.52	6.50	6.61

Source: Indian Horticulture Database, 2010-11

**Table 6. India's Export of Mangoes to South Asia Countries**

India's Export of Mangoes to South Asia Countries

Quantity in MT; Value in Rs.Lacs						
Country	2009-10		2010-11		2011-12	
	Quantity	Value	Quantity	Value	Quantity	Value
BANGLADESH PR	33549.90	3295.82	23049.69	1859.43	27599.48	4058.91
NEPAL	4058.15	378.63	1991.26	209.58	3925.74	671.42
MALDIVES	25.78	7.75	9.18	3.60	17.03	14.34
SRI LANKA DSR	0.00	0.00	0.00	0.00	0.02	0.02
BHUTAN	13.68	7.55	25.00	8.04	0.00	0.00
PAKISTAN IR	0.00	0.00	0.09	0.03	0.00	0.00
<b>Total</b>	<b>37647.51</b>	<b>3689.75</b>	<b>25075.22</b>	<b>2080.68</b>	<b>31542.27</b>	<b>4744.69</b>

Source: DGCIS Annual Export

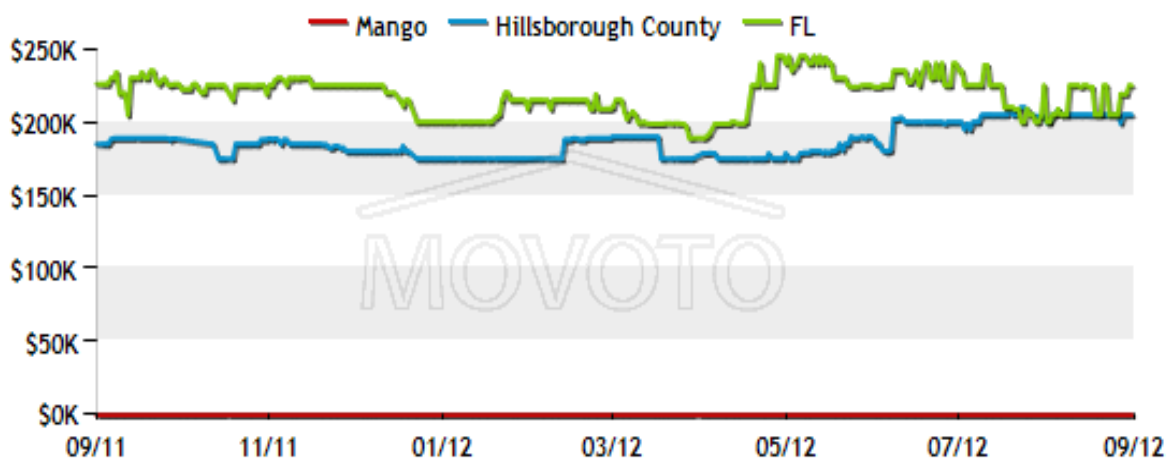


Figure 1: Mango-average-list-price

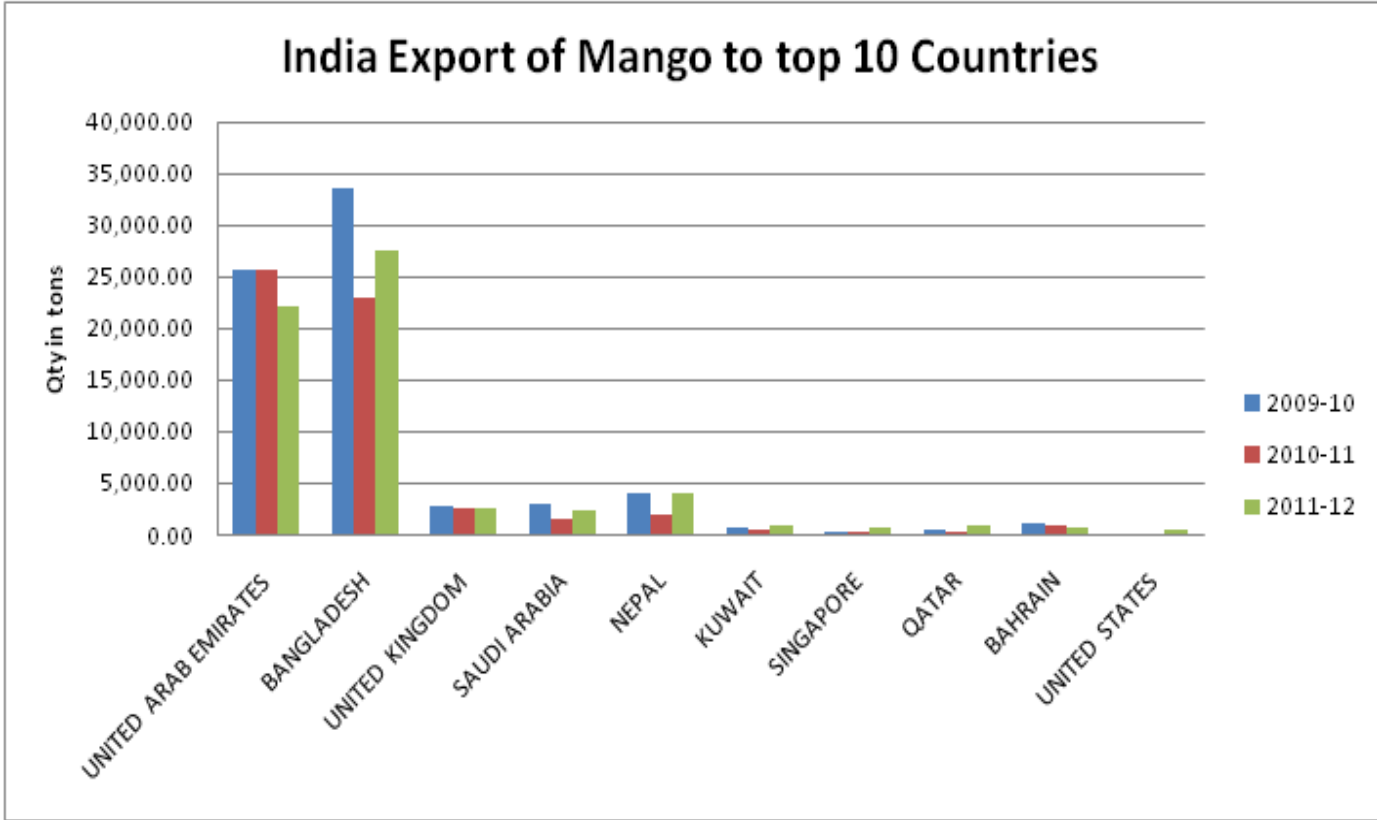


Figure.2:India Export of Mango to Top 10 Countries

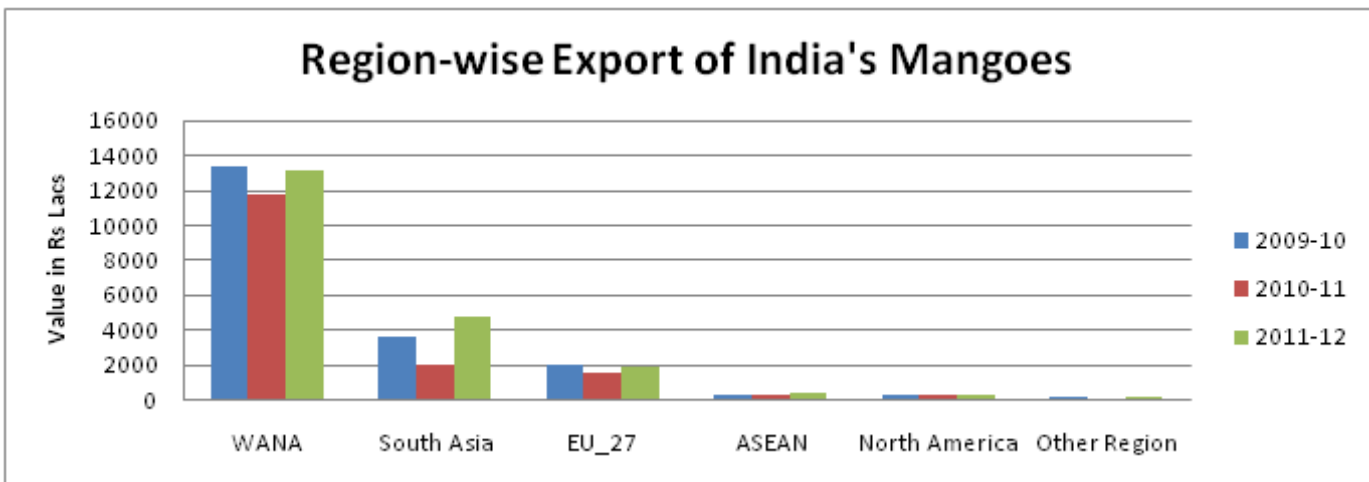


Figure 3: Region-wise Export of Indian Mangoes



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## Data Analysis and Indicator

To ensure full utilization of information collected, a set of core group of indicators needs to be developed so that the programme providers can use them in knowing different aspects of programmes that they offer. Raw data concerning NFE programmes in Indore district has already been collected. Raw data is of the limited use unless the same is analyzed and used in planning and monitoring of programmes. The raw data therefore not only need to be analyzed but refined also so as to convert it into useful information in the form of indicators. This can be done in a variety of ways. First, the concept of an indicator is briefly presented. An indicator is that which points out or directs attention to something. An indicator should be something giving a broad indication of the state of the situation being investigated. Indicators are compared to a 'norm' or a 'standard' (like pupil-instructor ratio) or to a previous score.

Indicators reflect the way in which an objective can be achieved as well as to what degree approximately the objective has been achieved at any stage. The following are the main characteristics of a good indicator: An indicator should provide useful information to the providers

- Its ability to summarize information without distortions
- Its precision and comparability
- Its reliability and frequency of updating
- It allows to relate it with other indicators for global analysis
- It measures how far or how close one is from the objectives
- It helps to identify problematic or unacceptable situation
- It meets policy concerns
- It helps to compare its value to a reference value, to a norm/standard or itself, as computed for different periods.



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## Perception and Attitude of Employees Related to Training and Development in Bright Auto Plast Pvt Ltd, Chennai

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### Abstract

Perception & Attitude is related to expectation and fulfillment is an extremely important and critical issue facing organizations in the complex business environment of today. The banking industry is, certainly not an exception to this premise. In fact, it has been widely held in financial institutions that employees satisfaction may be the most influential factor in the selection of a banking institution. Likewise, with all of the changes taking place in the financial marketplace and the increase in competition, it becomes apparent that more attention must be given to employees service and satisfaction. Perception and attitude of employees related to training and development in Bright Auto Plast Pvt Ltd is confined with the auto mobile companies only. The sample size is chosen as 30. Convenience Sampling is used and descriptive research is adopted. This study is mainly carried on in order to find the employees satisfaction level of Bright Auto Plast Pvt Ltd. The major factors that lead to employees satisfaction are product, pricing, quality and service. The study has found that the existing system in Bright Auto Plast is not adequate and can be modified accordingly to make it effective.

**Keywords:** Perception, Attitude, product, pricing, quality and service.

### Introduction

In the past major objectives of any organisation is profit maximization by increasing the sales value but in today's context marketers have a different objectives thinking, which requires the organisation to define the needs to the point of the view and make efforts to satisfy needs and wants. A study of perception helps the marketers to know how the individual, groups or organisation select by use and dispose of goods, services or ideas. This also helps the marketers to assess and analyses the option beliefs and attitudes of the consumers, so that they can change their strategies accordingly time to time.



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Therefore, it is not only important to obtain employees input as to the services and products they desire, but it is equally important to receive management's perceptions of the employees' wants and needs to avoid situations where the institution fails to live up to employees expectations due to failed communications.

## Perception

The term perception refers to the process by which individuals organise and interpret their impression in order to give meaning to their environment.

When people seek to do business with companies or individuals, it's because they have specific product or service needs. A person who is hungry will seek to purchase food from a restaurant, snack vendor, or supermarket. Someone who needs a website designed for his or her small business will seek assistance from a website designer or developer, or perhaps from a full-service marketing firm. Specific product and service needs drive employees to particular types of service providers.

Separate from specific product and service needs, however, employees all have basic expectations for how they should be treated. In order to effectively define employees service, it's important to be aware of the actions and behaviours that employees consider important when they interact with service providers. Companies with a reputation for delivering the best employees experience focus on meeting or exceeding employees expectations at all times. Perception is one of the oldest fields in psychology. The oldest quantitative law in psychology is the Weber-Fechner law, which quantifies the relationship between the intensity of physical stimuli and their perceptual effects. The study of perception gave rise to the Gestalt school of psychology, with its emphasis on holistic approach.

Perception is the process of attaining awareness or understanding of sensory information. It is a task far more complex than was imagined in the 1950s and 1960s, when it was predicted that building perceiving machines would take about a decade, a goal which is still very far from fruition. The word perception comes from the Latin words *perceptio*, *perception*, meaning "receiving, collecting, and action of taking possession, apprehension with the mind or senses.

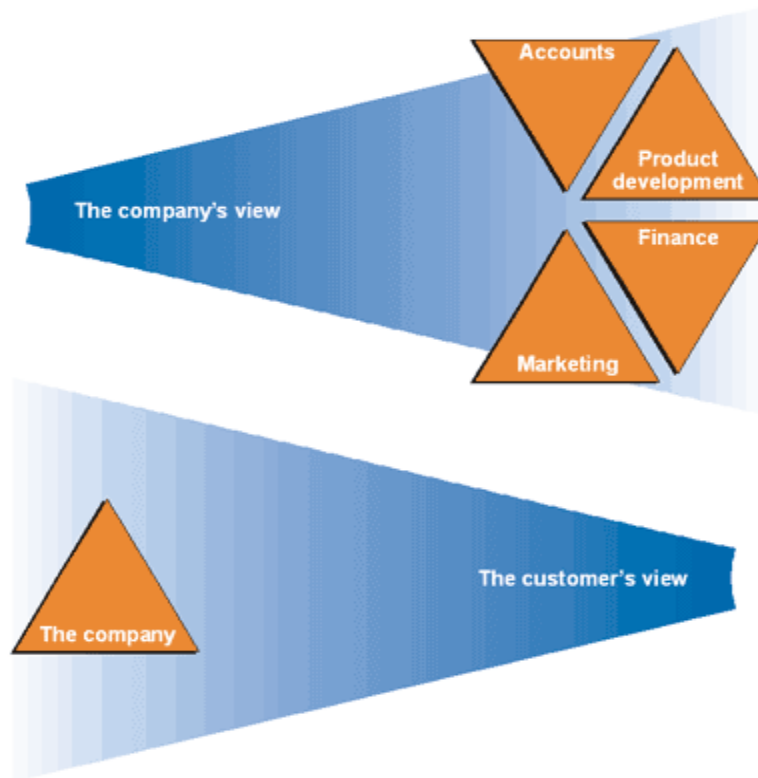
What one perceives is a result of interplays between past experiences, one's culture and the interpretation of the perceived. If the percept does not have support in any of these perceptual bases it is unlikely to rise above perceptual threshold.

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Bringing it all together, it becomes ever more difficult to differentiate a product or service by traditional categories like price, quality, functionality etc. In this situation the development of a strong relationship between employees and a company could likely prove to be a significant opportunity for competitive advantage. This relationship is not longer based on features like price and quality alone. Today it is more the perceived experience a employees makes in his various interactions with a company

If a employees is satisfied that means that a product of service has met his expectations and that he was not dissatisfied by it. Employees satisfaction is doubtlessly very important. It is the precondition for repeat purchases and it prevents the employees from telling others about his disappointing experiences. A loyal employees, however, is more than a employees who frequently purchases from a company.



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The difference is the emotional bond which links the employees so closely to the company that he develops a clear preference for these products or brands and is even willing to recommend them to others. Loyal employees truly prefer a product, brand or company over competitive offerings. Thus loyalty goes beyond a rational decision for known quality or superior price-performance-ratio. It is about the employees' feelings and perceptions about the brand or product.

The extent of a person's knowledge creates their reality as much as the truth, because the human mind can only contemplate that which it has been exposed to. When objects are viewed without understanding, the mind will try to reach for something that it already recognizes, in order to process what it is viewing. That which most closely relates to the unfamiliar from our past experiences, makes up what we see when we look at things that we don't comprehend.

Employees behaviour becomes more hybrids. On one hand, employees are increasingly price sensitive – searching for bargains at marketplaces like eBay or buying their groceries at discount markets. On the other hand they enjoy branded and luxury goods. One and the same person may plan a weekend trip with a no-frills airline and a stay at a five-star-hotel.

In the result, employees have a wider choice of often less distinguishable products and they are much better informed. For many offerings the balance of power shifts towards the employees. Employees are widely aware of their greater power, which raises their expectations on how companies should care for them.

When the employees makes his buying decision, he evaluates the benefits he perceives from a particular product and compares them with the costs. The value a employees perceives when buying and using a product or service go beyond usability. There is a set of emotional values as well, such as social status, exclusivity, friendliness and responsiveness or the degree to which personal expectations and preferences are met. Similarly, the costs perceived by the employees, normally comprise more than the actual price. They also include costs of usage, the lost opportunity to use an other offering, potential switching costs etc. Hence, the employees establishes an equation between perceived benefits and perceived costs of one product and compares this to similar equations of other products.

Based on this, employees loyalty can be understood as to how employees feel about a product, service or brand and whether their perceived total investments with a it live up to their expectations.



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## Objectives of the Study

- To find out the satisfaction level of employees with respect training and development of bright auto plast product.
- To check whether the opportunities are created based on well performing aspects.
- To provide suggestions for the improvement of training and development based on employees expectation.
- To analyze minimum cost strategy to develop a product based on employees expectation after training.
- To analyze the employees standard and accountability after training.

## Limitation of the Study

- The study confines only to the Chennai branch.
- Due to constraints the researcher has been unable to cover the entire population and hence the findings of the study may certain only to the area covered by the researcher
- Some responses may be tainted due to communication problem; the respondents might have considered the question wrongly.
- Sampling techniques chosen for the research is subjected to sampling bias.
- The accuracy and reliability of analysis depends on reliability of the information provided by the sample respondent.

## Scope of the Study

- The scope of the study is to find the product based employees perception of bright auto plast.
- The sample size taken for the study which can be increased.
- The design decision is based on employees feed back.





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- The study which can be extended to all service provider of auto plast product.

## Review of Literature

### Website

1. <http://www.blonnet.com/catalyst/2002/03/21/stories/2002032100050300.htm>

“Indian brand have to work on perception “by Shankar radhakrishnan, based on the website information, he have a product that can live up to much higher expectations. There is scope for Indian brands in the product area. There is also scope for Indian brands in the service area. Look at advertising, for instance.

Author still don't get any Indian ad agencies going all out in the Gulf or anywhere in the world for that matter. Whereas author feels that you have one of the best and most competitive advertising industries in the world here in India. And author feels that Indians are among the best ad people in the world. But that has been confined to India and hasn't been taken out to the world. So author feel there is a lot that can be done in the service area. There are lots of Indian service brands that haven't gone out and have a lot of scope.

2. <http://www.thehindubusinessline.com/catalyst/2006/04/13/stories/2006041300130200.htm>

” Perception is reality “by Chris Denove and James D. Power Every great company listens to the voice of the employees, Employees satisfaction problems are insidious. They grow silently within an organisation like a cancer, strangling the foundation upon which a brand is built," cautions chapter one. "A company may feel it's firing on all cylinders, moving forward, making sales and profits, and not realise it has a employees satisfaction problem until it's too late." How true! Such a problem takes long to reverse, warns the book. "Changing widely held perceptions and entrenched consumer attitudes may take years and untold amounts of money."

Is it enough to just keep your employees merely satisfied? No, that's like "running place or sliding backward," alert the authors. "By meeting but not exceeding the basic levels of employees service and quality, a company is leaving itself vulnerable to attack from just about every angle, including price."

3. <http://www.myemployees.com/cgi-bin/item.cgi?id=132560>



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Employees perception creating value for the employees by R. Devarajan, Creating value is the guiding principle of modern management. This is a significant shift in management philosophy; moving from managing resources (input) to managing performance (output). At the same time, it is an intriguing phrase, the meaning of which is far from clear. When people think about the work carried out in companies, they are more likely to think about the actual goods and services coming out of them, rather than an abstract concept called value. On what the company made and how it made it. It is a 'make and sell' model of business. It starts with producing an item, pricing it based on the cost incurred plus profit and selling it to the employees. Drucker advanced a different theory of value. He said that value must be perceived from outside-in. It must be seen through the eyes of the employees. It is a 'sense and respond' model that starts with what the employees wants and how much he is willing to pay for it.

Improved quality at lower cost offered irresistible value, which employees endorsed with their wallets.

1. <http://ezinearticles.com/?Understanding-Emotional-Triggers-Means-Employees-Satisfaction-and-Greater-Sales&id=1983924>

Understanding the Employees leads to Greater Sales by Angela v Megasko, the President and founder of Market Viewpoint, LLC, a market research firm specializing in professional mystery shopping. Her organization has been helping clients see their operations through the eyes of the employees since 1996. Angela has helped clients in all industries increase their profitability through the power of employees retention.

Some of the emotions you may want to consider in your quest for the ultimate in employees satisfaction and increased sales are, status, which may take the form of ego gratification, popularity, pride, praise, or exclusivity - and fear which often translates to marketing activities where safety, security, and peace of mind are emphasized. Other emotions include comfort, time, money, fun, health, social advancement, morality, and ethics. By the same token, your products or services may help people avoid certain emotions like embarrassment, pain, loss, risk, worry, doubt, guilt, and boredom. If this is the case, be sure to emphasize these in your promotional efforts and operational practices.



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As managers and business owners, your job is to ensure that you identify the emotional reasons that drive people to buy from you. It is important to break through the walls that employees erect and truly understand the emotional appeal that will make the purchase memorable.

5. <http://www.myemployees.com/cgi-bin/item.cgi?id=132560>

Employees perception, the greatest blind spot by Julio Quintana, deals with maintaining a good relationship with the employees will improve the business. The author also points out some points in order to maintain as well as retain key employees.

1. Create and Maintain Accurate Employees Profiles
  2. Look at your business through your employees's eyes –
  3. Keep Your Promises
  4. Use problems as opportunities to demonstrate what you are about
  5. Develop a unique relationship with your employees and treat each one as someone special.
  6. Keep in touch and keep them.
  7. Remember that a large part of good service is "service.
6. [http://www.ask.com/bar?q=Importance+of+Employees+Perception&page=1&qsrc=6&zoom=Definition+of+%3CKW%3EEmployees+Perception%3C%2FKW%3E|Research+on+%3CKW%3EEmployees+Perception%3C%2FKW%3E|%3CKW%3EEmployees%3C%2FKW%3E%27s+%3CKW%3EPerception%3C%2FKW%3E+of+Service+Quality&ab=0&u=http%3A%2F%2Fwww.themanager.org%2FMarketing%2FEmployees\\_Perception.htm](http://www.ask.com/bar?q=Importance+of+Employees+Perception&page=1&qsrc=6&zoom=Definition+of+%3CKW%3EEmployees+Perception%3C%2FKW%3E|Research+on+%3CKW%3EEmployees+Perception%3C%2FKW%3E|%3CKW%3EEmployees%3C%2FKW%3E%27s+%3CKW%3EPerception%3C%2FKW%3E+of+Service+Quality&ab=0&u=http%3A%2F%2Fwww.themanager.org%2FMarketing%2FEmployees_Perception.htm)

Consumer Opinions and Perceptions in the United States Light Truck Accessories Market by Frost & Sullivan, Dec 2004, The U.S. light truck accessories market is highly competitive due to the presence of numerous popular brand names. This study highlights the end-users perceptions regarding each brand available in the market and the key factors that govern the final purchase decision. Understanding the purchase motives for bed liners, running/step-boards, tonne covers, and toolboxes will enable manufacturers and distributors to strategically target the light truck owner and optimize marketing, branding, and sales force efforts. In addition, the detailed breakdown of trends for light truck accessories by truck make and model allow participants to assess end-user preferences and shape their product development strategies accordingly.



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This Frost & Sullivan research provides a comprehensive assessment of North American light truck accessories in terms of end-user opinions and preferences. Respondents of the Internet survey include light truck owners that purchased a new light truck after October 2002 and have some accessory currently installed on their light truck. Apart from analyzing end-user behavior and preferences, participants can use this study to gauge the competitive landscape of the light truck accessories aftermarket.

Understanding Channel Preferences Essential to Effectively Target End Users of Light Truck Accessories. In order to maximize penetration into the light truck accessories aftermarket and strengthen their marketing strategies, manufacturers and distributors need to understand the end users' brand and channel preferences. Understanding why, where, and when employees purchase accessories for their light trucks is essential to strategically target this market, reiterates the analyst of this research.

Since light truck owners often cite availability and immediate access to the accessories as a major reason for choosing brands in the running board and bed liners aftermarket, it gives the dealership channel a distinct advantage over the more traditional aftermarket channels. While accessory stores followed by dealerships are the preferred channel for toolboxes, parts retailers and merchandisers also play a significant role. In the case of tonneau covers, end users rated accessory stores as their number one choice. Although the Internet held a relatively low share, it is proving to be an upcoming channel, particularly for the tonneau covers aftermarket.

A mixture of functional, aesthetic, and lifestyle reasons are key criteria for purchasing light truck accessories. For example, while more employees purchased drop-in bed liners due to their perceived price and quality advantage, owners of high-end trucks and those that purchased the truck for recreational/lifestyle purposes showed a preference for spray-on bed liners. In the case of tonneau covers, aside from protection, the need to enhance the truck appearance and adding a personal signature were other motivating factors for the purchase.

While availability, resale value, recommendations, product quality, and price are considered important for an original equipment (OE) brand; previous experience, good reviews, company reputation, and value for money were prime considerations for selecting an aftermarket brand. Targeting light truck owners within 90 days of the purchase is an important step in increasing the light truck accessory sales, informs the analyst. During this critical period, light truck owners are more receptive to upgrading, protecting, decorating, and accessorizing their new vehicles.

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7. <http://www.thehindubusinessline.com/catalyst/2006/04/HuaweiService2007/2006041300130200.htm>

In meeting employees' requirements and measuring employees' satisfaction indexes, employees perception should be definitely a key consideration. Qualified services in the operation execution layer, technical management layer and business development layer are necessary. However, it is even more important to efficiently understand employees expectations and make efforts to exceed their expectations. Therefore, employees perception management becomes a central topic. Frankly speaking, among all indexes in employees satisfaction management, the biggest challenge is employees perception management, or employees perception satisfaction.

As a matter of fact, one of the major characteristics of service is intangible; hence the core value of services is not like a physical product but the spiritual experience and perception of employees. The final aim and ideal effect of service provisioning is to have employees perceive and enjoy the service. Such perception is both at psychological and behavior levels, and it is the contents of high quality life in the modern society. Employees are seeking for material deliverables as well as perceptive enjoyment when purchasing a service product. Since perceptive enjoyment is a vital service objective, one of the key service management objectives shall be meeting employees' perceptive enjoyment.

For instance, in selecting a telecommunication service, beyond all doubt employees will consider its service price, delivery quality, service features, service stability, and service convenience. However, many of the considerations are actually spiritual concerns, such as service convenience, maturity of service delivery engagement model, service effect, and employees loyalty. Involuntarily, indexes concerning service product functions and delivery quality are all shifted to spiritual perception.

Physical products can be relatively easily developed in this modern society; however there is no apodictic approach to achieve employees perception satisfaction, which is the ultimate goal of services. The employees satisfaction management approach varies with different engagement model and interactions between the services providers and employees, and it is not an easy to be managed. It requires high psychology and behavior knowledge to measure employees perception and evaluate the subsequent effect of the perception.

8. <http://www.blonnet.com/catalystcompetitivev/2002/03/21//2002032100050300.htm>



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Understanding and Managing Employees Perception by Dagmar Recklies, this article first appeared in Effective Executive, ICFAI University Press, and July 2006. “It has never been more difficult to win – and keep – business through product and price distinction”.

In today’s globalising economy competition is getting more and fiercer. That means it becomes more difficult for products and services to differentiate themselves from other offerings than ever before. Not only is the number of competitive offerings rising due to globalisation of production, sourcing, logistics and access to information. Many products and services face new competition from substitutes and from completely new offerings or bundles from industry outsiders. Since product differences are closed at an increasing speed and many companies try to win the battle for employees by price reductions, products and services tend to become commodities.

On the other hand, employees behaviour becomes more hybrid. On one hand, employees are increasingly price sensitive – searching for bargains at marketplaces like ebay or buying their groceries at discount markets. On the other hand they enjoy branded and luxury goods. One and the same person may plan a weekend trip with a no-frills airline and a stay at a five-star-hotel.

In the result, employees have a wider choice of often less distinguishable products and they are much better informed. For many offerings the balance of power shifts towards the employees. Employees are widely aware of their greater power, which raises their expectations on how companies should care for them.

The consequence for companies is that they have to adapt their ways of competing for employees. Traditionally, companies have focused their efforts of employees relationship management on issues like employees satisfaction and targeted marketing activities like event marketing, direct marketing or advertising. They narrow the relationship between company and employees down to a particular set of contacts in which the company invests its efforts. Most likely this will produce not more than a satisfied employees who is well aware of the companies offerings and has a positive attitude towards them. However, a satisfied employees is not necessarily a loyal one.

Depending on the nature of the product and the employees’ preferences, increasing market share can have positive or negative effects on how the employees perceives the product.





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## Positive effects of increasing market share on employees perception

- Increasing market share can send out positive signals by acting as an indicator of superior quality that is recognised by more and more other employees. This effect is particularly strong for premium priced products. Employees normally assume that a product must be of exceptional quality if it can gain such an unexpected market success despite its high price.
- Many brands offer positive emotional benefits of using a product that is popular in the markets.
- The value of a product or service can rise through increasing number of users of the same product, e.g. number of members of an online community, better availability of software for popular computer systems.

## Negative effects of increasing market share on employees perception

- For premium and luxury products, employees may translate an increasing market share into a loss of exclusivity and thus perceive it as less valuable.
- The quality of services may suffer if they are consumed by increasing numbers of users.

9. [http://www.sciencedirect.com/science?\\_ob=ArticleURL&\\_udi=B6T6T-4S50K48-1&\\_user=10&\\_rdoc=1&\\_fmt=&\\_orig=search&\\_sort=d&view=c&\\_acct=C000050221&\\_version=1&\\_urlVersion=0&\\_userid=10&md5=0a43aa030556850ca9a59b0d5072a8d4](http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6T6T-4S50K48-1&_user=10&_rdoc=1&_fmt=&_orig=search&_sort=d&view=c&_acct=C000050221&_version=1&_urlVersion=0&_userid=10&md5=0a43aa030556850ca9a59b0d5072a8d4)

Employees Experience Process by Mr. Jack Corneveaux Vice President, Business Development, Mindshare Technologies, Inc, the Employees Experience has been the subject of many articles of late, and most emphasize the importance of understanding the employees perception of your company whether you do business via storefront, call center or both. Indeed, understanding this perception is critical to your brand protection - it is not what you and your management thinks about your employees' experience, it's what the employees' thinks that is important, a brand begins and ends with the employees, and most important to the employees' perception is the employees experience. Employees will believe their own experience before they believe advertising...and strong brands are built one employees experience at a time

10. <http://www.informaworld.com/smpp/content~content=a713843634~db=all~order=page>



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Aligning its quality initiatives in synchronization with the employees's perception of values is one of the key management strategies for improving the competitive edge of an organization. Therefore, it will be a distinct advantage if one can succeed in effectively capturing the genuine and major employees attributes (requirements), systematically analysing and duly transforming them into the appropriate product attributes (features). This paper puts forward a novel approach for analysing employees attributes and projecting them into the relevant design, engineering and product attributes in order to facilitate decision-making and to guide downstream manufacturing planning and control activities.

The proposed hybrid system incorporates the principles of quality function deployment, analytic hierarchy process and fuzzy set theory to tackle the complex and often imprecise problem domain encountered in employees requirement management. It offers an analytical and intelligent tool for decoding, prioritizing and inferring the qualitative, sometimes vague and imprecise Voice of Employees. As a result, the appropriate product attributes can be mapped out and their relevant design targets can be determined quantitatively and consistently. The software supporting the hybrid system is constructed within a generic framework which can be easily customized and configured into specific enterprise models capable of offering more timely responses to the dynamic market demand.

## Journal

1. Derren Shaw and Barry Haynes, "An evaluation of customer perception of FM service delivery", *Facilities*, 2004, Volume: 22, Issue: 7/8, Page: 170 – 177.

Applies service quality theory to facilities management (FM), resulting in a more customer-orientated approach to FM. Uses a questionnaire as the main source of data collection. Uses factor analysis to establish basic underlying concepts or dimensions. Proposes a "gap" model which makes a comparison between service quality and the level of importance that customers place on each service dimension. The implications are that FM managers can use service dimensions to measure the qualitative elements of FM service provision. Segmentation analysis allows FM managers to determine whether different service levels are required for customer segmentation groups. Allows the concepts and theories that are currently applied in the service quality literature to be applied in an FM context. This moves the debate about FM performance metrics more towards measuring and understanding customer perceptions and ultimately to customer management strategies.



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2. Ti Tor W. Andreassen, Line L. Olsen, “The impact of customers' perception of varying degrees of customer service on commitment and perceived relative attractiveness”, *Managing Service Quality*, 2008, Volume: 18, Issue: 4, Page: 309 – 328.

**Purpose** – The study is motivated by business' mixed response to increasing demand for customer service, leaving the question as to its impact on performance open. The study is concerned with the impact of customers' perception of customer service (bad/good) on variables that are known to drive revenue, i.e. customer satisfaction, perceived relative attractiveness, and commitment. Customers that experience bad customer service do take into account the same variables in their evaluation as do customers that experience good customer service. They do however, put different weights on every factor in the evaluation process. Also the strength of the relationships between the variables seems to differ. Typically, analyses showed that customers experiencing bad customer service tend to consider more thoroughly all aspects of the service; the relationships between the variables were stronger and the explained variance of each construct higher, than in the group of customers experiencing good customer service. However, the paths are not different across the groups.

3. Nina Specht, Sina Fichtel, Anton Meyer, “Perception and attribution of employees' effort and abilities: The impact on customer encounter satisfaction”, *International Journal of Service Industry Management*, 2007, Volume:18, Issue:5, Page:534 - 554

Do customers recognize the effort and abilities of employees in service encounters? If so, to what extent do their perceptions influence customer satisfaction. Companies must examine customers' perceptions of their employees' encounter behavior in depth to evaluate and effectively and efficiently manage perceived effort and abilities as the main determinants of customer satisfaction. They should acknowledge behavioral training represents a significant satisfaction management approach.

## **Data Analysis and Interpretation**

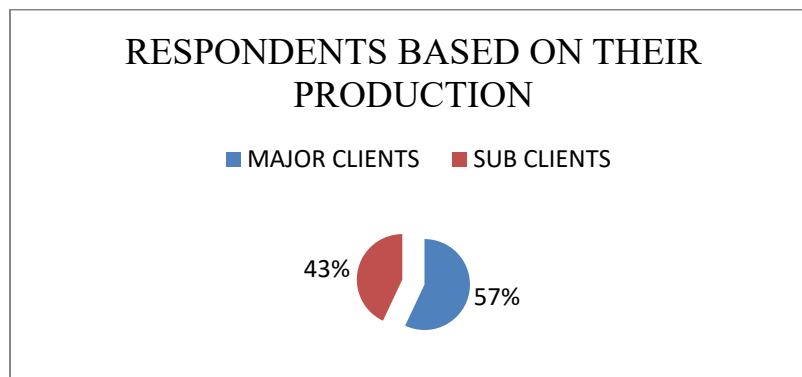
### **Percentage Analysis**

### **Respondents Based on Their Production**



**Table 1. Respondents based on their production**

Particulars	No. of Respondents	Percentage
Major clients	17	57
Sub clients	13	43
TOTAL	30	100



**Figure 1. Respondents Based on Their Production**

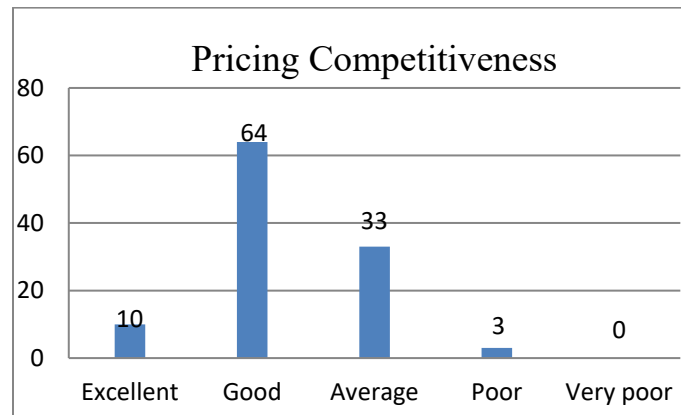
### Inference

57 % of respondents are the major client's deals with the automobile industry. 43% of the respondents are the dealers and the sun clients of auto mobile product

### Pricing Competitiveness

**Table 2. Pricing Competitiveness**

Particulars	No. of Respondents	Percentage
Excellent	3	10
Good	17	64
Average	10	33
Poor	1	3
Very poor	0	0



**Figure 2. Pricing competitiveness**

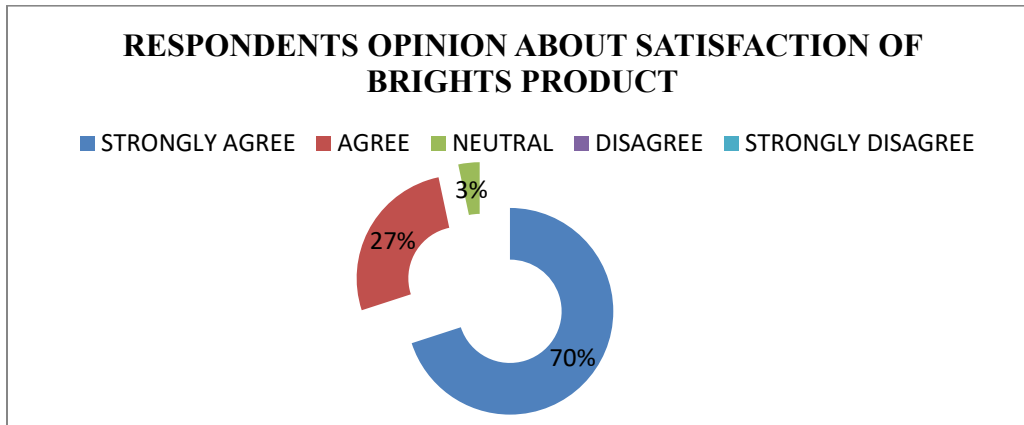
### Inference

64 % of the respondent are say that pricing competitiveness are good for brights product, 33% of the respondent are say that pricing competitiveness are average level, 3% of the respondents say that its poor pricing competitiveness for the product.

### Respondents Opinion About Satisfaction of Brights Product

**Table 3. Respondents opinion about satisfaction of bright product**

Particulars	No. of Respondents	Percentage
Strongly agree	21	70
Agree	8	27
Neutral	1	3
Disagree	0	0
Strongly disagree	0	0



**Figure 3. Respondents opinion about satisfaction of bright product**

### Inference

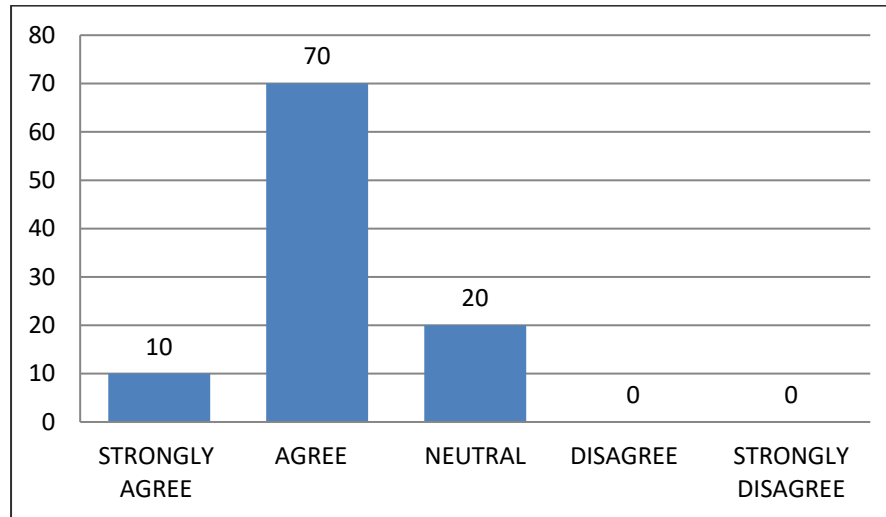
70% of respondents have strongly agree the satisfaction level of Brights product, 3% of respondents have neutral position on the satisfaction level of Brights product

### Respondents Opinion About Recommendation on Training and Development In Brights

**Table 4. Respondent's opinion about recommendation on training and development in brights**

Particulars	No of Respondents	Percentage
Strongly agree	3	10
Agree	21	70
Neutral	6	20
Disagree	0	0
Strongly disagree	0	0





**Figure 4. Respondent's opinion about recommendation on training and development in brights**

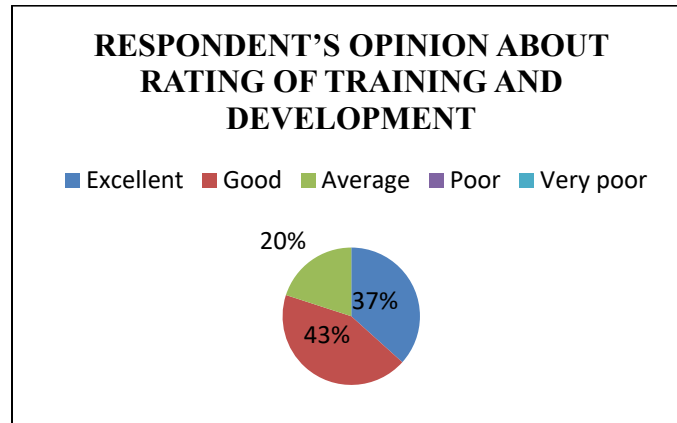
### Inference

70% of the respondent have agree that they would recommend on training and development in brights to others , and 20% of the respondent have strongly agree about the training and development in brights.

### Respondents Opinion About Rating of Training and Development

**Table 5. Respondent's opinion about rating of training and development**

Particulars	No of Respondents	Percentage
Excellent	11	37
Good	13	43
Average	6	20
Poor	0	0
Very poor	0	0



**Figure 5. Respondent's opinion about rating of training and development**

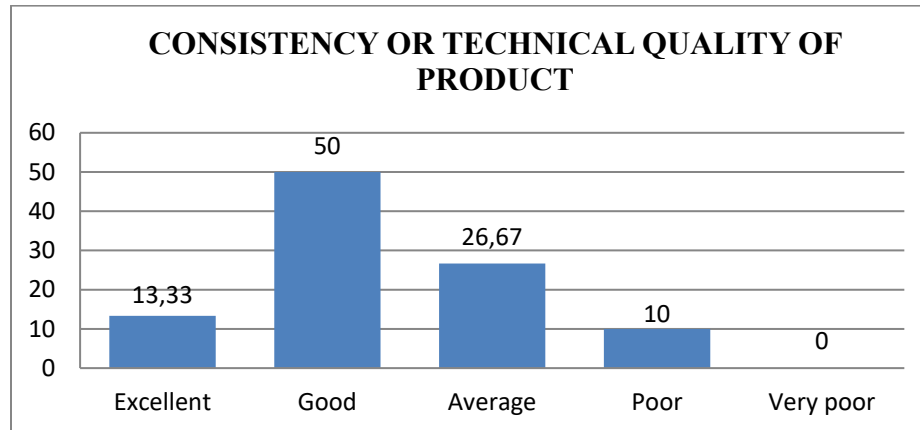
### Inference

43% of respondent have says the company has good rating on training and development , 37 % of the respondent have say that Company ratings on training and development are excellent ,20% respondent says its about an average.

### Consistency or Technical Quality of Product

**Table 6. Consistency and technical quality rating**

Particulars	No of Respondents	Percentage
Excellent	4	13.33
Good	15	50
Average	8	26.67
Poor	3	10
Very poor	0	0



**Figure 6. Consistency and technical quality rating**

### Inference

50% of respondent says that technical quality and consistency of the product are good, and 10% of respondent says that product sof bright auto plast are poor in technical quality.

### Weighted Average Method

### Employees Satisfaction Level

**Table 7. Employees Satisfaction Level**

S. No	Factors	1	2	3	4	5	WA
1	Overall satisfaction with Bright auto plast product	21	8	1	0	0	4.67
2	Satisfaction rating of the company	11	13	6	0	0	4.16

### Factors

1. Very satisfied - Excellent
2. Satisfied - Good
3. Neutral - Average
4. Dissatisfied - Poor
5. Very dissatisfied - Terrible



## Inference

According to weighted averages method in considering the Employees Satisfaction Level in the organization

1. Respondents overall opinion about satisfaction of bright product – 4.67
2. Respondents opinion about rating of company – 4.16

## Employees Expectation

**Table 8. Employees expectation**

S. No	Factors	1	2	3	4	5	WA
1	Compared to other training category	5	13	11	1	0	3.73
2	Respondents expectation about training in the bright	2	10	1	15	2	2.83
3	Delivery time of training	22	6	2	0	0	4.67

## Inference

According to weighted averages method in considering the Employees expectation.

1. Compared to other training category – 3.73
2. Respondents expectation about training in the bright – 2.83
3. Delivery time of training – 4.67

## Factors

1. Much better - Quality - Excellent
2. Somewhat better - Pricing - Good
3. About the same - Product - Average
4. Somewhat worse - Service - Poor
5. Much worse - All the above - Very poor



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## Findings

### Percentage Analysis

1. 57 % of respondents are the major client's deals with the automobile industry
2. 64 % of the respondent are say that pricing competitiveness are good for brights product
3. 70% of respondents have strongly agree the satisfaction level of training in Brights
4. 43% of respondent have says the company has good rating on training and development
5. 50% of respondent says that technical quality and consistency of the product are good

### Weighted Average Method

1. According to weighted averages method in considering the Employees Satisfaction Level in the organization
  - Respondents overall opinion about satisfaction of bright product – 4.67
  - Respondents opinion about rating of company – 4.16

### Suggestions

1. It has been observed that the organisation product is highly acceptable by the clients. It shows the quality maintenance of the company. It can be increased further more to get 100% satisfied employees.
2. The services provided by the company need to be improved for the betterment of the business two business marketing.
3. The Pricing strategy should be more competitive when compare to the competitors. To achieve the company should analysis of current market and understanding the market and aware of competitors.
4. The proper training and motivation will help to improve the consistency and quality of the product.
5. The Company can diverse its product line.
6. The company should improve its standard in order to achieve targets.



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7. The awareness of the Company's product should be increased among public.
8. The Company should use efficient strategies for retaining employees.
9. The company must try to produce zero defect products.
10. It is important for the company to serve the employees in better way beyond their expectation.
11. The company should maintain delivery time of the product to maintain the employees.
12. The rating of the company should be maintain among the employees.
13. Strategy should be developed in the company to overcome the competitors in the auto plast industry.
14. Expectation of the clients should be provided to achieve the target of the Bright Auto Plast industry.
15. The service provided for the major clients and dealers should be balanced.

## Conclusion

A study on perception and attitude of employees related to training and development in Bright Auto Plast Pvt Ltd, Chennai, This study is mainly carried on in order to find the employees satisfaction level on training and development of Bright Auto Plast Pvt Ltd. The major factors that lead to employees satisfaction on training with respect to product, pricing, quality and service.

- The service provided by the company should be increased among the clients and dealers.
- The Pricing strategy should be more competitive when compare to the competitors. To achieve the company should analysis of current market and understanding the market and aware of competitors.





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- The plastic product which are produced by injection moulding which should be converted to blow moulding products.

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2. <http://www.thehindubusinessline.com/catalyst/2006/04/13/stories/2006041300130200.htm>
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## A Study and Analysis of Factors Affecting Chennai Port Operations

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### Abstract

Today, the vast majority of non-bulk cargo is transported in Intermodal containers. The containers arrive at a port by truck, rail or another ship and are stacked in the port's storage area. When the ship that will be transporting them arrives, the containers that it is offloading are unloaded by a crane. The containers either leave the port by the truck or rail or are put in the storage area until they are put on another ship. Once a ship is offloaded, the container it is leaving with are brought to the dock by truck. A crane lifts the containers from the trucks into the ship. As the containers pile up in the ship, the workers connect them to ship and to each other. The jobs involved include the crane operators, the workers who connect the containers to the ship and each other, the truck drivers that transport the containers from the dock and storage area, the workers who track the containers in the storage as they are loaded and unloaded, as well as various supervisors. Those workers at the port who handle and move the containers are likely to be considering stevedores or longshoremen. Because they work outdoors in all types of weather, these workers adopted a type of cap that has a snug fit, is warm, and is easily put away in a pocket. Mainly for safety for dock workers and quick handling of cargos in less time and cost.

**Keywords:** Intermodal containers, cargo, Chennai Port Operations

### Introduction

Traffic forecasting requires a combination of commercial, economic and the mathematical techniques. Far more important is the need to bear constantly in mind the very high degree of uncertainty in any forecast, and to take steps to minimize the risk which this causes. Any forecast of future trade will be uncertain, and ports are particularly vulnerable in view of their long planning time-scale and limited ability to influence demand. All forecasts should be linked with the overall national development plans.

Furthermore, maritime trade is going through a period of rapid change which critically affects the volumes and types of traffic likely to use any port. Errors in forecasting can be serious, and the consequences of overestimating and underestimating are not equal.



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A traffic scenario is a consistent description of the whole of the future traffic likely to come to the port and the way it will build up. It assumes that the port does nothing to prevent the traffic arriving, but encourages it by providing reasonable facilities. For each cargo category, the probable volumes under different circumstances and the possible alternative types of technology that may be used in carriage and handling are all considered. Several scenarios are then drawn up, each fully self-consistent, resolving any clashes between forecasts for different trades and permitting a reliable estimate to be made of the resources needed.

The most useful control statistics available from the ship and shift records which should be kept are, as appropriate to each terminal:

- (a) The total tonnage handled;
- (b) The average ship turn-round time;
- (c) The average tonnage loaded and discharged per ship;
- (d) The volume of special traffic handled at a multipurpose terminal (i.e. the percentages of containers and ro-ro units, of bulk and bagged bulk shipments and of loads on pallets and pre-slung and pre-packaged loads);
- (e) The percentage of ships with a specified type of equipment such as shipboard cranes or stern ramps;
- (f) The average ship length;
- (g) The maximum draught on arrival and maximum ship length.

With the exception of the last item, it is preferable to use the three-month moving average for the control statistics.

## **Trend forecasting**

The fact that over the last few years a particular class of traffic has been increasing does not in itself mean that the trend will continue. Trends can reverse themselves very quickly. Before projecting any past trend into the future, the planner should determine the reason for this trend, and the likelihood of its persisting. In most cases in developing countries, the reasons will be one of the following:

- (a) Traffic is directly dependent on the GNP;
- (b) Traffic in a specific commodity or product has been deliberately developed or run down (e.g. national self-sufficiency in a major foodstuff; development of a new industry or of mines);
- (c) A gradual shift in regional centres of production or consumption is occurring;
- (d) A gradual shift in transport technology or routeing is occurring (from break-bulk shipment to containers; from maritime to overland transport, etc.).



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If it is desired to find a traffic trend in a series of annual figures, simple methods are the best to use. Usually all that is necessary is to calculate an annual percentage growth rate. or to plot quarterly figures and draw in the trend by eye. When the trend is particularly important and likely to persist, additional accuracy can be obtained by carrying out a “least squares fit” procedure to ascertain the form of the trend. This is a standard method given in text-books on statistics.

Whereas specialized traffic is generally linked to the development of a specific industrial sector, or to individual events and policy decisions, general cargo which in many developing countries consists predominantly of imports of consumer goods and general manufactures-is far more dependent on the trend in national wealth. An appropriate measure is the gross national product.

The figures for the GNP trend and the government target should be taken directly from figures available at the national economic planning unit. Port planners should not normally engage in this form of forecastin Apart from deliberate regional development policies, there will be occasions when pressures that build up produce trade shifts of their own accord.

One recurring pressure is that caused when a central region or capital city area grows to the point at which land and labour costs become very high and industrial conditions become less attractive. When that situation occurs, a port located in an area of less pressure, with good connections to the major internal markets, can expect a fairly rapid build-up of industry looking for alternative locations where conditions are more favorable

## NEED FOR THE STUDY

1. The study is mainly carried out to reduce the time and cost
2. The main need of this operations is to quick loading and unloading of cargo's.
3. The main performance of these port operatoion is to provide services for customers or employees.

## OBJECTIVE OF THE STUDY

### Primary Objective

- To study traffic department role in Chennai Port Trust.
- To find out the major problems and determine solutions to overcome the steve doring problems.



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## Secondary Objectives

- To study the overall operations in the Chennai Port
- To determine the kinds and tonnages of commodities that move through the port
- To determine the factors that affects the stevedore operations in the port.
- To determine the future trend of Cargo traffic in the port.
- To suggest various methods for improvement in overall stevedoring operations

## Scope of the Study

The study covers the overview of Chennai Port Trust operations.

- Detailed analysis of shipping cargo traffic trends, growth drivers, technology and innovation.
- This report gives broad view of cargo wise traffic and future outlook of the shipping industry.
- This report gives how portage workers are handled safely while loading and unloading of cargo's.
- The study describes the need for improvements to be made in the automated equipments to handle the growing trend of cargo.

## Review of Literature

1. Emerging inter-industry partnerships between shipping lines and stevedores: from rivalry to cooperation?, Martin Soppe, Francesco Parola and Antoine Frémont, INRETS-SPLOT French National Institute for Transport and Safety Research, 2 Avenue du Gl. Malleret-Joinville, 94114 Arcueil Cedex, France, University of Genova – Department of Business Studies, CIELI – Italian Centre of Excellence for Integrated Logistics, Via Vivaldi 5, 16126 Genova, Italy, International journal of shipping and stevedores 2006 –vol.1, no.6 pp.567-598. Since late-1960s stevedoring operations assumed a dramatic importance for shipping lines, who have been securing dedicated berths for some decades. Over the last 20 years, the institutional turn in ports drove the overseas expansion of pure stevedoring companies. For quite a long time carriers and stevedores fiercely battled each other both for bargaining contractual arrangements and for securing new concessions in the key port areas. Currently this scenario is slowly changing and some early-forms of partnership are coming out. This paper analyses the different pathways through which carriers satisfy their needs of handling services. Based on 2006 data it empirically demonstrates the growing resort to such forms of cooperation both contractually and via equity ventures.





**Keywords:** Shipping lines; International terminal operators; Ports; Corporate strategy; Co-operation; Maritime network

2. A critical review of conventional terminology for classifying seaports. K. Bichou and R. Gray, Faculty of Social Science and Business, Centre for International Shipping and Logistics, University of Plymouth, Plymouth, Devon PL48AA, United Kingdom, International journal of conventional terminology in port 2004-vol.12, no.1/2 pp.56-65, Seaports are complex and dynamic entities, often dissimilar from each other, where various activities are carried out by and for the account of different actors and organisations. Such a multifaceted situation has led to a variety of operational, organisational and strategic management approaches to port systems. It is noticeable in the current body of port literature that the conceptualisation of the port business has taken place at different disciplinary levels without producing a comprehensive and structured port management discipline. Much of the current literature on ports has been developed by international organisations and institutions in the field (United Nations Conference on Trade and Development (UNCTAD), World Bank Group, etc.) and a resulting terminology has evolved depicting specific concepts hardly understood by professionals and academics outside the field. On the other hand, many areas of port operations and management still remain unexplored, and there are few academic references outlining the different features of operational and strategic management in ports. This paper examines the validity of the conventional terminology for classifying ports, questioning the assumption that ports should be conceptualised as separate markets and distinct operational and business ventures. It seeks to demonstrate that in today's inter-related global markets and businesses with integrated logistics and supply chain flows, there is less of a case for the traditionally isolated and restricted port terminology.

**Keywords:** Conventional terminology for classifying seaports, outlining the different features of operational and strategic management in ports.

## RESEARCH METHODOLOGY

### Research Definition

Research is an organized, systematic database, critical, objective, scientific enquiry or investigation into a specific problem, undertaken with the purpose of finding answers or solutions to it. In essence, research provided the needed information that guides managers to make informed decisions to successfully deal with problems.



## Research Methodology

Research methodology is a way to systematically solve the research problem. It may be understood as a science of studying how research is done scientifically. The methodology followed was descriptive research which includes survey and fact finding techniques the main purpose of description of state of affairs as it exists at present

## Research design

Research design is a process of deliberate anticipation directed towards bringing an unexpected situation under control. A research model therefore enables a researcher to see the whole study structure and also realize the place and importance of the successive steps that he will be required to take in the total scheme.

## Type of Research

The type of research design used in the project was exploratory research. Exploratory research is a type of research conducted for a problem that has not been clearly defined. Exploratory research helps determine the best research design, data collection method and selection of subjects. Given its fundamental nature, exploratory research often concludes that a perceived problem does not actually exist. Exploratory research often relies on secondary research such as reviewing available literature and/or data, or qualitative approaches such as informal discussions with consumers, employees, management or competitors, and more formal approaches through in-depth interviews, focus groups, projective methods, case studies or pilot studies.

## Tools used for analysis

In statistics, spread sheets were used in major. MS Excel was used to draw bar charts for analysis.

## IPA model:

Indian Ports Association (IPA) was constituted in 1966 under societies Registration Act, primarily with the idea of fostering growth and development of all Major Ports which are under the supervisory control of Ministry of Shipping. Over the years, IPA has consolidated its activities and grown strength by strength and considered to be a think tank for the Major Ports with the ultimate goal of integrating the maritime sector. In just a short span of time IPA's proven expertise in ports is nothing but another milestone.

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- To undertake and promote Techno-Economic Studies and Research into matters pertaining to the Planning Organization
- To offer complete solutions to Port Management and to create a resource of information as a tool for decision making.
- To efficiently promote the use of Work Study, Management Accounting Strategies and other top-of -the-line tools of Management with a view to increase efficiency and productivity in ports
- To bring together various national as well as international organisations involved in Port and Harbour Operations, Management and allied activities and to maintain liaison between ports, Ministry of Shipping and other Government agencies.
- To promote the culture of Uniformity and Standardisation in the port functioning

Indian port association model can be expressed as :

$$\text{Average ship berth day (op)} = \frac{\text{Tonnage}}{\text{Stay at berth}} * 24 \text{ hrs}$$

## ANALYSIS AND INTERPRETATION

**Table 1. Traffic Handled During September 2013 and up to September 2013  
(IN '000' Tonnes)**

Commodity	For the Month of September 2013				From April 2013-September 2013			
	Imports	Exports	Total	Target	Imports	Exports	Total	Target
P.O.L	924	217	1141	1121	6018	960	6978	6730
IRON ORE	-	-	0	0	-	-	-	0
Fertilizer	0	-	0	25	38	-	38	150
Fertilizer (RAW)	15	-	15	28	131	-	131	165
NON COKING COAL	0	-	0	0	0	-	0	0

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COKING COAL	0	-	0	0	0	-	0	0
CONT. CARGO	1219	1183	2402	2555	7529	7073	14602	15330
OTHER CARGO	406	185	591	1271	3125	1375	4500	7624
<b>TOTAL</b>	<b>2564</b>	<b>1585</b>	<b>4149</b>	<b>5000</b>	<b>16841</b>	<b>9408</b>	<b>26249</b>	<b>29999</b>
Container TEU's			124462				756580	

**Table 2. Average Ship Berth day Output - In Tons**

Commodity	2010 - 2011	2011-2012	2012 – 2013	2013-2014 (UptoSep13)
Liquid Bulk	13680	12910	13409	15325
Dry Bulk	8488	7139	7029	7586
Break Bulk	2478	2026	2314	2728
Overall	11271	10888	12462	15110

**Table 3. Vessels Handled in Numbers**

Commodity	2010-2011	2011-2012	2012-2013	2013-2014 (UptoSep2013)
Liquid Bulk	502	507	460	221
Dry Bulk	308	223	183	85
Break Bulk	559	524	499	211
Containers	812	789	786	390
Total	2181	2043	1928	907



**Table 4. Average Turnaround Time of Vessels Cargo wise (In Days)**

Commodity	2010-2011		2011-2012		2012-2013		2013-2014 (Upto Sep 2013)	
	Port Account	Non Port Account	Port Account	Non Port Account	Port Account	Non Port Account	Port Account	Non Port Account
Liquid Bulk	1.86	4.87	1.91	2.73	2.03	2.45	2.00	1.68
Dry Bulk	3.77	2.46	4.13	2.25	3.98	1.75	3.62	1.19
Break Bulk	2.43	2.56	2.19	2.14	1.85	1.53	1.57	1.14
Overall	2.10	2.25	2.17	1.74	1.93	1.31	1.70	0.85

**Table 5. Average Pre Berthing Detention (In Hours)**

Commodity	2010-2011		2011-2012		2012-2013		2013-2014 (Upto Sep 2013)	
	Port Account	Non Port Account	Port Account	Non Port Account	Port Account	Non Port Account	Port Account	Non Port Account
Liquid Bulk	1.03	101.83	1.07	53.56	1.02	45.22	1.56	27.10
Dry Bulk	1.53	31.34	1.50	22.58	1.38	14.86	1.52	6.86
Break Bulk	0.89	26.36	0.85	19.98	0.85	11.13	0.96	4.20
Overall	0.97	37.66	0.94	26.91	0.89	18.23	1.06	9.72



Replacement theory:

$$T_a = T / n, \text{ where } T = C - S(t) \pm \sum f(t)$$

C=Capital cost of machine

S(t) = Scrap value or resale of machine

F(t)= Running cost/operation cost/maintenance cost

n = No of years

The GMK5095 Mobile Crane mobile crane used in port trust for steve doring operation the machine cost US \$ **12,200** and its scrap value - US \$ **200** the maintainence cost of machine are given below and when should the machine be replaced.

**Table 6. Maintenance cost of the equipments in port trust**

Yr	2	4	6	8	10	12	14	16
Maintainence cost	200	500	800	1200	1800	2500	3200	4000

$$T_a = T / n,$$

$$\text{where } T = C - S(t) \pm \sum f(t)$$

$$\sum f(t) = 12200 - 200 + (14200)$$

Yr	F(t)	$\sum f(t)$	S(t)	C - S(t)	$T = C - S(t) + \sum f(t)$	$T_a = T / N$
2	200	200	200	12000	12200	12200
4	500	700	200	12000	12700	6350
6	800	1500	200	12000	13500	4500
8	1200	2700	200	12000	14700	3675
10	1800	4500	200	12000	16500	3300
12	2500	7000	200	12000	19000	3166.67
14	3200	10200	200	12000	22200	3171
16	4000	14200	200	12000	26200	3275



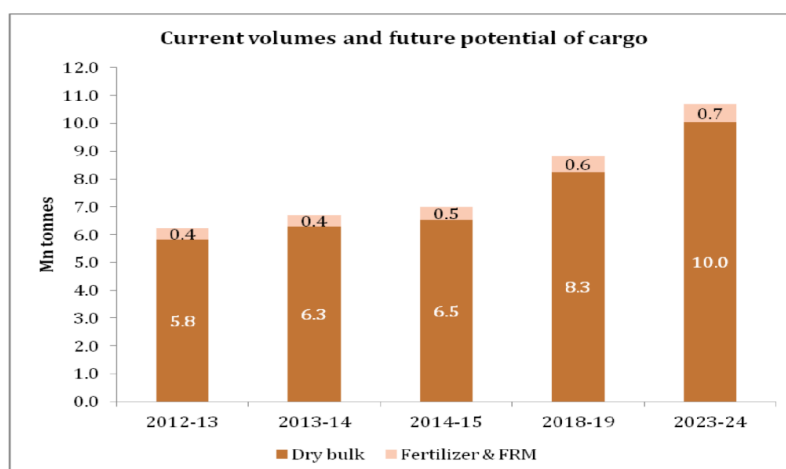


## Inference

The minimum maintenance cost of crane is US \$ 3166.67 , hence this min cost gives profitable to replace the crane in 12th yr

## Equipment requirement

For the purpose of this project, the cargo under consideration includes dry bulk cargo and fertilizers. The different cargoes categorized as dry bulk include lime stone, dolomite, barites, gypsum, food grains such as wheat handled in bulk, etc. These would be handled using a grab. The following chart shows the current levels of the above cargo types handled and the projection based on the most likely scenario made by the technical consultant. The cargo projections have been provided for the years 2018-19 and 2023-24 which is in line with the concession period of 10 years. In the most likely scenario, the cargo projection for the facility is estimated at 8.9 million tonnes for 2018-19 and 10.7 million tonnes for 2023-24.



Berth	Load bearing capacity in tons/sqm
NQ	3 t/sqm
WQ I, II, III & IV & CB	6 t/sqm
SQ I & II	3 t/sqm
JD I & III	5 t/sqm
JD V	3 t/sqm



Further, the port is of the view that the equipment profile needs to be determined by the load bearing capacity at these berths. At Chennai port, the load bearing capacity varies from 3 t/sqm to 6 t/sqm. However, the equipments available in the market are with a uniform quay load of 2 t/sqm. Hence, the port is of the view that the profile of the cranes is unlikely to be impacted by the load bearing capacity of the berths. The following table provides the brief details regarding the load bearing capacity at these berths.

### Equipment requirement

Equipment to perform operation between ship and shore and bulk handling operation on shore	<p>4 nos Harbour Mobile Crane (excluding the cranes to be handed over by Chennai Port Trust to the developer – Thangam crane – 150 tons and 6 nos. ELL wharf cranes each of capacity 15 tons)</p> <p>6 nos. Hoppers of 35 tons capacity each</p> <p>45 nos. of Dumpers of 25 tons capacity each</p> <p>3 nos. of Front end loaders of 5 cubic meters capacity each</p>
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For the purpose of this project, these equipments may be maintained as a common pool and deployed at North, West quay berths and at South and Jawahar Dock berths based on the requirements. The following are the technical specifications for the equipments.

a) Harbour Mobile Cranes	
Technical specifications :	
Lifting Capacity	: Upper limit 100 Tons and lower limit 34 Tons.
Max. Out-reach	: Not less than 32 mtrs. and not more than 48 mtrs.
Minimum Out-reach	: Not less than 11 mtrs and not more than 12 mtrs.
Tower cab height (Operator eye level)	: Not less than 21 mtrs.



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Handling compatibility : Dry bulk

Working speeds : Hoisting/ lowering : 0 to 60 mtrs/min

Slewing : 0 to 1.5 rpm

Luffing : 0 to 40 mtrs/min

Travelling : 0 to 5 kmph

- b) **Design of the equipment:** The self propelled Rubber Tyred Mobile Harbour Crane with crane control and crane management system (Integrated monitoring system) shall be designed and built to incorporate the latest technological features in “large crane” engineering using most advanced CAD/CAE design, engineering and calculation technology. The design shall be as per the relevant standards, to suit the local site conditions and to meet the requirement likely to occur in actual operations for the following:

Bulk handling by grab

Handling of heavy items like project cargo

## **FRONT END LOADERS /PAY-LOADER ( for evacuation/ shore clearance)**

- Capacity: 4 to 5 cu. Meters Bucket capacity
- Engine having not less than 200 HP having twin turbine transmission and full power steering
- Heavy duty axels feature hardened gears.
- Load sensing hydraulic.
- Additional attachment for timber logs, pipes

## **Project schedule, Capital Cost and financial returns**

The estimated capital cost of the project is Rs. 168 crore. The investment is phased across the period of 18 months for supply, erection and commissioning of equipment. Subsequent to commencement of commercial, the monitoring of the project being operated by the developer is to be performed by the Traffic department of Chennai Port Trust. For a concession period of



10 years including the supply, erection and commissioning period, the financial projections indicate a viable investment proposition.

### Marine Operation & Equipments

#### TUGS

NAME	Year	BHP	Bollard Pull
Sekkizhar	2003	1770 d 2	32 Tons
Sundaranar	2002	1770 x 2	- do-
Bharathiyar	2001	1700 x 2	45 Tons
Singaravelar	1996	1700 x 2	32 Tons
Nethaji	1995	1700 x 2	32 Tons

#### Pilot Launches

NAME	Year	BHP
Utility	1999	2 x 172
Progress	1993	2 x 232
Muthu	1989	2 x 232

#### Mooring Launches

NAME	Year	BHP
Velan	1996	162
Vignesh	1995	162
Veeram	1992	162
Vetri	1987	162



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## Findings

The following are the findings based on the study conducted at the Chennai Port Trust:

- Chennai Port trust has shown an increase of 6.82% growth during 2013 compared to 2012.
- Chennai Port trust occupies 3<sup>rd</sup> place in terms of total tonnage during the year 2012-13.
- The Port handled an all time high Chennai Port received 51 MT traffic. million tonne during the year 2012-13
- The port's percentage of import has been decreasing and percentage of export has been increasing. Import has decreased from 68% to 60% while export has increased from 31 % to nearly 40%.
- The quantity of coal handled by the Chennai port is found to have fluctuations over the years due to the prevailing global economic trend.
- The iron ore traffic increased by 2.5 times during the year 2007-8 compared to 2006-07 and thereafter the amount of iron ore imported has a smooth increase. The iron traffic had an all time high of 12.49 million tones during 2000-01.
- The number of vessels handled by the port is found to have a considerable amount of increase. The number of foreign vessels handled is nearly 3 times the number of coastal vessels. This shows Chennai port involves its major part in foreign trade.
- Till 2008-09 railway had the major share in receiving export cargo to the port. But in 2009-10 it is found that road ways has exceeded rail mode in receiving export cargo.
- Road ways is found to have major share of dispatching import cargo to various locations of the country. Percentage of cargo dispatched by road is found to be increasing.
- Automation equipments and advanced technology were used by the stevedore in the chennai port to reduce time for loading and unloading of cargo and also safety for portage workers
- Machine used by stevedore in the port ,when it can be replaced effectively to reduce the maintenance cost of the equipments since the cost is huge.

## Suggestions

The following are the suggestions for improvement in the performance of Chennai Port trust:

- Effective lighting system must be installed in order to increase the cargo handling efficiency during the night shifts.



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- Container terminals must be extended to handle large amount of containers in the future.
- The port must increase the depth of berths to accommodate vessels with larger drafts.
- Handling cost of cargo must be reduced.
- The port must increase its storage capacity to handle larger quantity of cargo.
- Infrastructure of the port must be improved to handle increasing amount of cargo traffic.
- Dwell time of cargo must be minimized.
- Hither land transport system must be enhanced and maintained properly.
- Automated machinery must be installed to avoid human errors.
- Effective pollution control techniques must be implemented.
- Dock laborers must be sufficiently trained to handle the cargo.
- To reduce the time and cost, by effective taining of dock labours and also usage of automation machines.
- Conveyer system must be extended to handle different kinds of dry bulks.
- Storage yards with sheds must be built to accommodate perishable cargos.

## Conclusion

The study undertaken by the researcher concludes that the performance has been effective and follows an increasing trend with respect to the future. The study also predicts the preferred mode of equipments used to load and un load the cargo's with respect to the different types of commodities.

At the present the Chennai Port Trust holds a good position among its competitors. The amount of cargo handled seem to increase gradually with certain economic fluctuations the chennai port strives to ahieve excellence in port operations with state of the art technologies and high level of automation in equipments.





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With the completion of Sethusamuthiram dredging, it is expected that the Chennai Port will have the burden to handle mother vessels and large bulk of cargo. The overall performance of Chennai port is profitable.

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## An Empirical study on Passenger's Perception to Fly before and during Covid-19 Pandemic – with Respect to Chennai Airport

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### Abstract

The global aviation industry has experienced a reduction in passenger's demand due to the spread of COVID-19 pandemic. The study examines the passenger's perception towards flying during and after COVID-19 pandemic. The respondents for the study will be 100 passengers from the Chennai airport. The Likert five scale rating has been used for the study. Non-Probability sampling method was used for the study. Outcomes of this study could be useful in transport planning and policymaking during pandemics based on the travel needs of people. In particular, government authorities could utilize such knowledge for planning smart and partial lockdowns. Service providers, e.g., taxi companies and retailers, could use such information to better plan their services and operations.

**Keyword:** COVID-19, Passenger's perception, Passenger's mentality, Travelling behaviour, Chennai airport.

### Introduction

The COVID-19 coronavirus pandemic has wedged all aspects of energetic and social life dimensions. due to government restrictions and fears of getting the virus, mass transport modes are limited. The transportation sector, alongside air, rail, road and water transportation have all been affected. the worldwide aviation industry has experienced a discount in passenger's demand thanks to the spread of Covid-19 pandemic. traveller and freight transportation have additionally been wedged severely, due to the advanced provide and demand trends. world road transport activity was virtually five hundredth below the 2019 average by the tip of March 2020 and business flight activity virtually seventy fifth below 2019 by period of time 2020. moreover,



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UK's restrictions on conveyance have diode to a ninety fifth reduction in underground journeys in London. Aviation activity worldwide has halted, resulting in severe quality challenges. The traveller possesses to prove the weather of: harm sustained, a recognized loss (death or bodily injury), the existence of associate accident, causation, the place wherever the accident occurred is on board the craft or throughout the operations of embarking or disembarking. The traveller, no matter the character of the air carrier, possesses to prove the weather of the carrier's liability. This paper can concentrate on the connected components of air carrier's liability for passengers' safety throughout the COVID-19 pandemic and it will analyse whether or not the amendment within the character of the liability has an impression on these components. due to the attainable affiliation between COVID-19 cases and a couple of the weather of air carrier's liability, the weather of accident and thus the situation of the accident are analysed during this paper.

The main issue here for a rider United Nations agency got infected by COVID-19 during the flight is whether or not or not the infection by COVID19 constitutes Associate in Nursing 'accident' per the Conventions. the other part that desires to be analysed in reference to COVID-19 cases is that the situation of this accident so as to work out air carrier's liability. The coronavirus pandemic has turned business aviation on its head and thus the expertise at the world's airports has modified drastically. Newspaper articles and social media are swarming with impressions of travellers, like reports concerning long queues – potential disease transmission hotspots – at underprepared, and infrequently overcrowded, airports around the world. If figures for the reduction on the wing movements and lost revenue type the quantitative basis, the expertise is that the qualitative live to report on and capture this extraordinary situation. Amid all the uncertainty, grasping what's happening is significant to planning ahead – early predictions have already been proved wrong.

## **Objectives of the study**

### **Primary objectives**

- To know the passenger's perception to fly before and during covid-19 pandemic.
- To find out the variables affecting the passengers to fly.

### **Secondary objectives:**

- To know the relationship between passenger's willingness and passenger's perception to fly before and during covid-19 pandemic
- To know the mediating relationship between passenger's perception to fly before and during covid-19 pandemic and affects passengers to fly.



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## **Review of Literature**

### **Passenger's Willingness**

Azzam Abu-Rayahs, Ibrahim Dincer, (2020) These authors says that the change of mode of transportation and subsequent implications on the sectoral energy savings COVID-19 pandemic is unprecedented, resulting in exceptional impacts on this sector. Canadian Civil Aviation activities dropped by 71%, compared to business as usual, whereas military aviation activities declined by 27%. As of the end of June 2020.

### **Transmission of Covid-19**

Eman Naboush, Ph.D., R. Alnimer, (2020) These authors states that in this study the situations when the air carrier is liable for the transmission of COVID-19 in the course of air transport. Where they state that if the transmission of COVID-19 an 'accident' within the Conventions' meaning and the period of air carrier's liability for passengers' contraction of COVID-19.

### **Safety of passengers**

Diego Alonso Tabares, (2021) This author proposes a pandemic-free travel concept based on creating an infectious diseases free zone and speediness of the disease transmission inside the airport terminal building through the process of screening of passengers, crews includes both cockpit crews and cabin crews and airport workers includes ground staffs, RAMP staffs, Engineers, Technicians, etc...., Theirs research shows that infectious disease detection methods applicable at the airport could be available in a short period of time and it is at the affordable cost and in scale.

### **Passenger's mentality**

Stefan Tuchen, Mohit Arora, PhD, Lucienne Blessing, PhD, They both states that in theirs study they points out a dominant focus in the practice and research on the most important customers experience and service quality during the period of covid-19 pandemic times and the passenger's mentality, as opposed to user experience and they say that it will be more helpful for all the airports around the world to gain a competitive edge in an increasingly



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commoditized industry in this risky and bad times.

## Passenger's preferences

Muhammad Abdullah, Charitha Dias, Deepti Muley, Md. Shahin (2020) These two authors discuss the Various measures were recommended or imposed by the government's rules and regulations in order to control the spread of COVID-19 disease. Travel behaviours are significantly influenced due to such measures followed during this covid-19 pandemic times. However, people have various travel needs starts from grocery shopping to work. They examine the changes that occurred in travel behaviour and preferences due to the COVID-19 pandemic.

## Research Methodology

Research methodology simply refers to the sensible "how" of any given piece of research.

More specifically, it's about how a researcher systematically designs a study to make sure valid and reliable results that address the research aims and objectives, in collecting the data, survey was used in this study. For survey, Quantitative research is used to gathers data from Current and possible customers using sampling method and online survey, questionnaires and the results of which can be shown in the form of numerical.

## Data analysis and interpretation

**Table No.1. Demographic Details**

Sl. No.	Demographic Details		Frequency	Percentage
1.	Gender	Male	59	59.0
		Female	41	41.0
2.	Age	18 to 24	18	18.0
		25 to 29	32	32.0
		30 to 35	36	36.0
		Above 36	3	3.0



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## Interpretation

In this frequency table we summarized in table format for better understanding. And above frequency tables are positive.

**Table No.2. T-Test**

<b>Group Statistics</b>					
Gender		N	Mean	Std. Deviation	Std. Error Mean
Willingness of the passengers	Male	59	2.2712	0.57387	0.07471
	Female	41	2.3317	0.56322	0.08796
Preferences of the passengers	Male	59	2.2034	0.68932	0.08974
	Female	41	2.3577	0.72797	0.11369
Mentality of the passengers	Male	59	2.3870	0.77028	0.10028
	Female	41	2.5976	0.72932	0.11390
Safety of the passengers	Male	59	2.3446	0.70837	0.09222
	Female	41	2.4553	0.72555	0.11331
Transmission of covid-19	Male	59	2.6073	0.79556	0.10357
	Female	41	2.7033	0.65140	0.10173
Passengers perception	Male	59	2.4407	0.78159	0.10175
	Female	41	2.7358	0.60205	0.09402
Passengers to flow	Male	59	2.4011	0.92388	0.12028
	Female	41	2.7561	0.73796	0.11525

## Interpretation

From the above T-Test there is no significant different between the male & female with all variables.





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**Table No.3. Correlation**

Willingness of the passengers	Pearson Correlation	1	-.004	.090	-.098	.199*	.470**	.426**
	Sig. (2-tailed)		.968	.374	.330	.047	<.001	<.001
	N	100	100	100	100	100	100	100
Preferences of the passengers	Pearson Correlation	-.004	1	.219*	.241*	.066	-.077	.055
	Sig. (2-tailed)	.968		.028	.016	.512	.444	.589
	N	100	100	100	100	100	100	100
Mentality of the passengers	Pearson Correlation	.090	.219*	1	.235*	.073	.130	.223*
	Sig. (2-tailed)	.374	.028		.018	.468	.196	.025
	N	100	100	100	100	100	100	100
Safety of the passengers	Pearson Correlation	-.098	.241*	.235*	1	.170	.041	.042
	Sig. (2-tailed)	.330	.016	.018		.090	.686	.679
	N	100	100	100	100	100	100	100
Transmission of covid-19	Pearson Correlation	.199*	.066	.073	.170	1	.280**	.289**
	Sig. (2-tailed)	.047	.512	.468	.090		.005	.004
	N	100	100	100	100	100	100	100
Passengers perception	Pearson Correlation	.470**	-.077	.130	.041	.280**	1	.315**
	Sig. (2-tailed)	<.001	.444	.196	.686	.005		.001
	N	100	100	100	100	100	100	100
Passengers to flow	Pearson Correlation	.426**	.055	.223*	.042	.289**	.315**	1
	Sig. (2-tailed)	<.001	.589	.025	.679	.004	.001	
	N	100	100	100	100	100	100	100

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

### Interpretation:

Through the correlation test we can come to know that all the variables are highly significant as all the values for the independent variables are below 0.05 level and therefore making it significant. Therefore, it can be said that they are highly correlated and making them significant and therefore H1.

**Table No.4. Model Summary**

Model Summary					
Model	R	R Square	Adjusted Square	R	Std. Error of the Estimate
1	0.527 <sup>a</sup>	0.278	0.240		0.63221

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- a. Predictors: (Constant), covid, preferences, willingness, mentality, safety The above table shows the 'R' value as 0.527, 'R Square' value as 0.278 and 'adjusted R Square' value as 0.240

**Table No.5. ANOVA**

ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	14.466	5	2.893	7.239	<0.001 <sup>b</sup>
	Residual	37.570	94	0.400		
	Total	52.036	99			

- a. Dependent Variable: Passenger's perception
- b. Predictors: (Constant), covid, preferences, willingness, mentality, safety. The above ANOVA table shows the 'F' value as 7.239 with with <0.001 significance.

There is no significant relationship between the dependent and independent variables.

**Table No.5. Coefficients**

Table No.5: Coefficients								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	0.741	0.423		1.752	0.083		
	Willingness of the passengers	0.550	0.116	0.430	4.734	<.001	0.930	1.075
	Preferences of the passengers	-0.126	0.094	-0.122	-1.334	0.185	0.913	1.095
	Mentality of the passengers	0.087	0.088	0.091	0.985	0.327	0.904	1.106
	Safety of the passengers	0.061	0.096	0.060	0.633	0.528	0.865	1.156
	Transmission of covid-19	0.183	0.090	0.186	2.038	0.044	0.923	1.083



### **Dependent Variable: Passenger's perception.**

Through the regression test we can understand that the independent variable (Willingness of the passengers, Transmission of covid-19) is significant. In addition, the other independent variables (Preferences of the passengers, Mentality of the passengers and Safety of the passengers) are not significantly correlated.

### **Conclusion**

Passengers perception to fly before and during the COVID-19 pandemic times is mainly affected by the passenger's willingness, passengers mentality, passengers preferences and transmission of COVID-19 which leads to reduce the passengers flow very badly so we can implement new techniques to adopt the current COVID-19 pandemic times to maintain the contact less services, less face to face interaction with passengers and Raised about the legality of security screening or searches conducted without particularized probable cause, and new screening technologies are not likely to allay concerns about government surveillance of innocent people boarding an airplane.

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## Influence of Knowledge Sharing on Social Capital Dimensions

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### Abstract

The term "social capital" may appear to be a strange combination of terms as it would make one wonder as to how social could be equated with capital. Social capital as a concept is seen considered to be oversimplification of a complex social phenomena from a sociological perspective that somehow does not match well with the usual definition of capital (from an economic standpoint). Nonetheless, the word is a fascinating fusion of sociology and economics, as well as a significant conceptual invention for interdisciplinary integration. However, experts can make the concept of social capital sound almost magical, and for many people who are learning about it for the first time, it can be intimidating. Social capital theory can appear to be a fortress, impenetrable to all but those with the keys. Yet, because we are basically social beings, all people intuitively understand the concept of social capital. Research with respect to social capital offers connections to vast resources on the concept and theory of social capital, as well as has helped in finding answers to many of the most often asked questions concerning it.

**Keywords:** social capital, social phenomena, sociology

### Introduction

The benefits of sociability are referred to as social capital. Social capital definition includes the features of social environment which offers productive paybacks. Human capacity to take into consideration others, to be able to think and behave in a generous and cooperative way is taken to be the essence of social capital. It deals with social structures and connections. It involves people getting to know one another and forming positive relations based on mutual trust, respect, kindness, and reciprocity. It entails societal arrangements that enhance prosocial behaviour while discouraging exploitative behaviour.

### Need for the Study

Critics further contend that the phrase "social capital" is ambiguous, difficult to quantify, poorly defined, and possibly not even a type of capital. Economists frequently argue that capital requires some type of present sacrifice – such as studying in school to increase your human capital when you could be playing outside – in order to yield future returns. Regardless of the disagreement, lawmakers and policymakers are becoming more interested in social



capital. One explanation for this is our cultures' growing awareness about marginalisation. Social capital, like any other form of capital, is considered to be productive, encouraging the accomplishment of goals that would otherwise be impossible to achieve.

### Review of Literature

Social capital can be both a source of input and a result of social and economic processes. Research carried out have mostly studied the relationship between social capital and health. Scheffler and Brown (2008) research has resulted in the identification of four dimensions which are seen to be mutually reinforcing thereby providing a basis for underpinning the association. To begin with, social capital is a channel for providing and disseminating information to group members, which can help them make better health decisions and behaviours. Second, social capital has an impact on group social norms, which can have a significant impact on health-related issues such as eating and smoking. Finally, it can also improve the access to health care services in a community by facilitating lobbying, for example. It can also result in providing psychological support with the help of networkings based on shared trust, which can help group members improve their physical and mental health. Because, in addition to ways from social capital to health, health could also exert a direct influence on it by determining, for instance, the ability of an individual to participate in varied types of activities involving group members, it is likely that there is two-way causality between social capital and health. Furthermore, both of these variables may be influenced by unobserved factors; social capital is frequently quantified at the individual level by choice variables (such as participation, affiliation, and trust), which are influenced by unobserved preferences. The vast bulk of the literature in this area, makes it difficult to show causal links between social capital and health (e.g., Durlauf (2002) and Folland (2007) whose work has led to examining the relationship between a variety of health measures and social capital,

### Objectives of the Study

The objectives of this study are as follows:

- i. To know the mediating effect of knowledge sharing on social capital dimensions among employees of IT firms in Chennai.
- ii. To understand the significance of demographics influence social capital dimensions.

### Methodology

The research design is descriptive in nature and the tool used to collect data from IT professionals of IT firms in Chennai has been a structured non-disguised questionnaire. The sample size was limited to 150 respondents and the sampling technique adopted was convenience sampling. The reliability of the research tool was tested and the same was found to be 0.821.





## Data Analysis

**Table 1 : Knowledge level of employees with respect to social capital**

Level	Frequency	Percent
Low	63	42%
Moderate	51	34%
High	36	24%
Total	150	100%

The above table which depicts the knowledge level of IT professionals with respect to social capital dimensions proves that they have a long way to go with respect to learning and using of social capital dimensions. 24% have indicated high level of knowledge, 34% have indicated moderate level of knowledge and 42% have indicated low level of knowledge. This low level of knowledge can be attributed to the fact that social capital dimensions being complex in nature is rather difficult to be understood by IT professionals who have always exposed only to technology-oriented aspects in their approach in handling work related issues.

**Table 2 : Level of usage of social capital**

Level	Frequency	Percent
Low	81	54%
Moderate	54	36%
High	15	10%
Total	150	100%

Next with respect to the question of level of usage of social capital dimensions in work situations it can again be seen that only 10% have indicated high level of usage, 36% have indicated moderate level of usage and the remaining 54% have indicated a rather low level of usage of social capital dimensions in influencing innovative work behaviour.

**Table 3 : t test for significant difference between gender and level of agreement with respect to determinants of social capital influencing innovative work behaviour**

Determinants	Gender				t value	P Value
	Male		Female			
	Mean	SD	Mean	SD		
Groups and Networks	38.22	6.98	37.67	6.26	2.195	<0.001**
Trust and Solidarity	35.33	7.30	34.34	6.24	1.483	<0.001**
Collective Action and Cooperation	26.78	5.16	25.88	5.17	2.178	0.003**
Information and Communication	45.71	5.85	44.11	5.42	2.466	0.004**
Social Cohesion and Inclusion	46.07	5.66	45.40	5.89	0.594	0.003**
Empowerment and Political Action	45.71	5.85	43.11	5.42	2.466	0.004**

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Knowledge sharing	47.31	9.71	46.33	8.74	2.195	0.002**
Innovative work behaviour	46.39	6.79	44.29	7.45	1.894	<0.001**

Note: \*\* Significant at 1%

The probability value which is seen to be lesser than 0.01, proves that there is a significant difference between gender of the IT professionals and their level of agreement with respect to the determinants of social capital influencing innovative work behaviour as compared IT professionals. Further analysis however shows that male IT professionals have a higher level of agreement with respect to determinants of social capital influencing innovative work behaviour as compared IT professionals.

**Table 4: t test for significant difference between managerial position and level of agreement with respect to determinants of social capital influencing innovative work behaviour**

Determinants	Managerial Position				t value	P Value
	Senior Management		Middle Management			
	Mean	SD	Mean	SD		
Groups and Networks	37.85	7.02	40.46	5.88	3.935	<.001**
Trust and Solidarity	34.79	7.26	37.44	5.93	3.900	<.001**
Collective Action and Cooperation	31.66	6.11	33.18	5.20	2.963	0.003**
Information and Communication	45.71	5.85	47.11	5.42	2.466	0.002**
Social Cohesion and Inclusion	46.07	5.66	46.40	5.89	0.594	0.003**
Empowerment and Political Action	47.35	9.86	49.39	8.37	2.185	0.009**
Knowledge sharing	47.34	9.73	49.36	8.79	2.155	0.004**
Innovative work behaviour	45.04	6.85	49.19	8.26	3.969	<.001**

Note: \*\* Significant at 1%

The probability value which is seen to be lesser than 0.01, proves that there is a significant difference between managerial position of the IT professionals and their level of agreement with respect to determinants of social capital influencing innovative work behaviour. Further analysis however shows that IT professionals who are designated as middle level managers have a higher level of agreement with respect to determinants of social capital influencing innovative work behaviour as compared IT professionals who occupy senior management positions.



**Table 5 : ANOVA for significant difference between age and level of agreement with respect to determinants of social capital influencing innovative work behaviour**

	Age group in years				F Value	P Value
	Below 35	35-40	41-45	Above 45		
Groups and Networks	39.75 (6.76)	38.93 (5.81)	36.22 (5.72)	34.53 (5.65)	2.531	<0.001**
Trust and Solidarity	37.79 (6.96)	36.40 (6.79)	35.49 (7.13)	34.02 (5.59)	1.900	<0.001**
Collective Action and Cooperation	32.88 (4.73)	28.10 (5.57)	26.45 (5.54)	24.82 (5.11)	2.670	0.003**
Information and Communication	45.29 (5.92)	46.32 (5.46)	45.52 (5.84)	43.97 (4.61)	5.716	0.004**
Social Cohesion and Inclusion	49.00 (5.04)	48.71 (5.77)	47.10 (5.63)	46.73 (5.35)	1.453	0.003**
Empowerment and Political Action	47.17 (9.60)	48.31 (9.34)	48.69 (9.39)	49.10 (9.00)	1.012	0.004**
Knowledge sharing	48.85 (4.87)	47.21 (5.00)	46.27 (5.85)	45.76 (5.33)	2.002	0.002**
Innovative work behaviour	44.72 (3.90)	39.73 (4.36)	43.67 (4.86)	48.48 (5.30)	2.649	<0.001**

Note: 1. SD value is given within bracket

2. \*\* Significant at 1%

The probability value which is seen to be lesser than 0.01, proves that there is a significant difference between age of the IT professionals and their level of agreement with respect to determinants of social capital influencing innovative work behaviour. Further analysis however shows that IT professionals who are in the age group of below 35 years have a higher level of agreement with respect to determinants of social capital influencing innovative work behaviour.



**Table 6 : ANOVA for significant difference between age and level of agreement with respect to determinants of social capital influencing innovative work behaviour**

	Educational Qualification					F Value	P Value
	UG	PG Diploma in HR	MBA	Professional	Others		
Groups and Networks	38.14 (4.90)	37.58 (7.45)	39.40 (6.62)	41.29 (6.14)	37.95 (7.05)	3.967	0.054
Trust and Solidarity	36.03 (5.06)	34.31 (7.85)	36.48 (6.75)	37.54 (5.82)	34.79 (7.41)	3.113	0.058
Collective Action and Cooperation	26.52 (3.57)	26.01 (5.38)	27.43 (5.37)	29.41 (5.30)	27.56 (4.98)	5.192	0.067
Information and Communication	45.05 (5.41)	46.00 (6.04)	45.75 (4.33)	48.96 (4.53)	46.04 (4.57)	1.453	0.097
Social Cohesion and Inclusion	45.75 (5.33)	43.96 (5.53)	47.04 (5.57)	49.33 (4.91)	46.02 (4.69)	1.858	0.082
Empowerment and Political Action	48.60 (5.97)	46.07 (10.44)	48.51 (9.68)	51.08 (7.95)	47.71 (10.02)	1.333	0.067
Knowledge sharing	46.18 (5.93)	45.29 (5.46)	47.29 (5.67)	47.38 (9.70)	49.25 (8.65)	1.499	0.087
Innovative work behaviour	46.44 (4.32)	143.96 (22.53)	150.04 (21.57)	155.33 (18.91)	146.02 (21.69)	3.858	0.061

Note: 1. SD value is given within bracket

The probability value which is seen to be greater than 0.05, proves that there is no significant difference between educational qualification of IT professionals and their level of agreement with respect to determinants of social capital influencing innovative work behaviour.

### Findings and Conclusion

Social capital could be of great help in disseminate information, thereby reducing the scope for opportunistic behavior, and facilitating collective decision-making. The extent to which structural social capital is used effectively would help in formation of associations and networks, which in turn help in fulfilling the role to played by groups. One of the important ways in which social capital can contribute to corporates welfare is bymaking them more profitable.



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## **İnovasyona Yeni Arayışlar: İnovatif ve Matematiksel Okuryazarlık (New Searches for Innovation: Innovative and Mathematical Literacy)**

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### **Özet**

İnovasyon faaliyetlerinin karakteristiği oldukça karmaşıktır. İnovasyon stratejileri; ekonomi, matematiksel düşünme ve beşerî sermaye gibi mekanizmaları içermektedir. Araştırmanın amacı, bu stratejilerin inovasyona yeni bir bakış açısıyla inovatif okuryazarlık ve matematiksel okuryazarlık kavramlarıyla ilişkisini mevcut literatürün sistematik bir taraması yoluyla incelemektedir. Matematik okuryazarlık; düşünen, üreten ve sorgulayan bireylerin, karşılaşacağı problemlerin çözümünde matematiksel düşünme ve karar verme süreçlerini kullanarak çevresindeki dünyada matematiğin oynadığı rolü anlama ve tanıma kapasitesi olarak tanımlanmış, matematiksel ve teknolojik gelişmelerden ortaya çıkan toplumsal bir gereksinim haline gelmiştir. Bu sebeple toplumlar için matematik okuryazarı bireyler yetiştirmek son derece önem taşımaktadır. İnovatif okuryazarlığın, bireyin çevrede ve toplumda meydana gelen olayları anlamlandırma, teknolojik gelişmelerin düzeylerinin farkında olma ve inovasyonla ilgili tüm konuları anlama yeteneğinden yola çıkıldığında matematiksel okuryazarlığı inovatif bireyle bütünleştirmek kaçınılmaz olacaktır. Bu çalışma inovatif ve matematiksel okuryazarlığın inovasyon için önemine odaklanmaktadır.

**Anahtar kelimeler:** İnovasyon, inovatif okuryazarlık, matematiksel okuryazarlık, matematiksel modelleme.





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## Abstract

The characteristic of innovation activities is quite complex. Innovation strategies; economics includes mechanisms such as mathematical thinking and human capital. The research aims to examine the relationship of these strategies with innovative and mathematical literacy concepts with a new perspective on innovation through a systematic review of the existing literature. Mathematical literacy; has been defined as the capacity of thinking, producing and questioning individuals to understand and recognise the role of mathematics in the world around them by using mathematical thinking and decision-making processes in solving the problems they will encounter. It has become a social need arising from mathematical and technological developments. For this reason, it is essential to raise mathematically literate individuals for societies. It will be inevitable to integrate mathematical literacy with an innovative individual when innovative literacy is based on the individual's ability to make sense of events occurring in the environment and society, to be aware of the level of technological developments and to understand all issues related to innovation. This study focuses on the importance of innovation and mathematical literacy for innovation.

**Keywords:** Innovation, innovative literacy, mathematical literacy, mathematical modelling.

### 1. Giriş

Yirmi birinci yüzyıl bilgi çağı olarak nitelendirilmektedir. Nitelikli insan, bilginin gelişimi ve yayılımı için çok önemlidir ve gerek teknolojik ilerleme gerekse de iktisadi büyüme ile sosyal gelişme arasındaki kritik bağlantıyı oluşturmaktadır. Bu anlamda toplumların bilim ve teknolojide görülen hızlı değişime ve yeni çevreye uyum sağlayabilmesi için, inovasyona ihtiyaçları bulunmaktadır. Dolayısıyla Bilim ve Teknoloji (BT) ile insan kombinasyonunun gelişmenin kilit unsuru olduğu söylenebilir.

İnovasyon her ne kadar kelime anlamı olarak yeniliği ifade etse de herkes için aynı anlamı taşımamaktadır. İnovasyon, yenilik kelimesinden çok daha kapsamlı bir kavramdır. Kaynakları, süreçleri ve değerleri bilmek inovasyona bakışımızı şekillendirir. Bu bağlamda inovasyona etki eden faktörleri çeşitlendirmek de kaçınılmazdır ve ona etki eden boyutları araştırmaya ihtiyaç vardır. Araştırmalar en kritik faktörün insan olduğunu göstermektedir. Öneminden hareketle inovasyon için gerekli olan ana faktör olan insanı nitelendirmek bu araştırmanın ana çıkışı olarak görülebilir.



Bu nedenle, anaokulundan lise sonuna kadar eğitimin her kademesinde öğrencilerin okuryazarlığının artırılmasının önemini vurgulamaktadır. Bu konu, önceki yılların aksine becerilerin ve algoritmaların uygulanmasının matematik, inovasyon, dijital, medya vb. eğitiminin ana hedefleri olarak kabul edildiği yeni bir okuryazarlık tanımlarından bahsedilmektedir (PISA, 2012).

Klasik anlamda okuryazarlık “yaşam boyu öğrenme bilincini oluşturma, bu bilinci geliştirme, daha etkin öğrenme için bireylerin yeni beceriler kazanmalarını sağlamaktır” (OECD, 2008). İnovatif okuryazarlık, bireyin, inovasyonun doğasını anlayabilecek temel becerilere sahip olmasından yola çıkıldığında bireyin yaşadığı ortamda ve toplumda gelişen olayları anlamlandırabilmesi, teknolojik gelişmelerin seviyelerinin farkında olabilmesi ve inovasyonla ilgili her türlü konuyu anlayabilmesi inovatif okuryazarlık seviyesiyle ilgilidir. İnovatif okuryazar olan bireyler birçok alanda kariyerlerinde avantajlı durumda olurlar. OECD'ye göre okuma okuryazarlığı, öğrencilerin yazılı metinleri veya grafikleri anlamaları ve kullanmalarını; matematik okuryazarlığı, sağlam temellere dayanan yargılarda bulunma yetenekleridir ve bilimsel okuryazarlık, bilimsel bir şekilde birden fazla yöntem kullanarak fenomen hakkında bilgi edinme yeteneğidir (OECD, 2009).

Ayrıca, son yıllarda, “okuryazarlık” kavramı “okuma ve yazma becerisinden” (Oxford English Dictionary, 1995) matematik, fen, mühendislik ve teknoloji gibi belirli okuryazarlık alanlarını içerecek şekilde genişlemiştir (PISA, 2003).

İnovatif bireyler yeniliklere ilham kaynağı olacak benliklere sahiptirler ancak onları motive edecek sistematik yapılara da ihtiyaçları vardır. Bireylerin fikirlerini ve yeteneklerini rasyonel değerlendirip, bilgilerini doğru yönetebilme yetkinliğine sahip olabilmesi inovatif okuryazarlık yeteneğinin bir göstergesi olarak değerlendirildiğinde itici güçlere ihtiyaç duyar.

## 2. Kavramsal Çerçeve

İnovasyon için geniş ve çeşitli tanımlamalar mevcuttur (Baregheh, Rowley ve Sambrook, 2009). Schumpeter (1934) inovasyonu ekonomik değişimin kritik boyutu olarak tanımlamada yeniliğin rolünü ilk tanımlayanlar arasındaydı. Damanpour (1996) inovasyonun ayrıntılı bir tanımını sağlar: "İnovasyon, bir organizasyonu değiştirmenin bir yolu olarak, ya dış çevredeki değişikliklere bir yanıt olarak ya da çevreyi etkilemek için önleyici bir eylem olarak düşünülmüştür."



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İnovasyon, yeni fikirlerin, süreç ürünlerinin veya hizmetlerinin oluşturulması, kabulü ve uygulanmasıdır (Thompson, 1965). Plessis (2007) dâhili iş süreçlerini ve yapılarını iyileştirmeyi ve pazar odaklı ürün ve hizmetler yaratmayı amaçlayan yeni iş sonuçlarını kolaylaştırmak için yeni bilgi ve fikirlerin yaratılması olarak tanımlamıştır. OECD'ye göre inovasyon, yeni veya önemli ölçüde geliştirilmiş bir ürünün tanıtımı veya iş uygulamalarında, işyeri organizasyonunda veya dış ilişkilerde yeni bir sürecin, pazarlama yönteminin veya organizasyonel yöntemin uygulanması olarak tanımlanmaktadır (OECD, 2005).

İnovasyon akademik dünyada tanımlama araştırmaları sürekli gelişirken onunla ilişkili olacak alt kavramlarda araştırılmaya ve literatüre katılmaya devam etmektedir. İnovasyon için inovatif okuryazarlara olan ihtiyaç inovatif okuryazarlık kavramının daha geniş çevreler tarafından kavramsal ve boyutsal olarak geliştirilmesinin de alt yapısını tetiklemiştir.

Okuryazarlık; Türk Dil Kurumu (TDK) tarafından “okuryazar olma durumu” olarak ifade edilirken, okur-yazar kavramı 1950’li yıllarda UNESCO tarafından gerçekleşen bir toplantıda hayatın içerisindeki kısa ve basit bir cümleyi anlayıp okuyabilen ve yazabilen kişiler için kullanılmıştır.

Araştırmacılar inovatif okuryazarlığı, bir bireyin işbirliği içinde yeni bir orijinal ürün inşa etme hedefiyle süreçler ve prosedürler hakkında sağlam temelli yargılar ve bilimsel çıkarımlar yapmak için yazılı metinleri ve/veya grafikleri anlama ve kullanma kapasitesi olarak tanımlamaktadır (Erdoğan vd, 2013).

İnovatif okuryazarlık; temel inovasyon kavramları ile ilgilenmenin yanısıra bu bilgiyi ve diğer inovatif becerileri bir ömür boyu inovasyon ihtiyacı için kaynakları etkili bir şekilde kullanma yeteneğidir. İnovatif okuryazarlık düzeylerinin yükselmesi bireylerin inovatif durumlarını doğru bir şekilde değerlendirebilmeleri ve yönlendirebilmelerini mümkün hale getirmekte, bazı sorumluluk ve zorluklar ile başarılı bir mücadeleye olanak sağlayarak, yaşamdan duyulan tatmini artırmaktadır. İnovatif okuryazarlık ile farkındalıktan bilgiye, bilgidен beceriye, beceriden tutuma ve tutumdan davranışa bir bağlantı ve birbirlerinin ilişkilerinden etkilenme söz konusudur.

İnovatif okuryazar olan (inovasyon bilgisine ve inovasyonu uygulama becerisine sahip olan) bir kişi, bu diğer etkilerden dolayı inovatif davranış artışları gerçekleştirebilir. Kişisel inovasyon bilgisini ve uygulamasını yeterince yakalayan iyi tasarlanmış bir inovatif okuryazarlık aracı, inovatif eğitimin inovatif çıktılara uygun şekilde davranmak için gereken beşerî sermayesinin ne kadar iyi geliştirdiğine dair fikir



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verebilir.

Bloom *et al.*, (1956)'nin okuryazarlık çalışmalarının çerçevesi kullanılarak inovatif okuryazarlık; inovatif bilgi, beceri ve öz-yeterliliğin biçimlendirici bir kombinasyonu olarak tarif edilebilir. İnovatif okuryazarlığın, inovatif bir karar için gerekli tavsiye ve bilgileri toplama becerisinin, bu kararı vermek için gereken güvenin (duygusal) ve gelecekteki kararlara uygulanabilecek deneyimlerden faydalı inovasyon bilgi depoları (bilişsel) inşa etme yeteneği olarak kurguladığımızda ve bu faktörlerden herhangi biri geliştiğinde, inovatif okuryazarlık artacaktır denilebilir.

'Matematik', matematiksel düşünme ile ilişkili klasik akademik erdemler olan çıkarsama yapma, hipotez önerme ve sonuçlar çıkarma yeteneğini içerir, ancak ana akım müfredat tarafından iletilen görüşe meydan okumayı amaçlar: “matematikte iyi performans gösterenler, diğerlerinden 'üstün' ve çeşitli uygarlıkların, kültürlerin, halkların, mesleklerin, cinsiyetin entelektüel başarısını göstermek” aslında daha zekidirler.

Matematiğin önemi, insan yaşamındaki ve bilim dünyasındaki birçok fiziksel olgunun ve davranışın soyut matematik modellere indirgenebilmesi ve bu modeller üzerinden açıklanabilmesinden ileri gelmektedir. Birçok kaynakta gerçek yaşam ile okul matematiği arasındaki kopukluğa vurgu yapılmış ve matematik bilgisinin yaşam pratiğine dönüşmediği ima edilmiştir (Stacey, 2015).

Matematik okuryazarlığı' ('matematik' yerine) ABD'de (1944'te) Ulusal Matematik Öğretmenleri Konseyi'nin (NCTM) bir Komisyonu tarafından Savaş Sonrası Planlar üzerine ve kısa bir süre sonra (1950'de) Canadian Hope'da kullanıldı. Bu terminoloji değişikliği, matematiksel 'süreçler' ile karşıtlik oluşturan 'ürünler' (tanımlar ve terminoloji; teoremler, yöntemler ve algoritmalar; benzer görev kümelerini çözme teknikleri) açısından okul matematiğinin matematiksel problem çözme, matematiksel argümantasyon ve akıl yürütme ve matematiksel konuların iletilmesi için buluşsal yöntemler gibi konulara dayanıyordu (Niss ve Jablonka 2014 ). Brown (2008) problem çözmeye yer alan matematiksel süreçler hakkında, ilkelerin öğrencilere açıkça sunulmasına izin verecek bir teori bulunmadığını belirtmiş ve bir pedagoji değişikliğini ima etmiştir.

Matematik okuryazarlığı, bireyin matematiği çeşitli bağlamlarda formüle etme, kullanma ve yorumlama kapasitesidir. Fenomenleri tanımlamak, açıklamak ve tahmin etmek için matematiksel olarak akıl yürütmeyi ve matematiksel kavramları, prosedürleri, gerçekleri ve araçları kullanmayı içerir. Bireylerin matematiğin dünyada



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oynadığı rolü fark etmelerine ve yapıcı, ilgili ve yansıtıcı vatandaşların ihtiyaç duyduğu sağlam temelli yargıları ve kararları vermelerine yardımcı olur (PISA 2012).

Kramarski ve Mizrachi, (2004); Meaney'e (2007) göre matematik okuryazarlık; bireyin matematiğe özgü üst düzey düşünme becerilerine ve yeterliklerine sahip olma ve bunları gerçekleştirme durumu olarak özetlenmektedir.

Matematik okuryazarlığı, son birkaç on yılda matematik eğitimi araştırmalarında merkezi bir tema olan “daha derin öğrenme” (Pellegrino ve Hilton 2012), “*anlamli öğrenme*” (Novak 2002) ve “*problem çözme*” ile yakından ilişkilidir (Foong, 2009; Koichu 2014; Mevarech, 2017).

Bireyin mevcut ve gelecekteki özel hayatı, mesleki hayatı, akranları ve akrabalarıyla olan sosyal hayatı ve kendi hayatı için ihtiyaç duyduğu şekilde yapıcı, ilgili ve düşünceli bir vatandaş olarak matematiğin oynadığı rol hakkında matematiği tanımlama, anlama ve meşgul olma ve sağlam temellere dayalı yargılarda bulunma kapasitesidir (OECD, 2000). Problem çözmeye yönelik bir modelleme perspektifi, bireyleri önemli matematiksel yapıların gelişimini ortaya çıkaran rutin olmayan problem durumlarıyla meşgul ederek, keşfederek ve geliştirerek başlayan bir etkinlikler dizisinin tasarlanmasına yol açar.

Pellegrino ve Hilton'un (2012) belirttiği gibi: “amaç, öğrencileri yeni problemleri çözmeye ve yeni durumlara uyum sağlamada başarılı olmaya hazırlamak olduğunda, o zaman daha derin öğrenme gerekir”.

Matematik okuryazarlığının merkezinde, yenilikçi toplumlarda matematik öğretiminin özü olan karmaşık, tanıdık ve rutin olmayan görevler yer alır (Mevarech ve Kramarski 2014; Mevarech, 2017).

İlgili literatürü gözden geçirmek amacıyla, bu makaledeki literatür taraması tekniğiyle araştırmacılara bazı temel ilkeleri sunar ve son olarak, üçüncü bölüm, düşünce ortaya çıkaran modelleme etkinlikleriyle çalışmanın öğrenciler ve öğretmenler için yararlarını tartışır.

İnovasyon, yaratıcı enerjiden faydalanmak ve bu yeni fikirleri tanımlanmış bir süreçler dizisi ile nihayetinde değerli bir sonuca taşımak olarak düşünülebilir. Bir insan yaratıcılık özelliğine sahip olabilir ancak bu fikir eyleme geçirilinceye kadar bir inovasyon olmaz. Yaratıcılık, fikirlerin üretilmesi ile inovasyon ise onları harekete geçirmekle ilgilidir. Yeni fikirlerle ortaya çıkan yaratıcılık yeterli değildir. Yeni veya



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mevcut fikirlerin alınması ve onları eyleme dönüştürmesi için inovasyona ihtiyaç vardır. Bu da mevcut bilginin uygulanmasını ve uygun yeni bilginin geliştirilmesini gerektirir (Gurteen, 1998).

### 3. Yöntem

Bu çalışmada meta-sentez yoluyla nitel bir araştırma yapılmıştır. Meta-sentez, pratikte nitel bulguları daha erişilebilir hale getirmek için teorik geliştirme, üst düzey soyutlama ve genelleştirilebilirliğe daha kapsamlı bir bakış açısını amaçlar (Aspfors ve Fransson, 2015). Buna ilave olarak, birden çok çalışmanın bulgularını birleştirmekle elde edilecek sonuçların, benzer bulgulara sahip bireysel çalışmaların geçerliliğini arttırabileceğini ve farklı bulgulara sahip bireysel çalışmaların nedenlerinin araştırılmasıyla yeni hipotezlerin kurulabileceğini ve sonucunda yeni bilgilerin elde edilebileceğini savunmaktadır.

İnovatif ve matematik okuryazarlığın inovatif bireydeki etkisini bulmak için nitel bir analiz yapılmıştır. Bu çalışmada nitel analiz yaklaşımının seçilmesinin iki nedeni vardır;

Birincisi, bu konuda mevcut literatür incelemelerin geliştirilmesi ihtiyacıdır. Yapılan mevcut çalışmanın amacı, inovatif okuryazarlık kavramının matematik okuryazarlığı literatüründe yerini belirlemek ve bununla birlikte kavramı etkileyen değişkenlerin de ilişkilerini ortaya koymaktır.

İkincisi, nitel yaklaşımlar araştırmacıların yaşadıkları dünyadaki insanların düşüncelerini öğrenmelerine izin verir. Diğer bir deyişle, literatür taraması, bir konudaki makalelerin geniş ve dağınık çeşitliliği ile izlerini sürecektir zamana veya kaynağa sahip olmayan okuyucu arasında çok ihtiyaç duyulan bir köprü sağlayarak bilimsel alana hizmet eder (Baumeister ve Leary, 1997).

Analiz edilen makaleler Google Academic, Emerald, Web of Science, ERIC, Science Direct, EBSCO, gibi veri tabanlarından elde edilmiştir. Kullanılan örnekleme stratejisi; bu çalışmaya uygun olan anahtar kelimelerin filtrelenmesidir. “İnovasyon (i)”, “İnovatif Okuryazarlık (io)”, “İnovatif Okuryazarlık ve İnovasyon (ioi)”, “Matematik Okuryazarlık(mo)”, “Matematik Okuryazarlık ve İnovasyon (moi)” “matematik eğitimi (me)” temelli makaleler seçilmiştir. Mevcut çalışmanın kapsamı inovasyonun birey bazlı yönleri üzerinedir. İlgili anahtar kelimeleri içeren makalelerde seçilen dönem 2000 ile 2022 yılları arası olmuştur. Literatür içi ve/veya dışı 205 adet yayım incelenmiş, bunların 103’ünden teorik olarak yararlanılmıştır. Bu makalelerin 10





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adedi de meta-sentez analiz çerçevesinde kullanılmıştır. İncelenen makalelerden elde edilen veriler, betimsel analiz ve içerik analizi yöntemi kullanılarak analiz edilmiştir. Genel özellikler olarak ifade edilen genel bilgiler betimsel analize, içerik özellikleri ise içerik analizine tabi tutulmuştur. Betimsel analiz, verilerin yüzdeleri ve frekanslarını; içerik analizi ise verilerin önce kodlanmasını ve ardından uygun temalar altında birleştirilmesini içermektedir. Son aşamada her bir analiz sonucuna yönelik frekanslar ve yüzdelere hesaplanmıştır.

Yapılan ön araştırmada 205 adet makalenin konu itibarıyla terimsel ilişkili olduğu görülmüş buna rağmen inovasyonla ilişkili az sayıda çalışmaya rastlanmıştır. Konunun ilişkisel olarak çalışılmamış olması bu araştırmanın özgünlüğünü ortaya koymaktadır. 2000-2022 yılları arasında yer alan 10 adet makale araştırmanın örneklemini oluşturmaktadır. Örneklem araştırması içerisinde yer alan makalelerde nicel, nitel ve vaka analizi metodolojileri mevcuttur. Araştırmaya dâhil edilen çalışmalarda ele alınan ana ve alt temalar bütün yönleriyle detaylı bir biçimde (nicel, nitel ve vaka analizi bulgularının tamamı) incelenerek hem tablolarda hem de analizlerde konu bütünlüğünü ve sentezleme aşamasında kolaylık sağlaması açısından belli bir kodlama ile sunulmuştur.

Bu 10 adet makalenin dağılımı Tablo 1’de gösterilmiştir. Seçilen başlıklar araştırma sorularının cevabına esas olan konulardır. Ayrıca, araştırmaya dâhil edilen çalışmalar konu başlıklarına göre sıralanarak analizlerde tanımlayıcı olması açısından konu başlıklarının ilk harfleri olacak şekilde kodlanmış ve yapılan analizler bu kodlama değerleri esas alınarak sınıflandırılmıştır.

Rosli, Capraro and Capraro (2014) çalışmalarında problem kurmanın öğrencilerin matematik öğrenmesine etkilerini bir meta-analiz yoluyla gerçekleştirmişlerdir. Çalışma başlangıçta yeteneğe dayalı, beceriye dayalı ve tutuma dayalı öğrenme çıktıları için güçlü ortalama etkiler, problem kurmanın önemli faydalar sağladığını ve bu öğrenme çıktıları arasında hemen hemen aynı düzeyde etkiyi hesaba kattığını göstermektedir.

Yamakami (2012) çalışmasında "inovasyon okuryazarlığı" terimini kullanmaktadır. Yazara göre "İnovasyon okuryazarlığı" terimi, uygulama odaklı inovasyondan uygulama sonrası odaklı inovasyon tasarımına geçişle ilgilenen bir kavramdır. Son olarak yazar, modern inovasyonun etkin yönetimini yakalamak için bir inovasyon okuryazarlığı modeli önermektedir.

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Mumcu (2016) çalışmasında matematiğin günlük hayatta kullanımı, matematiksel uygulamalar, matematiksel modelleme ve matematik okuryazarlığı kavramları arasındaki ilişkileri araştırmaktadır. Yazara göre bu kavramlar ilgili literatürde genellikle bağımsız kavramlar olarak ele alındığından birbirleriyle karıştırılmakta ve aralarındaki ilişkilerin anlaşılması güçleşmektedir. Bu çalışmada, kavramların içerdiği matematiksel süreçler ve bu süreçlerin gerektirdiği matematiksel beceriler üzerinde durulmuştur. Bu kavramlar içindeki ortak fikirler, vurguladıkları noktalar ve bireylere kazandırılması beklenen temel beceri ve kazanımlar ortaya çıkarılmaya çalışılmış, örnek uygulama ve modelleme problemleri sunulmuştur.

Munadi and Febriyanti (2020) çalışmalarında öğrenme boyutunda güvenilir bir matematik okuryazarlığı araçları tasarlamayı amaçlamaktadır. Araştırma sonuçlarında matematik okuryazarlığını ölçmek için kullanılabilir bir dizi araç üretilmiştir.

Lemke *et al.*,(2004) çalışmalarında PISA 2003 doğrultusunda matematik okuryazarlığının yeni müfredatlar arası problem çözme alanı ile birlikte derinlemesine değerlendirdiler. Matematik okuryazarlığı ve problem çözmede 2003 için önemli bulgular ortaya koyarak okuma okuryazarlığı ve fen okuryazarlığındaki öğrenci performansının 2000 ile 2003 arasındaki performans değişiklikleri hakkında analizler sundular.

Ülker, Bozkurt ve Altın (2020) matematik öğrenme -öğretme sürecinde matematik okuryazarlığına odaklanan makalelerin tematik analizinde kapsamlı bir çalışma yaparak literatürel katkı sağlamışlardır.

Niss'e (2003)göre matematiksel yetkinliği oluşturan yeterlilikler vardır. Matematiksel yeterlikler, iki gruba ayrılabilir. İlk gruptakiler “matematik sorularını cevaplama ve matematiksel bir soru sormada” aktive olan yeterlikler olup bunlar; problem çözme, matematiksel modelleme ve muhakeme etme yeterliğidir. Bunlardan problem çözme yeterliği, farklı türdeki matematiksel problemleri saptama, formüle etme, sınırlandırma ve hali hazırda formüle edilmiş problemleri çözebilme, modelleme yeterliği, mevcut modellerin temellerini ve özelliklerini analiz edebilme ve bunların doğruluğunu değerlendirebilme, yaşamsal durumları “matematikleştirme” ve muhakeme yeterliği, matematiksel problemleri çözmek için argümanları anlama, değerlendirme ve sonuç çıkarma anlamına gelmektedir. İkinci gruptakiler “matematiksel dil ve araçları kullanma” ile ilgili yeterlikler olup( temsil etme, sembol ve formal dili kullanma, iletişim ve matematiksel araç ve gereçleri kullanma yeterliği) dört tanedir. Yeterlikler ise yetkinliği destekler (Ülger, Bozkurt ve Murat, 2020). Matematiksel yeterlilikler iki kısma ayrılır. İlk kısım matematiksel bilgi ve beceriler



ikinci kısım ise destekleyici nitelikte olan dil ve araçlardır.

Maass, *et al*(2019) çalışmasında genel olarak STEM ve özel olarak matematik eğitiminin, bireyleri sosyo-bilimsel konularla etik olarak kabul edilebilir, sosyal olarak arzu edilir ve sürdürülebilir, sorumlu araştırma ve inovasyon dahil olmak üzere yirmi birinci yüzyılın zorluklarına daha iyi hazırlamaya nasıl katkıda bulunabileceğini teorik olarak analiz etmişlerdir.

Vistro-Yu (2009) araştırmasında; matematiksel becerilerin öğretilmesinde yararlı ve etkili olduğu kanıtlanmış mevcut ve eski problemler üzerinde inovasyon yapmanın öneminden bahsederek öğrencilere sunmak üzere “yeni” problemler geliştirmek amacıyla “kullanılmış” problemlerde nasıl inovasyon yapılacağına dair bazı ipuçları vermektedir. Yazar inovasyon bilincinin problem çözmede matematik becerisine etki edeceğini vurgulamaktadır.

Solovev *et al.*(2018), çalışmalarında, matematiksel modellemeyi inovasyonda yönetsel kararları doğrulamak için bir araç olarak belirtmişlerdir. Yazarlar aynı zamanda modern ekonomide kullanmanın artılarını ve eksilerini açıklamaktadırlar. Makale ayrıca Skolkovo Uzak Doğu şirketlerinden alınan veriler üzerinde matematiksel modelin başarılı bir şekilde doğrulandığını göstermektedir.

#### 4. Bulgular

Çalışmaların yayınlandıkları dergi türleri ve yayınlanma yıllarına ilişkin bulgulara bakıldığında 2010 yılından sonra ağırlıkta olduğu görülmektedir. Çalışmaların yayınlandıkları konularına ilişkin bulgulara bakıldığında inovasyonla ilişkilendirmenin yetersiz olduğu tespit edilmiştir. Çalışmaların yayınlandıkları analiz türüne ilişkin bulgular incelendiğinde yayımların çoğunlukla yıllık rapor, rapor gibi kamusal önceliği olan yayımlar olduğu yargısına ulaşılmıştır. Ayrıca çalışmaların yayınlandıkları çalışma grubuna ilişkin bulgular da öğrenci odaklı olarak seçilmişlerdir.



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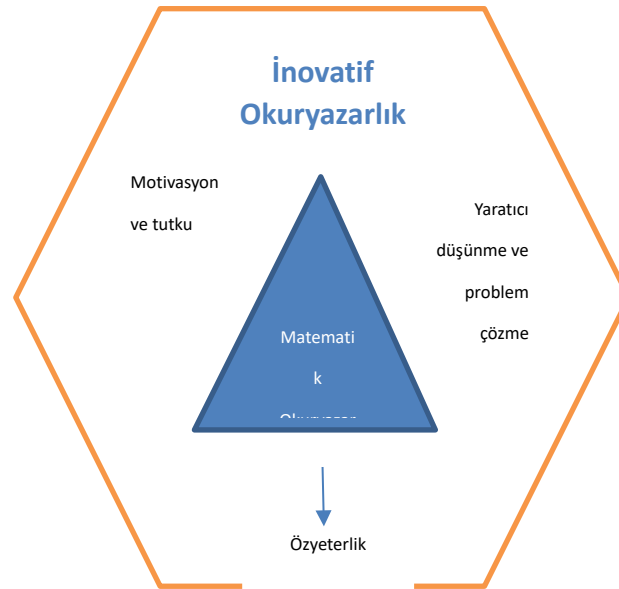
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**Tablo 1. Meta-Sentez'de Yer Alan Alanyazın Verileri**

No	Kod	Yazar(lar)	Odak	Dergi Türü	Araştırma Deseni	Çalışma Grubu
1	MO	Lemke, vd., (2004)	Problem Çözmede Matematik Okuryazarlığı ve Uluslararası Öğrenme Sonuçları	Araştırma Raporu	Nicel	Öğrenciler
2	Mİ	Vistro-Yu, 2009	Problem Çözmede İnovasyonun Bilişsel Değeri	Yıllık Rapor	Nicel	Öğrenciler
3	İO	Yamakami, (2012).	İnovasyon Okuryazarlığı: Çok Disiplinli Mühendisliğe Geçişten Çıkarımlar	Bildiri	Nitel	Literatür-Model
4	İO	Erdoğan, Çorlu ve Caprora (2013)	Robotik Programların Öğrencilerin İnovasyon Okuryazarlığına Etkisi	Alan indeksleri, EBSCO	Nicel	Öğrenciler
5	MO	Rosli, Capraro and Capraro, (2014).	Problem Kurmanın Öğrencilerin Matematik Öğrenmesine Etkileri	Alan indeksi, Web of Science	Nicel-Meta Sentez	Öğrenciler
6	MO	Mumcu, (2016)	Matematiği Kullanma, Matematiksel Uygulamalar, Matematiksel Modelleme ve Matematik Okuryazarlığı İlişkisi	Alan indeksi, Web of Science	Nitel (Teorik)	Literatür
7	Mİ	Solovev et al., (2019)	İnovasyonda Matematiksel Modelleme	Kitap bölümü	Nicel (Teorik)	Şirket verileri
8	ME	Maass, et al.,(2019)	Disiplinlerarası STEM eğitiminde Matematiğin Rolü	Springer-Survey Paper	Nitel	Literatür
9	MO	Ülker, Bozkurt ve Altın (2020)	Matematik Öğrenme -Öğretme Sürecinde Matematik Okuryazarlığına Odaklanan Makalelerin Tematik Analizi	SSCI	Nitel	Literatür
10	MO	Munadi and Febriyanti, (2020)	Matematiksel Okuryazarlık Araçlarının Tasarımının Öğrenme Boyutunda Validasyonu	SCOPUS-ERIC	Nicel	Öğrenciler



Şekil 1. İNO-MAT

### Araştırma konuları

1. İlköğretim Matematik Öğretmen Adaylarının İnovatif Okuryazarlık Düzeyleri İle Matematiksel Modellemeye Yönelik Tutumlarının İncelenmesi
2. İlköğretim Matematik Öğretmen Adaylarının İnovatif Okuryazarlık Düzeyleri İle Matematiksel Modelleme Özyeterlik Algıları Arasındaki İlişki
3. İlköğretim Matematik Öğretmeni Adaylarının Matematik Okuryazarlığı Özyeterlik Algıları İle İnovatif Okuryazarlık Düzeylerinin İncelenmesi
4. Mühendis Adaylarının İnovatif Okuryazarlık Düzeyleri İle Matematiksel Modellemeye Yönelik Tutumlarının İncelenmesi
5. Mühendis Matematik Öğretmen Adaylarının İnovatif Okuryazarlık Düzeyleri İle Matematiksel Modelleme Özyeterlik Algıları Arasındaki İlişki
6. Mühendis Adaylarının Matematik Okuryazarlığı Özyeterlik Algıları İle İnovatif Okuryazarlık Düzeylerinin İncelenmesi



### 3. Sonular

Bireyler geliřtike ve okuryazarlıkları arttıkka, aynı zamanda onları iinde yařadıkları toplumda inovatif ajanlar olarak faaliyet gsterirler. İnovatif okuryazarlık'a etki eden matematik okuryazarlık erevesinde her bir bileřene katılmak inovatif retkenliđi artırır. Bilgi, beceri ve eđilimleri kullanarak bir inovasyon aracısı olarak hareket etme kapasiteleri problemleri ve zorlukları ozmek iin gl bir yapı sunar. İnovatif okuryazar ve istenilen ğrenme yaklařımına sahip olan bireylerin birok alanda kendi emsallerine gre avantajlı durumda oldukları dřnlmelidir. Bu alıřma bireylerin inovatif okuryazarlıklarının ve yenilik ğrenme yaklařımlarının matematiksel okuryazarlık bařarıları ile olan iliřkisine odaklanarak literatrel durumu ortaya koymaktadır. Bu arařtırmanın nemi kiřinin matematiksel okuryazarlık yetenekleriyle desteklenen inovatif okuryazarlık seviyesinin bireye ve topluma kattıđı etkilere bir farkındalık olacaktır. İnovatif okuryazarlık seviyesi ykseldikke inovasyon, rekabet yeteneđi, kalkınma, bilim ve kltr arasındaki bađ kuvvetlenecek ve toplumların refah ve kalkınma seviyesi artacaktır.

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## **A Study on Auditors' Perceptions of the Added Value of Independent Auditing**

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### **Abstract**

The purpose of this study is to ascertain the perspectives of active auditors in Diyarbakır on the elements that firms consider when determining the added value of independent auditing. The information was gathered by the distribution of a questionnaire to independent auditors active in Diyarbakır. The study's sample comprises of independent auditors since auditors are the most significant employees who can evaluate the performance of firms' internal control systems and their direct impact on the added value of independent audit operations. A face-to-face questionnaire was administered to the independent auditors in order to collect study data. As a result of the study, it was determined that the effectiveness of audit firms, the effectiveness of the internal control systems of the enterprises and the efforts to identify and prevent the risks in the enterprises had an impact on the added value of the independent audit. In particular, the effectiveness of audit firms causes auditors to carry out effective and efficient activities. In addition, audit firms can increase the value-added activities of auditors by providing support to the development of professional and technical knowledge of auditors. In the detection and prevention of risks in the enterprises, first the internal personnel and then the personnel responsible for the audit are of great importance. As can be seen in the study analysis, the effectiveness of the internal control systems of the enterprises has a great role in the detection and prevention of business risks. Both the effective and efficient operation of my internal control system and its effectiveness in identifying and preventing risks will cause added value in independent audit activities. Therefore, while businesses should attach importance to activities that increase the effectiveness and efficiency of internal control systems, it is also important that they receive professional support for the detection and prevention of risks. In addition, in transforming independent audit activities into value-added activities, it will be effective to increase the effectiveness of audit firms, to ensure the effectiveness of the internal control



systems of enterprises, and to increase the effectiveness and efficiency in identifying and preventing risks in enterprises in this direction.

**Keywords:** *Auditor, Auditing, Independent Auditing, Added Value of Independent Auditing.*

## INTRODUCTION

The activities of businesses are increasing day by day and gaining an international dimension. In this context, a more reliable, transparent and accurate reporting system becomes inevitable for businesses. At this point, the importance of the audit element is increasing for both businesses and their activities, and independent audit is starting to play an increasingly active role day by day. Independent audit, which is prioritized in terms of the accuracy and reliability of the financial statements presented by the enterprises, makes a great contribution to the enterprises by determining whether the activities are carried out in accordance with the predetermined criteria. Quality is of great importance in independent auditing, which involves the process of collecting, evaluating and reporting evidence to the relevant parties by auditors who are experts in their field. The quality of the audit requires both the successful operation of the process and the quality activities of the auditors performing the audit work. In addition, there are many factors affecting audit quality such as organizational culture, staff competence of audit firms, size of audit firms, training and rotation practices in audit firms. Taking all these into account, increasing the audit quality and eliminating the deficiencies paves the way for a more successful audit process. In this framework, both audit institutions and audited enterprises have great responsibilities.

It is also observed that information users do not have sufficient information on how to ensure or enhance the quality of audit activities and have different expectations about the audit. One of the most important of these expectations is the added value expected from independent audit. This is evident from the fact that they have not been able to find answers to questions about what or what the added value of audit activities is. Clearly demonstrating the quality and expected added value in the independent audit both facilitates the audit process and increases the efficiency of the audit. For this reason, the fact that the audited transactions clearly determine the added value expected from the audit and present it to the auditors conducting the audit work will both increase the



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quality of the audit and contribute to the successful audit of the enterprises. The demonstration of added value in auditing offers many advantages for both businesses and audit firms. Integrating quality audit with internal audit will have many advantages, such as contributing to operational improvements, improving and increasing the quality of training, and minimizing or eliminating risks through better quality assurance and advisory services.

In the light of all this information, the aim of the study is to investigate the perceptions of auditors, who have great importance and responsibility in the audit business, on the quality and added value of independent audit. In this context, in the first part of the study, some concepts related to independent audit and information on the added value of independent audit are given. The second section includes a literature review on the subject. In the last section, the findings and analysis results of the survey conducted within the scope of the purpose of the research are evaluated. At the end of the study, a general evaluation and various recommendations were made and the study was completed.

## 1. ADDED VALUE OF INDEPENDENT AUDIT

There are many definitions in the literature regarding the concept of value added. To define the concept of value before the concept of value added, it is the importance and value given to any good. Value is a concept related to the benefits that a good provides as well as the abundance or scarcity of the good and the quality of the good. Value added is defined as the balance that emerges from the sales price of a product after deducting the things purchased from others to produce that product (Güneş, Togay, & Güneş, 2016: 99). According to another definition, value added is defined as all of the economic values created in an enterprise (Çatal, 2010: 339). It is also defined as what an enterprise adds to the inputs obtained from outside with its own efforts (Güneş, Togay, & Güneş, 2016: 103). The concept of value, which is important in independent audit activities, reveals the quality of the activities. Because the quality of audit activities creates value by generating benefits in line with the needs of different information users. Examples of the added value expected from audit services are that audit firms contribute to the development of independent audit activities, make the profession more attractive and ensure progress, and fulfil their responsibilities to stakeholders more successfully. In addition, undertaking responsibilities for the accurate and reliable presentation and reporting of financial information, which is of



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great importance for businesses, to information users is among the added values that are important for audit activities (Gökoğlan, 2019: 124).

Audit added value, which benefits businesses in many aspects such as improving business activities, determining targets and achieving targets, also provides maximum benefit in making objective analysis. By examining all functions, processes and activities of the value chain, it provides support to the organizations to achieve their strategies and objectives, and positively affects the deentim process of enterprises by increasing the added value of audits such as impartial and systematic evaluation of the results of activities, risk management, etc. (Gökoğlan, 2019: 124).

The added value of audit and the added value of internal audit affect each other. When the added value of internal audit activities is increased, the expected added value of independent audit is also positively affected. In this context, enterprises must first increase the added value of internal audit. Thus, by ensuring success in the appropriate planning and execution phases, the risks will be minimized by identifying the negativities that may arise in advance. This will clearly demonstrate the contribution of the value added to the audit period (Mihret & Woldeyohannis, 2008: 567).

Businesses have many expectations from the added value of audit. The most important of these expectations is that value-added activities should not only take place during the process, but also afterwards. Businesses should try to contribute to the audit process by adopting all processes that are new and beneficial, rather than only taking into account the negative experiences they have experienced in the past. One of the important points in providing added value is the careful selection of the audit team that will carry out the audit work. It is not only important to choose an impartial team. It is important to select creative, talented and business-oriented teams that think of the organization as a whole, set big goals for the future and strive for success (Gökoğlan, 2019:126-127).

The value-added audit process enables to obtain results that meet the expectations of both the entities and the users of the financial information provided by the entities. In the context of all this information, it is evident that audit quality and value added interact with each other.

There are not many studies on the relationship between quality and value added in auditing. The studies on the subject in the literature and their findings are given below.





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Gökoğlan and Tanç (2018) conducted a survey of 66 investment institutions in order to determine the effect of auditor independence on the added value in audit activities. As a result of the study, they obtained results such as investment institutions contributing to economic growth and increasing transparency in independent audit activities and positively reflecting on audit quality. Gökoğlan (2019) wanted to examine the added value in terms of the quality of independent auditing in his study and prepared a thesis on investment institutions within this framework. As a result of the research in the study, it was concluded that independent audit activities play an important role in corporate effectiveness, have a positive effect on the brand value of organizations and contribute to transparency in independent auditing. In addition, as a result of the study, some recommendations were made to managers, auditors and business managers working in independent audit institutions regarding the quality and added value perceptions of independent auditing. Gökoğlan (2022), as a result of the study on 48 independent auditors; improving independent audit companies' efficiency and quality will raise the value of independent auditing.

## 2. METHODOLOGY OF THE RESEARCH

The purpose of the study is to ascertain the perspectives of active auditors in Diyarbakır on the elements that firms consider when determining the added value of independent auditing. The universe of the research is made up of independent auditors who operate actively in Diyarbakır.

The information was gathered by the distribution of a questionnaire to independent auditors active in Diyarbakır. The questionnaire form is divided into two sections. The first section contains questions designed to ascertain the demographic characteristics of independent auditors. The second section contains statements that will identify the research's dependent and independent variables. The questionnaire form was designed using the Gökoğlan research (2019).

Considering the research purpose, four hypotheses were developed within the scope of the study. These hypotheses;

H<sub>1</sub>: The added value of independent audit has a positively associated with the effectiveness of the audit firms.

H<sub>2</sub>: The added value of independent audit has a positively associated with the effectiveness of the internal control system of the enterprises.



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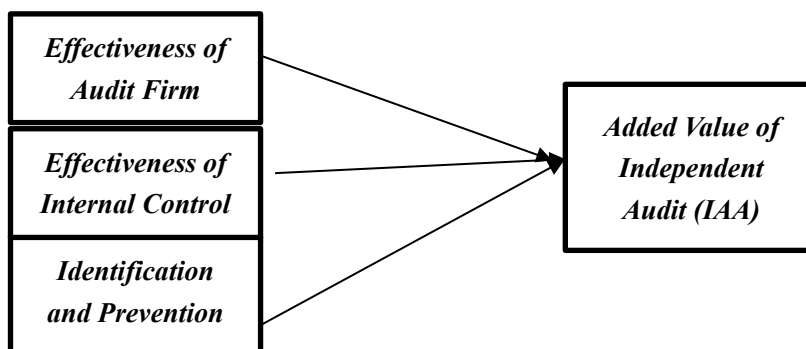
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H<sub>3</sub>: The added value of independent audit has a positively associated with the identification and prevention of risks in enterprises.

The study's sample comprises of independent auditors since auditors are the most significant employees who can evaluate the performance of firms' internal control systems and their direct impact on the added value of independent audit operations. A face-to-face questionnaire was administered to the independent auditors in order to collect study data. A questionnaire was distributed to 70 randomly chosen independent auditors. 7 surveys were eliminated from the scope of the research owing to missing or more than one marking, and 63 questionnaires were included in the research. The questionnaire return rate was judged to be 88 percent. To verify the reliability of the questionnaire, the Cronbach's alpha value was calculated as (.889) in the research. This rate shows that the questionnaire form has a acceptable reliability in the field of social sciences. According to George and Mallery (2003),  $\alpha > 0.9$  (Excellent),  $> 0.8$  (Good),  $> 0.7$  (Acceptable),  $> 0.6$  (Questionable),  $> 0.5$  (Poor), and  $< 0.5$  (Unacceptable).

Tables provide the frequency analysis findings of the expressions used in the study to generate demographic characteristics and independent variables. The normalcy test was used before deciding on the hypothesis tests in the investigation. To begin, the Kolmogorov - Smirnov test was used to determine if the data in the research were regularly distributed or not. As a consequence of the examination, it was discovered that all of the research data values were less than 0.05. This number shows that the data is not being disseminated in a typical manner. Skewness and Kurtosis values were considered in order to more accurately establish the data's normal distribution. The values of the research data were assessed to be in the range of -1.5 to +1.5 during the examination. These results show that the data is distributed normally (Tabachnick and Fidell, 2013). SPSS 22 program was used to analyze the data in the research.

In the study after the literature review, it is seen that the effectiveness of audit firms, the effectiveness of the internal control systems and identification and prevention of risks in enterprises of affect of the added value of independent audit activities. Therefore, the model of the study was created as seen in Figure 1 below.

**Figure 1: Study Model**

### 3. FINDINGS

The data obtained as a result of the survey applications carried out within the scope of the research were analyzed and the results were shown in tables.

**Table 1. Demographic Characteristics of Participants**

Variable	Frequency	Percentage	
<b>Gender</b>			
Female	10	15.9	
Male	53	84.1	
<b>Total</b>	<b>63</b>	<b>100.0</b>	
<b>Education Degree</b>			
Undergraduate	34	54,0	
Postgraduate	29	46,0	
<b>Total</b>	<b>63</b>	<b>100,0</b>	
<b>Firm</b>			
PwC	5		
KPMG	21		
Other	37		
<b>Total</b>	<b>63</b>	<b>100.0</b>	
	<b>Mean</b>	<b>Minimum</b>	<b>Maximum</b>
<b>Age</b>	37	29	57
<b>Years in profession</b>	18	5	35
<b>Years in firm</b>	5	1	17



Table I displays demographic data for the final sample. A total of 63 people responded to the gender question, with 10 (15.9%) females and 53 (84.1%) males. The responders ranged in age from 29 to 57 years. The average number of years in the field among respondents was 18, ranging from 5 to 35 years. The average number of years spent at the business was 5, with a high of 17 years.

**Table 2. Descriptive Statistics and Pearson Correlation Coefficients**

Variable	Mean	SD	1	2	3	4	5	6	7	8	9
1. Gender	-	,368	1	-,111	,035	,037	-,033	-,046	,143	-,086	,050
2. Age	37	1,012		1	-,035	,193	,045	,047	-,036	-,120	-,128
3. Education	-	,502			1	,111	,036	-,097	-,100	-,195	-,168
4. Years in profession	18	,889				1	,142	,019	,128	,169	,358*
5. Years in firms	5	,272					1	,031	,173	,099	,031
6. IAA	4,047	,455						1	,697**	,515**	,789**
7. AFE	3,920	,547							1	,679**	,697**
8. ICSE	3,841	,723								1	,611**
9. IPR	4,047	,455									1

Not: \*p<0.05; \*\*p<0.01;

A Pearson correlation test and multiple linear regressions were used to analyze the data. Table 3's correlation matrix displays the variables' means, standard deviations, and correlations.

Several highly significant correlations were discovered. The added value of independent audit revealed a statistically significant positive connection with all three factors: audit firm effectiveness (0.697\*\*), internal control system effectiveness (0.515\*\*), and risk identification and prevention (0.789\*\*). These findings demonstrate that all three parameters have a considerable influence on the value contributed of independent audit.

Furthermore, In the study, there is a moderate severity statistically significant and positive correlation between professional experience and detection and prevention of risks in enterprises with (0.358\*), which means that as the professional experience of auditors increases, it becomes easier to detect and prevent risks in the enterprise. There is a moderate severity, statistically significant and positive correlation between the



effectiveness of audit firms and the effectiveness of internal control systems of enterprises (0.679\*\*) and the detection and prevention of risks in enterprises (0.697\*\*). Finally, there is a statistically significant and positive correlation between the effectiveness of the internal control systems of the enterprises (0,611\*\*) and the detection and prevention of operational risks.

Simple linear regression analysis was used to measure the effect of the independent variables determined within the scope of the research on the dependent variable. The results are presented in tables 3.

**Table 3.** Hypothesis Testing

Model	Unstandardized		Standardized	t	Sig.
	Coefficients		Coefficients		
	B	Std. Error	Beta		
<i>(Constant)</i>	2,909	,344		4,643	,000
<i>Effectiveness of Audit Firm</i>	,479	,102	,479	4,684	,000
<i>Effectiveness of Internal Control System</i>	,191	,095	,210	2,961	,040
<i>Identification and Prevention of Risks</i>	,220	,063	,349	3,475	,001
<i>R</i>					
	,780 <sup>a</sup>				
<i>R Square</i>		,608			
			<i>Adjusted R Square</i>		
			,589		

Dependent Variable: Added Value of Independent Audit

Table 3 shows that there is a positive and significant relationship between the added value of independent audit and the support of effectiveness of audit firms, effectiveness of internal control system and identification and prevention of risks in enterprises ( $t=4,643$ ,  $p = 0.000 < p = 0.00$ ). According to the analysis results, the fitness of the model  $\text{Adjusted } R^2 = 0.589$ . This implies that the model accounts for 59% of the variation in the dependent and independent variables. Therefore, all hypothesis was accepted.

#### 4. CONCLUSION

As a result of the study, it was determined that the effectiveness of audit firms, the effectiveness of the internal control systems of the enterprises and the efforts to identify and prevent the risks in the enterprises had an impact on the added value of the independent audit. In particular, the effectiveness of audit firms causes auditors to carry out effective and efficient activities. In addition, audit firms can increase the value-added activities of auditors by providing support to the development of professional



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and technical knowledge of auditors. The effectiveness of the internal control systems of the enterprises has an important role in ensuring both the activities of the independent auditor and transparency in the activities of the enterprises. Therefore, the effectiveness of the internal control systems of the enterprises will increase the quality and added value of the audit activities.

In the detection and prevention of risks in the enterprises, first the internal personnel and then the personnel responsible for the audit are of great importance. As can be seen in the study analysis, the effectiveness of the internal control systems of the enterprises has a great role in the detection and prevention of business risks. Both the effective and efficient operation of my internal control system and its effectiveness in identifying and preventing risks will cause added value in independent audit activities. Therefore, while businesses should attach importance to activities that increase the effectiveness and efficiency of internal control systems, it is also important that they receive professional support for the detection and prevention of risks. This support can be achieved through the coordination of internal auditors and independent auditors. Therefore, this working environment will increase the added value of independent auditing.

As a result of this study, it was determined that the effectiveness of audit firms in the transformation of independent audit activities into value-added activities, ensuring the effectiveness of the internal control systems of the enterprises and increasing the efficiency and efficiency in identifying and preventing the risks in the enterprises in this direction.

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## The Role of Accounting Professionals in Creating Internal Control

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### Abstract

This study was carried out to determine the role of professional accountants in ensuring the effectiveness of the internal control system. In the study, it was also tried to determine the differences in the perspectives of dependent and independent accounting professionals on internal control activities. For this purpose, a face-to-face survey was conducted with the accounting professionals operating in Diyarbakır. There are 34 statements about internal control components in the questionnaire. Mann-Whitney U test was applied because the obtained data did not show normal distribution. As a result of the study, a statistically significant difference was determined between the independent professionals and the dependent professionals in the control environment and risk assessment activities, which are components of internal control. When these two components are taken into consideration, they stated that the dependent professional accountants can take on more duties and responsibilities than independent accounting professionals. However, no statistically significant relationship was found between the independent and dependent accounting professionals in control activities, information and communication, and monitoring activities, which are among the components of internal control. Considering the overall study, when the expressions in all components of internal control are taken into account, it has been determined that the independent accounting professionals want to take an active role and responsibility in the creation of internal control compared to the independent accounting professionals.

**Keywords:** *Internal Control, Accountants, Internal Control Components, Effectiveness,*



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## INTRODUCTION

Today, the needs of societies are increasing; The desire to adapt to ever-changing and developing conditions has prompted businesses. Depending on globalization, digitalization and technological innovations in businesses, and a competitive environment depending on economic developments have begun to form. Businesses trying to keep up with the environment have turned to studies such as expanding their activity volumes, increasing business processes, increasing the number of employees, increasing production capacity, and opening up to new markets. Many businesses that have started to become complicated due to this situation may be weak in controlling their activities and processes. Businesses can overcome this situation they encounter with a strong internal control system.

The whole of the strong policies created for the detection of frauds that may arise in the enterprises, the prevention of corruption, the protection of the assets of the enterprise, the correct creation of records and the effective and successful execution of all activities constitute the internal control structure of the enterprise. Businesses that have an effective internal control system are successful in determining their financial goals, accurately recording accounting records and preparing reliable financial statements. The internal control system, which contributes to the coordination and feedback between the activities in the enterprises and the execution of the policies and procedures determined in line with the business objectives, can be effective in the decisions taken by the managers and can eliminate the negativities to be experienced. The internal control system, which has a dynamic and recurring integrated structure, is not considered a linear process in terms of the interaction of business processes. Making calculations and reporting on activities in businesses, determining authorization and responsibilities are among the situations that are related to each other. This is possible with an effective accounting organization. Adapting to the competitive environment that arises due to the developing market conditions requires businesses to obtain timely, accurate and reliable financial information. This information is to establish an effective accounting organization and internal control mechanism; achieved by successfully integrating with each other. Although there are differences in the fields of activity, size, legal structure and number of employees of the enterprises, the necessity of the accounting organization and internal control system is inevitable for all businesses. By ensuring the coordination between these two important elements, businesses will



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determine the frauds that may arise in the records more easily, and will pave the way for the creation of more reliable and accurate records. Thus, the trust of all stakeholders in business management, employees and accounting information system will increase; The market value and position of the enterprise will be positively affected.

Accountants, who provide services to the state, businesses and society, have a great importance in economic life. The knowledge level, attitudes and responsibilities of professional accountants about internal control have a very important place in both the execution of the transactions and the quality of the services provided. In this context, the aim of the study is to examine the duties and responsibilities of professional accountants in establishing and monitoring internal control.

### 1. CONCEPTUAL FRAMEWORK

Successful management of businesses, collection, storage, reporting and processing of needed data is achieved with an effective internal control and accounting organization. In today's conditions, it is possible for businesses to adapt to the increasing competitive environment with accurate, timely and reliable financial information (Akbulut, 2010: 2). These situations are achieved by fulfilling the requirement for an effective internal control system. By fulfilling this requirement, the possibilities of error and fraud that may arise in the financial statements are reduced, individual weaknesses arising from the employees can be eliminated and the confidence in the prepared financial statements increases (Gönen, 2007: 6).

Internal control, which is effective in ensuring all these, is defined as the whole of the methods accepted and used in order to protect the assets of the enterprises, to conduct research on the accuracy and reliability of the accounting information in the enterprises, to increase the efficiency in the activities, and to guide the employees against the commitment to the determined policies. This definition, which is related to internal control, does not only include financial asset movements related to accounting, but also includes other situations within the scope of business purposes and activities (Güredin, 2007: 316).

There is a close relationship between the internal control system and the objectives and control activities of the enterprises. Businesses should first determine the control activities they need to achieve their objectives and then the procedures to be implemented. In the light of this information, the objectives of the internal control



system are as follows (Akyel, 2010: 85):

- ✓ To ensure the protection of the assets of the enterprise and to prevent losses,
- ✓ Ensuring that business activities comply with the determined policies and laws,
- ✓ To support the economic and efficient use of business resources,
- ✓ Contributing to the achievement of the determined goals and targets,
- ✓ Ensuring that accounting data is accurate and reliable.

The current internal control structure in businesses is defined as a process that includes not only the detection of errors and frauds, but also the measures taken to prevent these situations from occurring. The characteristics of internal control that make a great contribution to businesses are as follows (Şaşmaz & Çiftçi, 2017: 113):

- ✓ The internal control system is a liability in terms of helping employees manage risk and ensuring the organization achieves its objectives.
- ✓ It has the effect of providing reasonable rather than absolute assurance to meet the risks.
- ✓ It has a complementary nature as it permeates all activities of businesses.
- ✓ There is a close relationship between internal control components and internal control objectives.
- ✓ It is based on financial management principles such as compliance with legislation, accountability, economy and efficiency.
- ✓ All employees, including management, should be involved in the internal control system.

Regardless of the field of activity, legal structure and number of employees, the main objective should be to benefit from the internal control structure in all enterprises. Achieving this goal is possible by adopting and applying the principles of internal control. These principles are summarized as follows.

### **1.1. Principle of Separation of Duties**

This principle, which makes a great contribution to the functioning of the internal control system, envisages that the entire process from the beginning of financial events to their registration in the accounting records and the completion of the records should be under the responsibility of a single person. The main objective in the implementation of this principle is to ensure that everyone does their part, that employees can control



each other, that corruption is prevented and detected as early as possible, and that it contributes to minimizing errors and frauds (Yılancı, Yıldız, & Kiracı, 2016: 128). ). Four basic principles are adopted in the separation of duties. These are (Guredin, 2008: 330):

- ✓ *Separation of accounting records and protection of business assets*
- ✓ *Separation of the responsibility of accounting records from the fulfillment of the activities*
- ✓ *Approval of causing asset movement and separation of asset protection and assignments*
- ✓ *Separation of assignments made during the accounting registration process*

### **1. 2. Assignments Regarding Activities and Transactions**

It is of great importance for the effective internal control that the employees who have the appropriate equipment for each operation in the enterprises are assigned with the appropriate operations. There are two types of authorization, general and specific. In general authorization, sub-instructions are created to approve the transactions within the framework of the policies determined by the management. In special authorization, there is the use of authority given by the management for each transaction (Cömert, 2013: 60).

### **1. 3. Proper Documentation and Accounting Record Scheme**

The existence of an effective and successful internal control system in businesses depends on an appropriate documentation scheme. Documented invoices, order slips, product delivery minutes, etc. Documents and accounting records are the proof of the transactions performed. Responsibility is examined on the document by keeping these documents in computer or physical files. Not only documents related to current years, but also all documents and records of previous years must be archived regularly and accurately. In order to keep reliable accounting records and report accounting information to the relevant parties in a timely manner, every business must have a chart of accounts and accounting directives. A reliable functioning documentation, the existence of an accounting record system, is one of the most important evidences showing that an effective control over the assets is realized and recorded correctly (Uzay, 2009: 99).





#### 1.4. Independent Consensus

One of the most important aspects that shows whether internal control is operating successfully or not is that independent internal agreement has been achieved. This situation is a great necessity for their businesses. These reconciliations that affect the success of internal control should be made periodically and without notice by persons other than those responsible for the accounting records (for example, internal auditors). If non-compliances are detected as a result of the transactions, they should be reported to the business management in a timely manner.

#### 1.5. Physical Controls

One of the purposes of internal control is to physically protect the assets of the enterprise and to take precautions. If the physical assets of the enterprises are not properly protected, they may face risks such as theft and loss. For this purpose, physical counts are important for such assets. Since most of the accounting records are kept in computer environment recently, precautions such as limiting access to programs should be taken. In addition, operations such as controlled counting of the stocks of the enterprises and barcode numbering are also included in the physical controls (Şaşmaz & Çiftçi, 2017: 117).

The components of the internal control system are taken into account in order to determine whether the internal control system is sufficient and effective in enterprises. According to COSO, internal control is defined as the interrelationship of criteria established for the purpose of determining and realizing an effective internal control system. These components are created by considering the management style and philosophy of each business and may differ according to the businesses. Components of the internal control system; control environment, risk assessment, control activities, information and communication, monitoring. With these five components advocated in the COSO framework, the internal control structure and system are optimized, different views on internal controls are combined, and a consensus platform and conceptual framework are created for assessing internal control quality. In addition, these components are in close relationship with each other; they interact (Çiçekay & Demir, 2021: 3806). To briefly mention these components;

**Concept of Control:** The most important element in the regulation of the internal control system in international internal control standards is the “control environment” component (Özbilgin, 2010: 230). The internal control environment in the enterprises



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not only determines the tone of the organizations, but also contributes to the employees' control awareness and provides a disciplined working integrity with the other components of internal control (Çiçekay & Demir, 2021: 3806).

**Risk Evaluation:** It includes the evaluation and observation of all possible risks that the enterprises may encounter while performing their activities and all the measures that can be taken against these risks (Türedi & Buyer, 2014: 127). The effectiveness of risk assessment varies according to the degree of effectiveness of the control activities component, the information and communication component, the monitoring component and the control environment component.

**Control Activities:** Another component that contributes greatly to the realization of management directives is control activities. They provide support for taking the necessary measures to examine the possible risks in the achievement of the objectives of the institution.

**Information and Communication:** The main purpose of the information and communication component is to establish a coordinated communication system. The information and communication component is defined as the identification, collection and communication of information in an appropriate and timely manner to achieve financial reporting objectives. In information and communication in a business; It is believed that the control environment, risks, control activities and their implementation should be reported to their superiors and acted both horizontally from senior management to lower management level.

**Monitoring:** Since it is a process that analyzes the performance of internal control, monitoring in this process is performed by the internal audit department. The monitoring component of the internal control system determines whether controls are in place and are operating as intended, and if there are no controls, deficiencies are reported to the appropriate personnel responsible for such controls. The monitoring activities component ensures that the entire internal control process is fluid and not short-circuited. With a properly designed and implemented monitoring process, it will be ensured that the organization detects internal control problems in a timely manner and thus the continuous functioning of the internal control system (Çiçekay & Demir, 2021: 3806-3807).

In the light of all this information, the impact of accounting professionals on the functioning of internal control is quite large. For this reason, the accounting profession



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and its activities add great value to businesses. Accounting profession aims to establish the economic integrity of countries, to carry out accounting and auditing works in accordance with laws, rules, principles and methods; It is defined as the field of work and occupation acquired by individuals who support the protection of business interests by adhering to an impartial, objective, confidential and reliable attitude (Çukacı, 2006: 95). Professionals should attach importance to professional ethical principles such as impartiality, responsibility, confidentiality, honesty and reliability in order to achieve the benefits expected by businesses and to protect their professional reputation (Demir, 2015: 342).

Preventing the negativities caused by the informal economy is closely related not only with legal regulations, but also with the responsibility of the personnel performing the accounting profession. As members of the profession are given more important duties, on the one hand, all economic activities will be recorded, and on the other hand, audit and internal control practices will begin to function more strongly. For this reason, it has been determined as the main target in this study and it is aimed to contribute to the study of accounting professionals.

## 2. LITERATURE

In recent years, the concept of internal control has become a situation that has gained importance and is constantly developing. Therefore, many professional groups started to follow the developments regarding internal control and internal control and preferred to benefit from the internal control system in their activities. This situation has increased the interest of researchers in the concept and system of internal control, and the number of national/international academic studies conducted in this context has increased. When the studies are examined, it is seen that businesses operating on the basis of internal control, public institutions, audit firms, the banking sector, accounting professionals, academicians doing research in the field of internal control, etc. Many issues have been explored, such as the way members of the profession rely on internal control in the conduct of their business and their perspectives on progress related to this issue. In this regard, some of the academic studies in the literature are given below.

Ömürberk and Altay (2011) aimed to investigate the effectiveness of the internal control system and by examining tourism enterprises; It has been concluded that with the existence of an effective internal control system, possible cost increases in enterprises

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can be prevented. In their study, Acar and Akçakanat (2012) wanted to examine the internal control systems of the Strategy Development Departments operating as the accounting unit of universities. In the research, 74 state universities were included in the study and the results of the research were mentioned. As a result of the research, they concluded that most of the universities accept internal control as preliminary financial control, they have made an effort to have an internal control system, but the performance of accounting units is insufficient in this regard.

Hatunoğlu et al. (2012) mentioned the necessity of using the internal control efficiency of the studies to reveal the errors and frauds in the enterprises; They emphasized that if it is used, the errors and frauds can be reduced by working more efficiently and effectively. Bozkurt (2014) aimed to conduct a study on SMMM in his study and conducted a survey. According to the results obtained from the survey study applied to 169 SMMM, it was concluded that if there is an effective internal control system in the businesses belonging to the taxpayers of the accountants, there is a decrease in the workload of the accountants. Another result obtained is that the performance of the members of the profession will be positively affected by the successful functioning of the internal control. Othman et al. (2015) wanted to identify the methods used to reveal corruption and fraud in the public sector. In this context, they applied a survey to professional accountants and internal auditors in Malaysia. As a result of the implementation, it was concluded that methods such as effective internal control, operational audits, implementation of fraud reporting policies, rotation of employees at regular intervals are effective.

Appiah (2015) investigated issues such as examining the perspectives of accountants on internal control in the organizations they work for, and how they identified their weaknesses in internal control. For this purpose, it dealt with the Northern Virginia region. In the study, they preferred an application that included open-ended questions with face-to-face semi-structured questionnaire technique. In addition, using the document review technique in the study, they obtained the result that an effective internal control has a serious effect on the emergence of fraud. In their studies, Gönen and Solak (2016) aimed to measure the level of knowledge of professional accountants regarding internal control in line with the principle of transparency. They determined the level of internal control knowledge of the professionals regarding the interpretation of the financial statements and risk determinations. In addition, they tried to determine

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whether the level of knowledge gained in the study contributed to the transparency of the enterprises. Tanç and Kara (2016) tried to determine the approach of professional accountants to internal control and their role in this regard. In the survey study they conducted on accountants in Malatya, they concluded that there is a statistically significant difference between dependent and independent professionals in the control environment, information and communication and monitoring activities, which are the components of internal control. In risk assessment and control activities components, they found that there was no statistically significant difference between dependent workers and self-employed professionals.

Şaşmaz and Çiftçi (2017) conducted a research using the case study technique for the internal control structure of a business operating in the marble sector; It is aimed to determine the strengths and weaknesses of the internal control structure of the enterprise and the results related to the purpose of the study are included. Karahan and İğde (2017) aimed to reveal the effect of the internal control system on accounting errors and frauds in their study, in which 44 companies applying the TCC were taken as samples. By choosing the survey application in the research; They tried to interpret the study findings with statistical analysis. As a result of the analysis, they determined that internal control is quite effective in revealing errors and frauds in accounting. Ağmaz (2018), in his study, which aims to reveal whether metropolitan municipalities act in accordance with internal control and internal control standards, has concluded that it is not sufficient to make internal control systems in accordance with public internal control standards, and there is weakness in compliance with risk assessment and control activities. . In Uğurlu's (2018) study, it was aimed to examine how the internal control structure emerged and the awareness of state universities about internal control; In this context, a questionnaire was applied to the Heads of Strategy Departments of the universities. By analyzing the data obtained as a result of the research, it was concluded that the protection of owned resources against internal and external risks would be possible with an effective internal control and internal audit.

Kütük (2019), survey application was conducted in this study in which the effectiveness of the internal control system in publicly traded companies was investigated. The survey results were analyzed with the SPSS package program; It has been concluded that companies operating in the financial sector have a higher level of internal control system than those in the real sector, and that the internal control system



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is superior in companies that have more experienced employees and receive training on internal systems. Dede (2020) wanted to investigate the situation of the internal control system in universities by taking Adıyaman University as an example in his study. As a result of the study, it was concluded that the internal control system was not sufficiently internalized by both academic and administrative staff. In his study, İşıdogru (2021) wanted to examine the application of the internal control system in the banking sector and its efficiency in the sector. Within the scope of the study, a questionnaire study was applied to 144 bank employees in Istanbul, which was created in line with the purpose of the study. As a result of the study, it was concluded that all five components of internal control are effective on productivity.

### **3. PURPOSE OF THE RESEARCH**

Internal control plays an important role in ensuring the effectiveness of business activities and ensuring compliance of activities with accepted policies and procedures, as well as compliance with laws and regulations. Internal control activities consist of an integrated system around five components. Each component is important for businesses. Therefore, the human factor is very important in ensuring the effectiveness of internal control and in its institution. In this direction, the aim of the study is to examine the duties and responsibilities of dependent and independent accounting professionals, who have an active role in the creation and monitoring of internal control activities in enterprises.

### **4. SCOPE OF THE RESEARCH**

This research has been applied to accounting professionals operating in Diyarbakır province. Questionnaire forms were applied face-to-face to 480 professional accountants selected by simple random method to 716 accounting professionals operating in Diyarbakır. As 8 of the recycled questionnaires were filled in incorrectly or incompletely, 472 questionnaires were included in the research. The recycling rate was determined as 98%.

The questionnaires created within the scope of the study were created by benefiting from the study of Tanç and Kara (2016). The questionnaire form consists of two parts. In the first part, there are questions about the demographic characteristics of the participants. In the second part, detailed questions about the control environment, risk assessment, control activities, information-communication systems and monitoring





activities were asked to the participants in order to determine the effectiveness of professional accountants in internal control. The obtained data were analyzed and the Mann-Whitney U test was applied because the data did not show normal distribution. Analysis results are presented in tables and interpreted.

## 5. FINDINGS OF THE RESEARCH

In this part of the study, firstly the general or demographic findings related to the research and then the findings of the roles and duties undertaken by the professional accountants participating in the research regarding each component of internal control will be given.

**Table 1:** Descriptive Statistics on the Demographic Characteristics of the Participants

Gender	Frequency	Percentage	Job Status	Frequency	Percentage
Female	173	36,7	Dependent Worker	175	37,1
Male	299	63,3	Independent Worker	297	62,9
<b>Total</b>	<b>472</b>	<b>100,0</b>	<b>Toplam</b>	<b>472</b>	<b>100,0</b>
Age	Frequency	Percentage	Professional Experience	Frequency	Percentage
30 years and under	189	40,1	3 years and below	71	15,0
31-50 years	254	53,8	4-10 years	217	46,0
51 years and over	29	6,1	11-20 years	151	32,0
<b>Total</b>	<b>472</b>	<b>100,0</b>	21 years and above	33	7,0
			<b>Total</b>	<b>472</b>	<b>100,0</b>

The majority of the participants in the study are men. It was determined that more than half of the participants were in the middle age group. It has been determined that the majority of the participants continue their long-term professional activities. It has been determined that the majority of the participants are self-employed. In addition, it was determined that female participants had a higher rate of dependent work than male participants. Therefore, it has been determined that while women generally prefer to work in a business, the majority of men prefer to work independently.

### 5.1. Findings Related to the Concept of Control

In order to determine the roles of the professionals participating in the research regarding the control environment while establishing the internal control systems in the enterprises, the level of participation in nine statements prepared according to the 5-point Likert scale was measured. The obtained data were transferred to the analysis



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program and the Mann-Whitney U test, which is one of the non-parametric tests, was performed because the data did not show normal distribution. A significance level of 0.05 was taken into account in the interpretation of the results. The results obtained are given in Table 2.

**Table 2:** Descriptive Statistics for the Control Component

<i>Expressions</i>	<i>Groups</i>	<i>N</i>	<i>Mean Rank</i>	<i>Total Rank</i>	<i>M-Whitney U</i>	<i>P</i>
In order to achieve the internal control objectives, an effective coordination should be established between the units.	Dependent	175	267,70	28376,50	15984,50	<b>,002</b>
	Independent	297	226,79	82779,50		
Clear and clear determination of the duties, authorities and responsibilities of the employees should be constantly updated.	Dependent	175	270,89	28714,00	15647,00	<b>,001</b>
	Independent	297	225,87	82442,00		
Ethical rules should be established within the enterprise and compliance with these rules should be ensured in all activities.	Dependent	175	268,17	28425,50	15935,50	<b>,002</b>
	Independent	297	226,66	82730,50		
Internal control should be owned and supported by business managers and staff.	Dependent	175	262,09	27782,00	16579,00	<b>,012</b>
	Independent	297	228,42	83374,00		
The organization chart of the business and its units should be prepared and the functional distribution of duties related to it should be done.	Dependent	175	262,05	27777,50	16583,50	<b>,012</b>
	Independent	297	228,43	83378,50		
Measures should be taken to evaluate and improve the performance of employees.	Dependent	175	264,14	27999,00	16362,00	<b>,007</b>
	Independent	297	227,83	83157,00		
Employee satisfaction should be measured and evaluated regularly.	Dependent	175	262,50	27825,50	16535,50	<b>,011</b>
	Independent	297	228,30	83330,50		
Professional competence should be given importance and the most suitable personnel should be selected for each task.	Dependent	175	260,59	27622,50	16738,50	<b>,018</b>
	Independent	297	228,86	83533,50		
Appropriate orientation training should be given to the newly employed personnel.	Dependent	175	268,96	28510,00	15851,00	<b>,002</b>
	Independent	297	226,43	82646,00		
<b>Control Component</b>	Dependent	175	258,62	34137,50	19388,50	<b>,011</b>
	Independent	297	227,19	77018,50		

When Table 2 is examined, there is a statistically significant difference between the averages of independent professionals and dependent professionals in all expressions related to the control environment, one of the components of internal control, at a



significance level of 0.05. Since the ratio of the values stated in the mean rank is higher than the rate of the independent profession members, it has been seen that the dependent profession members give more importance to the answers given by the independent profession members compared to the independent profession members.

## 5.2. Conclusions on Risk Evaluation

Six statements prepared according to a 5-point Likert scale were asked in order to determine the roles or the importance of the activities related to the risk assessment component when the internal control was established in the enterprises. The results of the analysis regarding the answers obtained are given in Table 3.

**Table 3:** Descriptive Statistics for the Risk Assessment Component

<i>Expressions</i>	<i>Groups</i>	<i>N</i>	<i>Mean Rank</i>	<i>Total Rank</i>	<i>M-Whitney U</i>	<i>P</i>
Risk assessment should be made on the basis of departments within the enterprise.	Dependent	175	265,49	28141,50	16219,50	<b>,004</b>
	Independent	297	227,44	83014,50		
A valid risk appetite (acceptable risk level) for the business should be established	Dependent	175	257,42	27286,00	17075,00	<b>,040</b>
	Independent	297	229,78	83870,00		
It should create plans and programs that include the resources needed to determine the objectives of the activities of the enterprises and to realize them.	Dependent	175	259,76	27534,50	16826,50	<b>,022</b>
	Independent	297	229,10	83621,50		
It is necessary to identify, evaluate and determine the measures to be taken, internal and external risks that may prevent the realization of business goals and objectives by systematically analyzing	Dependent	175	265,20	28111,50	16249,50	<b>,005</b>
	Independent	297	227,52	83044,50		
The company must systematically identify risks to its goals and objectives every year.	Dependent	175	250,67	26571,50	17789,50	<b>,047</b>
	Independent	297	231,74	84584,50		
Employees of the business should be informed in advance of the risks that may interrupt their work.	Dependent	175	253,47	26868,00	17493,00	<b>,090</b>
	Independent	297	230,93	84288,00		
<b>Risk Assessment Component</b>	Dependent	175	253,51	33463,00	20063,00	<b>,049</b>
	Independent	297	229,18	77693,00		



When Table 3 is examined, there is a statistically significant difference between the averages of independent professionals and dependent professionals in all statements about the risk assessment component, one of the components of internal control, at a significance level of 0.05. Since the ratio of the values stated in the mean rank is higher than the rate of the independent profession members, it has been seen that the dependent profession members give more importance to the answers given by the independent profession members compared to the independent profession members. It has been determined that there is no statistically significant relationship between the statements related to the risk assessment component, "The employees of the enterprise should be informed about the risks that may interrupt their work" and the averages of the dependent and self-employed professionals.

### 5.3. Consequences of Control Activities

Seven statements prepared according to a 5-point Likert scale were directed to the professionals participating in the research in order to determine the degree of importance of the role they take on control activities while establishing internal control systems in enterprises. The analysis results obtained in this direction are given in Table 4.

**Table 4:** Descriptive Statistics for the Control Activities Component

<i>Expressions</i>	<i>Groups</i>	<i>N</i>	<i>Mean Rank</i>	<i>Total Rank</i>	<i>M-Whitney U</i>	<i>P</i>
Written standards should be established for each process and unit based on the analysis of business processes.	Dependent	175	250,97	26602,50	17758,50	<b>0,147</b>
	Independent	297	231,65	84553,50		
Controls should be developed to prevent loss of records and assets (such as physical controls and segregation of duties...)	Dependent	175	267,25	28328,50	16032,50	<b>0,002</b>
	Independent	297	226,92	82827,50		
A system should be established to ensure that the transaction is approved separately by the performer and the controller.	Dependent	175	271,27	28754,50	15606,50	<b>0,001</b>
	Independent	297	225,76	82401,50		
It should be ensured that changes in legal regulations are transferred to internal control in a timely and complete manner.	Dependent	175	263,52	27933,50	16427,50	<b>0,008</b>
	Independent	297	228,01	83222,50		
Mechanisms should be established to authorize data and information entry and access to the information system, and to prevent, detect and correct errors and	Dependent	175	243,02	25760,50	18600,50	<b>0,503</b>
	Independent	297	233,96	85395,50		

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frauds.							
The tasks of approving, implementing, recording and controlling each activity or financial decision and transaction should be assigned to different individuals.	Dependent	175	251,92	26704,00			
	Independent	297	231,38	84452,00	17657,00	<b>0,125</b>	
The procedures for leaving the staff should be determined in detail.	Dependent	175	251,92	25200,00			
	Independent	297	231,38	83680,00	18108,50	<b>0,185</b>	
<b>Control Activities Component</b>	Dependent	175	242,65	32029,50			
	Independent	297	233,41	79126,50	21496,50	<b>,450</b>	

When Table 4 is examined, among the statements asked about the subject at a significance level of 0.05 to the respondents, "Controls that prevent the loss of records and assets should be developed (such as physical controls and segregation of duties...), A system should be established that ensures separate approval by the operator and the controller, and the changes in legal regulations. It should be ensured that it is transferred to the internal control in a timely and complete manner". Statistically significant differences were determined with the response averages of the dependent and independent accounting professionals to the control activities component. Since the ratio of the values stated in the mean rank is higher than the rate of the independent profession members, it has been seen that the dependent profession members give more importance to the answers given by the independent profession members compared to the independent profession members. It has been determined that there is no statistically significant relationship between 4 of the statements asked to the participants regarding the control activity component and the answer averages of the participants.

### 5.5. Information and Communication Results

Six statements prepared according to a 5-point Likert scale were directed in order to determine the importance of the role of the participants in the information and communication activities while establishing the internal control. Table 5 shows the analysis results of the answers obtained.

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**Table 5:** Descriptive Statistics for Information and Communication Component

<i>Expressions</i>	<i>Groups</i>	<i>N</i>	<i>Mean Rank</i>	<i>Total Rank</i>	<i>M-Whitney U</i>	<i>P</i>
Information systems should be developed to ensure that the data needed in the execution of the activities are provided up-to-date and accurately.	Dependent	175	268,69	28481,00	15880,00	<b>,002</b>
	Independent	297	226,51	82675,00		
Controls regarding the accuracy of data flow between independent systems should be developed.	Dependent	175	264,03	27987,50	16373,50	<b>,006</b>
	Independent	297	227,86	83168,50		
Other information on the performance program and the implementation of the budget and the use of resources should be available in a timely manner.	Dependent	175	253,02	26820,00	17541,00	<b>,098</b>
	Independent	297	231,06	84336,00		
A recording and filing system should be established, recorded and archived, including incoming and outgoing documents and internal communication, including electronic media.	Dependent	175	261,91	27762,50	16598,50	<b>,012</b>
	Independent	297	228,48	83393,50		
The registration and filing system should ensure the security and protection of personal data.	Dependent	175	259,05	27459,50	16901,50	<b>,025</b>
	Independent	297	229,31	83696,50		
Financial statements should contain sufficient, accurate, consistent and up-to-date information for financial evaluation.	Dependent	175	261,86	27757,00	16604,00	<b>,012</b>
	Independent	297	228,49	83399,00		
<b>Information and Communication Component</b>	Dependent	175	252,92	33385,50	20140,50	<b>,055</b>
	Independent	297	229,41	77770,50		

When Table 5 is examined, there is a statistically significant difference between the averages of independent professionals and dependent professionals in all statements about the information and communication component, one of the components of internal control, at a significance level of 0.05. Since the ratio of the values stated in the mean rank is higher than the rate of the independent profession members, it has been seen that the dependent profession members give more importance to the answers given by the independent profession members compared to the independent profession members. It has been determined that there is no statistically significant relationship between the statements related to the information and communication component,





"Other information regarding the implementation of the performance program and the budget, and the use of resources should be accessed in a timely manner" and the averages of the dependent and self-employed professionals.

## 5.6. Results of Monitoring Activities

Six statements prepared according to a 5-point Likert scale were directed to the professionals participating in the research in order to determine the degree of importance of the role they take on monitoring activities, one of the internal control components. Table 6 shows the analysis results of the answers obtained.

**Table 6:** Descriptive Statistics for the Monitoring Component

<i>Expressions</i>	<i>Groups</i>	<i>N</i>	<i>Mean Rank</i>	<i>Total Rank</i>	<i>M-Whitney U</i>	<i>P</i>
It should be ensured that the effectiveness of internal control is continuously evaluated by management,	Dependent	175	259,06	27460,00	16901,00	<b>,026</b>
	Independent	297	229,30	83696,00		
Internal control should be constantly monitored and its deficiencies identified.	Dependent	175	254,69	26997,00	17364,00	<b>,072</b>
	Independent	297	230,57	84159,00		
Defects in internal control should be reported to a higher supervisor by the relevant personnel.	Dependent	175	250,80	26584,50	17776,50	<b>,154</b>
	Independent	297	231,70	84571,50		
As a result of the evaluation of internal control, the measures to be taken should be determined and implemented within the framework of an action plan.	Dependent	175	266,36	28234,00	16127,00	<b>,003</b>
	Independent	297	227,18	82922,00		
Mechanisms should be established for business managers at all levels to monitor the outcome of assigned tasks.	Dependent	175	262,79	27856,00	16505,00	<b>,010</b>
	Independent	297	228,22	83300,00		
Establishing an internal audit unit to monitor internal control.	Dependent	175	240,12	26000,00	17004,00	<b>,098</b>
	Independent	297	252,87	83984,00		
<b>Monitoring Component</b>	Dependent	175	248,88	32852,50	20673,50	<b>,147</b>
	Independent	297	230,98	78303,50		

When the findings in Table 6 are examined, it is seen that since the ratio of the values stated in the mean ranks is higher than the ratio of the members of the independent professions, it is seen that the members of the dependent profession attach more importance to the answers given by the members of the independent professions than the members of the independent professions. On the other hand, at a significance level



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of 0.05, in the statements "The effectiveness of internal control should be continuously evaluated by the management, the measures to be taken as a result of the evaluation of internal control should be determined and implemented within the framework of an action plan, and mechanisms should be established for business managers at all levels to monitor the results of their assigned tasks". A statistically significant difference was found between the averages of the dependent professionals and the members of the dependent profession.

## 6. CONCLUSION

Today, the developing and changing competitive environment makes it necessary for businesses to keep up with this development and change. It is especially important for businesses to strengthen their capital structures by renewing themselves, to protect business assets and to prevent possible errors and frauds. In this respect, it is very important for businesses to have an effective internal control system in order to present accurate and reliable financial information. An effective internal control system will be possible with the sound application of internal control components.

In this direction, the aim of the study is to determine the role of professional accountants in ensuring the effectiveness of the internal control system. In the study, it was also tried to determine the differences in the perspectives of dependent and independent accounting professionals on internal control activities. For this purpose, a face-to-face survey was conducted with the accounting professionals operating in Diyarbakır. There are 34 statements about internal control components in the questionnaire form. Mann-Whitney U test was applied because the obtained data did not show normal distribution.

As a result of the study, a statistically significant difference was determined between the independent professionals and the dependent professionals in the control environment and risk assessment activities, which are components of internal control. When these two components are taken into consideration, they stated that the dependent professional accountants can take on more duties and responsibilities than independent accounting professionals. However, no statistically significant relationship was found between the independent and dependent accounting professionals in control activities, information and communication, and monitoring activities, which are among the components of internal control.



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Considering the overall study, when the expressions in all components of internal control are taken into account, it has been determined that the independent accounting professionals want to take an active role and responsibility in the creation of internal control compared to the independent accounting professionals. From this point of view, it is seen that professional accountants working more actively in the effectiveness and efficiency of internal control. In addition, it would be correct to see it as a result of dependent professional accountants taking ownership of the business they work for. In short, a sense of belonging comes to the fore. Therefore, businesses need to provide financial and moral support to professional accountants working as dependents. Particular attention should be paid to the professional education of professional accountants working in dependency, and support should be given to ensure the effectiveness of internal control. Because they are at the center of accurate and reliable information, professional accountants have a very strategic role.

It was observed that similar results were found in the study of Tanç and Kara (2016), which was used in the creation of the questionnaire form of this study. This research is limited to Diyarbakir province. In future studies, large-scale studies can be conducted with different provinces and more participants.

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## Üniversite Öğrencilerinin Covid-19 Pandemi Sürecinde Yapmış Oldukları Sosyal ve Fiziksel Aktivitelerin Belirlenmesi\*

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### Özet

Öğretmenler toplumda sosyal yönleri güçlü toplumlara eğitim ile yön veren örnek alınan bireylerdir. Öğretmenlerin sosyal yönlerini beslemeleri ve geliştirmeleri öğretmeni örnek kişilik olarak gören yeni nesillerin de düşünme becerilerini, sosyal kimliklerini, eleştirme ve analitik düşüncelerini, iletişim yeteneklerini, kendini tanıma, ne istediğini bilme, kendi kararlarını alıp buna uygun sorumluluğu üstlenebilen bireylerin yetişmesinde ve kendini gerçekleştirme basamaklarında ilerleme yolunda devamlılık sağlamaları açısından oldukça önemlidir. Öğretmenlerin fiziksel aktivite düzeylerinin de hayatlarında bulunması yine yetiştirmesi beklenen nesle bu bilinci aşılacak böylece hem fikri hem de vücudu dinç bireyler yetişecek olup ruh ve vücut bütünlüğü olan sağlıklı bireyler yeni nesli oluşturacaktır. Covid-19' un etkisiyle üniversitede öğrenim gören bireylerde zaten az olan fiziksel aktivite yoğunluklarının daha da azaldığını eğitimin uzaktan olması gibi sebepleri de beraberinde getirerek sedanter yaşam tarzını arttırdığını gözler önüne sermiştir. Bu çalışmanın amacı öğretmen adaylarının dünyada özellikle 2020 ve 2021 yıllarında etkisini gösteren Covid-19 pandemi sürecinde günlük hayatlarındaki sosyal ve fiziksel aktivite türlerini belirlemeyi amaçlamaktadır. Bu çalışmada nitel araştırma modeli olan olgubilim araştırma deseni seçilmiştir. Bu çalışmanın çalışma grubunu Çanakkale Onsekiz Mart Üniversitesi Sınıf Öğretmenliği ve Okul Öncesi Öğretmenliği bölümünde öğrenim gören 1.,2.,3. ve 4. sınıf öğrencileri oluşturmaktadır. Çalışma grubunun belirlenmesinde kolay ulaşılabilir durum örnekleme çeşidi kullanılmıştır. Çalışmada veri toplama aracı olarak öğretmen adaylarıyla görüşmeler gerçekleştirilmiştir. Araştırmada elde edilen veriler içerik analizi yöntemi ile analiz edilmiştir. Öğretmen adaylarının verdiği cevaplar incelendiğinde öğretmen adaylarının Covid-19 pandemi sürecinde yapmış oldukları etkinlikleri ve gittikleri kursları genellikle bırakmış olduklarını evde telafisi yapılabilen veya online olarak devam edilebilen etkinlikleri sürdürmeye çalıştıkları görülmüştür. Bu sonuçlara yönelik eğitim fakültelerinde öğretmen adaylarının sosyal ve fiziksel aktivite seviyelerinin artması ve daha çok aktiviteye ulaşım sağlayabilmeleri için seçmeli ders niteliğinde çeşitli aktiviteleri yapabilecekleri dersler oluşturulması, üniversite bünyesindeki öğrenci toplulukları ile sosyal ve fiziksel aktivitelerin yaygınlaştırılması önerilmektedir.

**Anahtar Kelimeler:** Öğretmen adayı, sosyal aktivite, fiziksel aktivite, Covid -19, pandemi



\* Bu çalışma "Üniversite Öğrencilerinin Covid-19 Pandemi Sürecinde Yapmış Oldukları Sosyal Aktivitelerin Belirlenmesi" isimli TÜBİTAK 2209-A Üniversite Öğrencileri Araştırma Projeleri Destekleme Programı tarafından 1919B012101423 numaralı proje kapsamında desteklenerek gerçekleştirilmiştir.

## Determination of Social and Physical Activities of University Students During the Covid-19 Pandemic Process

### Abstract

Teachers are exemplary individuals who shape societies with strong social aspects through education. Teachers nurture and develop their social aspects, and the new generations, who see the teacher as an exemplary personality, also have their thinking skills, social identities, critical and analytical thinking, communication skills, self-knowledge, knowing what they want, raising individuals who can take their own decisions and take responsibility accordingly, and are on the way to progress in the steps of self-realization. It is very important for their continuity. The physical activity levels of the teachers will also instill this awareness in the generation that is expected to raise, so that individuals who are both mentally and physically vigorous will be raised, and healthy individuals with soul and body integrity will form the new generation. With the effect of Covid-19, it has been revealed that the physical activity intensities, which are already low, decrease even more in individuals studying at university, and it increases the sedentary lifestyle by bringing reasons such as distance education. The aim of this study is to determine the types of social and physical activities in the daily life of pre-service teachers during the Covid-19 pandemic, which has an impact in the world, especially in 2020 and 2021. In this study, the phenomenology research design, which is a qualitative research model, was chosen. The study group of this research consists of 1., 2., 3. and 4th grade students. Easily accessible case sampling type was used to determine the study group. In the study, interviews were conducted with pre-service teachers as a data collection tool. The data obtained in the research were analyzed with the content analysis method. When the answers given by the pre-service teachers were examined, it was seen that the pre-service teachers generally left the activities and courses they attended during the Covid-19 pandemic, and they tried to continue the activities that could be made at home or continued online. For these results, it is recommended to create courses where teacher candidates can do various activities as elective courses in order to increase the social and physical activity levels of teacher candidates in education faculties, and to expand social and physical activities with student groups within the university.

**Keywords:** Teacher candidate, social activity, physical activity, Covid -19, pandemic

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## GİRİŞ

İnsanlık tarihte var olduğundan beri hayatta kalabilmek için insanlar çeşitli eylemlerde bulunmuşlardır. Yaşam ile hep bir mücadele içinde olmuş olup önlerine çıkan engelleri aşabilmek adına içinde yaşadıkları toplum ile çareler aramışlar ve mücadele etmişlerdir. Bu engeller savaş, açlık, deprem veya sel vb. doğal afetler olabileceği gibi en zor aşılana ise salgın hastalıklar olmuştur. İnsanlık tarihinde bilinen en önemli salgın ise veba salgınıdır. Veba farklı medeniyetlerde farklı zamanlarda birçok insanın canına mal olmuş bir hastalıktır. Veba salgını sırasında hem bu hastalığa çare aranmış bu sırada hem de insanlar hayatlarına devam etmek zorunda kalmışlardır. Tıpkı 2019'dan beri ülkemizi ve tüm dünyayı etkisi altına almış olan Covid-19 pandemi sürecinde hastalığın çaresi bulunana kadar ve bulunduktan sonra da hayatlarımıza etkisi olduğu gibi.

Çin'in Wuhan şehrinden başlayarak tüm dünyayı etkileyen SARS-COV-2 virüsü Aralık 2019'da ortaya çıkmış bir salgındır (Dikmen vd., 2020). Hükümet ülkemizde Covid-19 görüldükten sonra salgının toplum için tehdit oluşturmaması sağlık açısından olumsuzluklarını azaltmak adına önlemler almıştır (Wiederhold, 2021). Bunlardan bazıları okullardaki eğitimde uzaktan eğitime geçilmesi, sokağa çıkma yasağı yiyecek içecek hizmeti veren yerlerin paket servise geçmesi vb. önlemler alınmıştır. Bu önlemler insan yaşamında ciddi değişikliklere sebep olmuş ve olmaya da devam etmektedir. Alınan önlemler; okulların uzaktan eğitime geçişi, kısıtlamalar ile sokağa çıkma yasakları, şehirler arası seyahat kısıtlaması, maske, mesafe, hijyen kuralları ile yeme- içme hizmet yerlerinin paket servise ve hatta temassız teslimata geçmesi, insanların fiziksel hareket alanlarını kısıtlamış ve sosyal aktivite düzeylerini de aynı oranda azaltmıştır. Kişisel kutlamalar, piknik ve doğa gezmeleri, spor aktiviteleri, kutlamalar, sosyal kulüpler gibi etkinlikler sosyal aktivitelerdir. Bu aktiviteler keyifli ortamlar olup iletişimin de bağlamda bulunduğu ortamlardır. Günümüzde bu aktivitelerin pozitif yönde işlevleri olduğu bilinmektedir. Bu işlevler gündelik sorunlar ile mücadele ve ikili ilişkilerdeki düşmanca tavrı en aza indirmede sosyal aktivitelerin önemini ortaya çıkarmaktadır. Alan yazında sosyal aktivitelerin kişilik gelişiminde, sağlık sorunlarını en aza indirgemedi ve üreten bireyler olmada olumlu etkileri olduğu belirtilmiştir (Akgeyik, 2007).



Fiziksel aktivite; vücudun yaşamsal faaliyetleri dışında enerji harcaması gerektiren tüm etkinlikler ve bununla beraber kas sisteminin kasılmasıdır. Bir düzen dahilinde yapılan fiziksel aktiviteler egzersiz olarak adlandırılır bu aktiviteler fiziksel uygunluğun unsurlarının ilerlemesinde plan dahilinde tekrar ve düzene bağlı yapılan etkinlikler bütünüdür. Bu aktivitelerin insan sağlığına pozitif yönde etkileri olduğu ve hayatımızda az yer verdiğimizde sağlık sorunlarının da bu paralelde ilerlediği görüşleri vardır. Özellikle genç ve çocuk bireylerde vücut kompozisyonu, vücudun fizyolojik etkinlikleri, iskelet sistemindeki gelişim ile psikososyal sağlık düzeyi bu aktivitelerin devamlılığı sağlandığında olumlu etkilerle ilerlediği gözlemlenmiştir (de Miranda, 2020; Warburton vd., 2006). Covid-19 etkisiyle üniversitede öğrenim gören bireylerde fiziksel aktivite yoğunluklarının daha da azaldığını eğitimin uzaktan olması gibi sebepleri de beraberinde getirerek sedanter yaşam tarzını arttırdığını gözler önüne sermiştir. Bu durum bireylerde olumsuz bir etki bırakarak ve yaşam kalitesini azaltmaktadır (Bulguroğlu, vd., 2021).

Yaşamsal fonksiyonlarımızın devamlılığı için bizler beslenme, barınma vb. temel ihtiyaçlarımızı gidermeliyiz fakat bununla beraber aynı paralelde fiziksel ve psikolojik olarak gelişimimiz ve toplum içerisinde günlük yaşama devam edebilmemiz adına bedensel faaliyetlerimizi arttırıp daha çok hareket etmeliyiz. Bu bütünlüğü sağlarken sosyal aktivite olarak görülen sportif faaliyetlere katılım, bilişsel ve duyuşsal yetkinliği olumlu yönde ilerleterek bireylerin akademik başarısını da arttırmaktadır.

Alan yazında yapılan çalışmalarda karantina sürecinde evde geçirilen sürenin artmasıyla bireyler aktif olmayan bir yaşam sürmüş bununla beraber bireylerde düzensiz bir fiziksel aktivite seviyesi olduğu belirlenmiştir. Bu sonuç doğrultusunda değişik aktivite seviyesinin yaşamı kalitesel olarak ve psikolojik olarak etkilediği sonucuna ulaşılmıştır (Alesi, 2021; Ciddi ve Yazgan, 2020). Benzer şekilde yapılan başka bir araştırmalarda salgın döneminde üniversite okuyan bireylerde fiziksel aktivite seviyelerinin düşüşü görülmüş olup düzenli fiziksel aktivitelerine devam eden bireylerin ise bu seviyede değişim sağlayarak süreç içinde uyum sağladıkları sonucuna ulaşılmıştır (Ercan ve Keklicek, 2020).



### **1.1. Araştırmanın Amacı**

Literatür incelendiğinde öğrencilerin bu süreçte yapmış oldukları aktiviteler fiziksel aktivite düzeyinde incelenmiş olduğu görülmüş; sanatsal faaliyet, yeni bir dil öğrenme gibi sosyal aktivite ortamlarında gerçekleşen etkinlikler bazında araştırmalara yer verilmediği görülmüştür. Bu çalışmanın amacı öğretmen adaylarının dünyada etkisini gösteren Covid-19 pandemi sürecinde günlük hayatlarındaki sosyal aktivitelerine ve devam ettikleri halihazırdaki kurslara karşı tavırlarını belirlemeyi amaçlamaktadır. Tüm bunlar göz önünde bulundurulduğunda bu araştırma için problem cümlesi “Üniversite öğrencilerinin Covid-19 pandemi sürecinde yapmış oldukları sosyal ve fiziksel aktiviteler nelerdir? olarak belirlenmiştir.

Sosyal bir varlık olan insanın normal hayat akışı içerisinde insanlarla iç içe ve yüz yüze olabilme fırsatı bulduğu kendini ifade etme, özgüven, bir yeteneğini geliştirebilme fırsatları taşıdığı etkinliklerden mahrum kaldığında kendine alternatifler bulmada ne kadar başarılı olduğu bu süreçte ne türlü aktiviteler yaptığı, nelere yöneldiği konusunda bu çalışma bir gösterge niteliği taşıyacaktır.

## **1. YÖNTEM**

### **2.1. Araştırmanın Modeli**

Bu araştırmada model olarak nitel araştırma modeli kullanılmıştır. Nitel araştırma modeli doğru ve genel bir durum ortaya koymak için gözlem, görüşme ve doküman analizi gibi nitel veri toplama yöntemlerini kullanır. Araştırma deseni olarak fenomenoloji/olgubilim araştırma deseni bağlamında yürütülmüştür. Fenomenoloji, her gün defalarca karşılaştığımız, bizim için yeni olmayan, ancak bütün olarak anlayamadığımız ve araştırılmaya uygun bir temel oluşturabilecek olguları araştırmayı amaçlayan araştırmalarda kullanılmaktadır (Yıldırım ve Şimşek, 2011).

### **1.2. Katılımcılar**

Bu araştırmanın çalışma evrenini Çanakkale Onsekiz Mart Üniversitesi Sınıf Öğretmenliği ve Okul Öncesi Öğretmenliği bölümü 1- 2- 3 ve 4. sınıf öğrencileri oluşturmaktadır. Çalışma grubunun belirlenmesinde örnekleme çeşitlerinden kolay ulaşılabilir durum örnekleme çeşidi kullanılmıştır. Kolay ulaşılabilir durum örnekleme ile araştırmada öğretmen adaylarına ulaşmada pratiklik sağlamıştır.



**Tablo 1. Örneklemin Büyüklüğü**

Bölümler	Kadın	Erkek	Toplam
Sınıf Öğretmenliği	96	17	113
Okul Öncesi Öğretmenliği	64	18	82
Toplam	160	35	195

Tablo 1’de görüldüğü üzere araştırmanın örneklemini 160 kadın 35 erkek olmak üzere toplam 195 öğretmen adayı oluşturmaktadır. Öğretmen adayları bölüm bazlı incelendiğinde Temel Eğitim Bölümünde yer alan sınıf öğretmenliği ve okul öncesi öğretmenliği olarak 2 başlık altında toplanmıştır. Araştırmaya 113 sınıf öğretmeni adayı ve 82 okul öncesi öğretmen adayı katılmıştır.

### **2.3. Veri Toplama Aracı**

Bu araştırmada Çanakkale Onsekiz Mart Üniversitesi Sınıf Öğretmenliği ve Okul Öncesi Öğretmenliği Bölümü 1-2-3 ve 4. sınıf öğrencilerinden veri toplama aracı olarak nitel veri toplama araçlarından görüşme kullanılmıştır. Öğretmen adaylarıyla görüşmeler gönüllülük esasına dayalı olarak gerçekleştirilmiştir. Görüşme sürecinde öğretmen adaylarına yönlendirme yapılmamış, katılımcılara araştırmanın amacına uygun şekilde açıklamalar yapılarak görüşlerini ifade etmeleri sağlanmıştır.

### **2.4. Verilerin Analizi**

Bu araştırmada verilerin analizi araştırmacı tarafından nitel veri analizinin bir yöntemi olan içerik analiz yöntemi ile yapılmıştır. Araştırmada katılımcıların cevaplandığı görüşme soruları kodlanarak analiz edilmiştir (Yıldırım ve Şimşek 2011). Çalışmanın amacı doğrultusunda öğretmen adaylarına yapılan anketlerde verilerin yüzde ve frekans değerleri bulunup tablolaştırılmıştır. Nitel araştırmalarda araştırma doğasına uygun olarak gerçekleştirilmesi gereken inandırıcı olma, aktarılabilirlik ve doğrulanabilirlik gibi birtakım ölçütler vardır (Lincoln ve Guba, 2000).

Araştırmanın güvenilirliği ve geçerliliği bu bağlamlarda gerçekleştirilmeye çalışılmıştır. Araştırmada araştırmacıların kodlamadaki kararlılığı Güvenirlik konusunda Miles ve Huberman’a





(2015) formülüne göre hesaplanmış ve %89 uyum saptanmıştır.

## 2. Bulgular

Öğretmen adaylarıyla yapılan görüşmelerde adayların vermiş olduğu cevaplar temalara uygun şekilde kodlanmış ve verilen cevaplar sınıf öğretmeni adayları ve okul öncesi öğretmen adayları olarak ayrı ayrı tablolaştırılmıştır. Sınıf öğretmeni adaylarının ilgi alanları hakkındaki görüşleri Tablo 2’de verilmiştir.

**Tablo 2. Sınıf Öğretmeni Adaylarının İlgi Alanları**

İlgi Alanları	Sınıf Düzeyi				Cinsiyet	
	1.sınıf	2.sınıf	3.sınıf	4.sınıf	Kadın	Erkek
Ankete katılan kişi sayısı	20	23	13	57	96	17
Masa tenisi	2	5	2	5	6	8
Yoga	1	3	2	4	10	-
Yüzme	1	3	4	7	11	4
Basketbol	-	3	2	4	4	4
Futbol	2	4	2	7	2	13
Voleybol	1	5	5	11	19	3
Ağırlık çalışması	3	5	1	7	10	6
Ev içi egzersizler	9	9	2	15	31	4
Doğa yürüyüşü	9	7	7	16	30	9
Pilates	2	1	2	2	7	-
Serbest yürüyüş	10	11	7	21	40	9
Koşu	-	-	1	4	1	4
Fitness	4	4	1	8	11	6
Dans	2	3	1	12	18	-
Tenis	-	1	1	6	5	2
10.000 adım tamamlama	5	13	4	18	32	8
Bisiklet	-	-	2	8	9	1
Meditasyon	2	3	2	5	12	-
Şarkı söyleme	2	5	5	15	20	7
Bir müzik aleti çalma	-	2	2	9	8	6
Mandala boyama	2	7	2	9	17	3
Resim çizme	1	2	2	10	13	2
Yağlı boya tablosu	1	1	3	3	5	3



Ahşap boyama	-	2	1	3	6	-
Bilgisayar temelli oyunlar	2	8	3	8	9	11
Tiyatro	3	5	3	10	14	4
Sinema	9	14	3	19	34	11
Dil öğrenme	3	6	-	6	12	3
Kamp	3	5	1	7	10	6
Yemek pişirme/ yeni lezzetler deneme	10	11	4	23	42	5
Sosyal yardımlaşma/ gönüllülük faaliyetleri	2	4	2	12	13	7
İşaretlenen seçenek toplamı (N)	91	152	79	294	461	149

Tablo 2’de sınıf öğretmeni adaylarının ilgi alanlarına yönelik yanıtları frekansıyla verilmiştir. Sınıf öğretmenliğinden 4.sınıf düzeyi 50 kadın, 7 erkek toplamda 57 kişi; 3.sınıf düzeyi 11 kadın, 2 erkek toplamda 13 kişi; 2.sınıf düzeyi 18 kadın, 5 erkek toplamda 23 kişi; 1.sınıf düzeyi 17 kadın, 3 erkek toplamda 20 kişi olmak üzere toplam 96 kadın, 17 erkek 113 öğretmen adayı yanıtlamıştır.

Sınıf düzeylerinde öğretmen adaylarının verdiği cevaplar dikkate alındığında;

*1.sınıf düzeyinde serbest yürüyüş (f:10), yemek pişirme (f:10), ev içi egzersizler (f:9) ilgi alanları diğer maddelere göre daha çok tercih edilmiş olup yoga(f:1), voleybol(f:1), resim çizme(f:1) ilgi alanları en az işaretlenen maddeler arasındadır.*

*2.sınıf düzeyinde serbest yürüyüş (f:11), sinema (f:14), 10.000 adım tamamlama (f:13) ilgi alanları diğer maddelere göre daha çok tercih edilmiş olup pilates (f:1), resim çizme (f:2), yağlı boya (f:1) ilgi alanları en az işaretlenen maddeler arasındadır.*

*3.sınıf düzeyinde serbest yürüyüş (f:7), voleybol (f:5), yemek pişirme (f:4) ilgi alanları diğer maddelere göre en çok tercih edilen maddeler arasında olup koşu (f:1), ahşap boyama (f:1), meditasyon (f:2) ilgi alanları en az tercih edilen seçenekler olmuştur.*

*4.sınıf düzeyinde 10.000 adım tamamlama (f:18), sinema (f:19), yemek pişirme/ Yeni lezzetler deneme (f:23), en çok işaretlenen ilgi alanları olup pilates (f:2), yoga (f:4), ahşap boyama (f:3) tercih edilmeyen ilgi alanları arasındadır.*

Sınıf öğretmeni adaylarının 1, 2 ve 3. sınıf düzeylerinde en çok tercih ettikleri seçenekler arasında serbest yürüyüş, 1., 3. ve 4.sınıf düzeylerinde en çok tercih edilen ilgi alanları arasında ise yemek



pişirme/ yeni lezzetler deneme yer almaktadır. Bununla birlikte sınıf düzeylerinin cevapları arasında benzerlik gösterdiği de görülmektedir. 10.000 adım tamamlama seçeneği 2. ve 4. sınıf düzeylerinde en çok tercih edilen ilgi alanları arasında olup sınıf düzeyleri arasında benzerlik göstermiştir. Araştırmada görüldüğü üzere 3. sınıf düzeyinde voleybol en çok tercih edilen ilgi alanlarındayken; 1. Sınıf düzeyinde en az tercih edilen ilgi alanları seçenekleri arasında olmuştur. 1. ve 4. sınıf düzeylerinde yoga en az tercih edilen ilgi alanları seçenekleri arasında olmasıyla sınıf düzeylerinin cevapları benzerlik göstermiştir. Sinema ilgi alanı seçeneği 2. ve 4.sınıf düzeylerinde en çok tercih edilenler arasında olması bakımından benzerlik göstermiştir.

Okul öncesi öğretmen adaylarının ilgi alanları hakkındaki görüşleri Tablo 3'te verilmiştir.

**Tablo 3. Okul Öncesi Öğretmen Adaylarının İlgi Alanları**

İlgi Alanları	Sınıf Düzeyi				Cinsiyet	
	1.sınıf	2.sınıf	3.sınıf	4.sınıf	Kadın	Erkek
Ankete katılan kişi sayısı	25	17	23	17	64	18
Masa tenisi	3	2	2	1	3	5
Yoga	2	3	6	4	15	-
Yüzme	5	5	5	3	15	3
Basketbol	5	3	3	1	6	6
Futbol	7	2	3	2	1	13
Voleybol	5	4	4	2	10	5
Ağırlık çalışması	6	6	7	1	13	7
Ev içi egzersizler	6	8	9	4	27	-
Doğa yürüyüşü	10	8	7	6	24	7
Pilates	-	2	2	2	6	-
Serbest yürüyüş	11	8	9	11	31	7
Koşu	2	2	2	-	2	4
Fitness	4	5	6	1	11	5
Dans	1	1	2	2	6	-
Tenis	1	-	-	-	1	-
10.000 adım tamamlama	8	6	5	7	22	4
Bisiklet	7	2	3	5	10	6
Meditasyon	4	4	-	3	11	-
Şarkı söyleme	8	2	3	3	15	1
Bir müzik aleti çalma	2	1	2	3	5	3



Mandala boyama	-	2	-	3	5	-
Resim çizme	4	3	3	2	11	1
Yağlı boya tablosu	1	-	1	-	2	-
Ahşap boyama	2	2	2	3	9	-
Bilgisayar temelli oyunlar	5	6	4	1	6	10
Tiyatro	6	4	4	5	18	1
Sinema	9	10	10	7	28	8
Dil öğrenme	5	3	5	2	12	4
Kamp	4	1	2	2	8	1
Yemek pişirme/ yeni lezzetler deneme	14	12	12	7	39	7
Sosyal yardımlaşma/ gönüllülük faaliyetleri	7	4	5	2	10	8
İşaretlenen seçenek toplamı (N)	154	121	128	95	384	108

Tablo 3'te okul öncesi öğretmen adaylarının ilgi alanlarına yönelik yanıtları frekansıyla verilmiştir. Okul öncesi öğretmenliğinden 4.sınıf düzeyi 14 kadın, 3 erkek toplamda 17 kişi; 3.sınıf düzeyi 19 kadın, 4 erkek toplamda 23 kişi; 2.sınıf düzeyi 14 kadın, 3 erkek toplamda 17 kişi; 1.sınıf düzeyi 17 kadın, 8 erkek toplamda 25 kişi olmakla beraber 64 kadın, 18 erkek toplam 82 okul öncesi öğretmen adayı yanıtlamıştır.

Sınıf düzeylerinde öğretmen adaylarının verdiği cevaplar dikkate alındığında;

1. sınıf düzeyinde doğa yürüyüşü (f:10), serbest yürüyüş (f:11), yemek pişirme (f:14) ilgi alanları diğer maddelere göre daha çok tercih edilmiş olup dans (f:1), mandala boyama (f:0), tenis (f:1) ilgi alanları en az tercih edilip işaretlenen maddeler arasındadır.

2. sınıf düzeyinde yemek pişirme (f:12), sinema (f:10), serbest yürüyüş (f:8) ilgi alanları diğer ilgi alanları maddelerine göre daha çok tercih edilmiş olup dans (f:1), mandala boyama (f:2), tenis (f:0) ilgi alanları en az tercih olarak işaretlenen maddeler arasındadır.

3.sınıf düzeyinde yemek pişirme (f:12), sinema (f:10), ev içi egzersizler (f:9) ilgi alanları diğer maddelere göre daha çok tercih edilmiş olup tenis (f:0), yağlı boya (f:1), dans (f:0) ilgi alanları en az tercih olarak işaretlenen maddeler arasındadır.

4.sınıf düzeyinde serbest yürüyüş (f:11), yemek pişirme (f:7), sinema (f:7) ilgi alanları diğer maddelere göre daha çok tercih edilmiş olup tenis (f:0), dans (f:2), koşu (f:0) ilgi



*alanları en az tercih olarak işaretlenen maddeler arasındadır.*

Tablo 3 incelendiğinde her sınıf düzeyi için en çok tercih edilen ilgi alanlarından olan yemek pişirme ilgi alanının sınıf düzeyleri için ortak tercih edilmiş olup, 1., 2. ve 4. sınıf düzeylerinde en çok tercih edilen ilgi alanlarından serbest yürüyüş, 2., 3. ve 4.sınıf düzeyleri için sinema cevapları sınıf düzeyleri açısından benzerlik göstermiştir. 1., 2., 3. ve 4. sınıf düzeyleri için en az tercih edilen ilgi alanlarından olan tenis ve dans seçenekleri sınıf düzeyleri açısından benzerlik göstermiş olup 1.ve 2. sınıf düzeylerinde mandala boyama seçeneğinin en az işaretlenen ilgi alanlarından olması sınıf düzeyleri açısından benzerlik gösteren bir başka maddedir.

Sınıf öğretmeni adaylarının pandemi sürecinde ilgilendikleri sosyal aktivitelere ilişkin görüşleri Tablo 4'te verilmiştir.

**Tablo 4. Sınıf Öğretmeni Adaylarının Pandemi Sürecinde İlgilendiği Sosyal Aktiviteler**

Pandemi Sürecinde Yapılan Aktiviteler	Sınıf Düzeyi				Cinsiyet	
	1.sınıf	2.sınıf	3.sınıf	4.sınıf	Kadın	Erkek
Ankete katılan kişi sayısı	20	23	13	57	96	17
Masa tenisi	1	3	-	2	4	2
Yoga	1	1	1	6	9	-
Yüzme	1	4	1	6	8	4
Basketbol	3	-	-	1	2	2
Futbol	3	3	1	4	2	9
Voleybol	1	3	-	5	9	-
Ağırlık çalışması	5	6	1	4	10	6
Ev içi egzersizler	7	14	6	26	46	7
Doğa yürüyüşü	6	10	4	17	29	8
Pilates	2	-	1	4	6	1
Serbest yürüyüş	9	6	3	19	31	6
Koşu	-	-	-	2	1	1
Fitness	4	4	-	5	8	5
Dans	-	4	2	6	12	-
Tenis	-	-	-	4	4	-
10.000 adım tamamlama	5	11	1	10	21	6
Bisiklet	2	1	-	8	10	1
Meditasyon	1	3	3	6	13	-



Ses eğitimi	1	3	-	3	3	4
Yeni bir müzik aleti çalmayı deneme/ kursa katılma	2	3	2	10	13	4
Mandala boyama	1	3	-	7	11	-
Resim çizme	3	3	3	10	15	4
Yağlı boya tablosu	-	1	1	4	6	-
Ahşap boyama	1	-	2	1	4	-
Bilgisayar temelli oyunlar	5	7	3	11	15	11
Tiyatro	3	2	1	4	8	2
Sinema	6	11	2	10	21	8
Dil öğrenme	3	3	3	6	13	2
Kamp	2	2	-	4	5	3
Yemek pişirme/ yeni lezzetler deneme	5	10	7	23	39	6
Sosyal yardımlaşma/ gönüllülük faaliyetleri	3	3	-	4	7	3
İşaretlenen seçenek toplamı (N)	86	124	61	232	385	105

Tablo 4'te sınıf öğretmeni adaylarının pandemi sürecinde ilgilendikleri sosyal aktivitelere ilişkin frekanslar verilmiştir. Sınıf öğretmenliğinden 4.sınıf düzeyi 50 kadın, 7 erkek toplamda 57 kişi; 3.sınıf düzeyi 11 kadın, 2 erkek toplamda 13 kişi; 2.sınıf düzeyi 18 kadın, 5 erkek toplamda 23 kişi; 1.sınıf düzeyi 17 kadın, 3 erkek toplamda 20 kişi olmakla beraber sınıf öğretmenliği bölümünden toplam 96 kadın, 17 erkek 113 öğretmen adayı yanıtlamıştır.

Sınıf düzeylerinde öğretmen adaylarının verdiği cevaplar dikkate alındığında;

*1.sınıf düzeyinde sinema (f:6), serbest yürüyüş (f:9), ev içi egzersizler (f:7) faaliyetleri diğer faaliyetlere göre daha çok yapılmış olarak işaretlenmiş olup ahşap boyama (f:1), koşu (f:0), yoga (f:1) faaliyetleri en az işaretlenen maddeler arasındadır.*

*2.sınıf düzeyinde ev içi egzersizler (f:14), doğa yürüyüşü (f:10), sinema (f:11) diğer faaliyetlere göre daha çok tercih edilmiş olup koşu (f:0), yoga (f:1), ahşap boyama (f:0) faaliyetleri en az yapılarak işaretlenen maddeler arasında olmuştur.*

*3.sınıf düzeyinde Yemek Pişirme/ Yeni lezzetler deneme (f:7), doğa yürüyüşleri (f:4), ev içi egzersizler (f:6) faaliyetleri diğer maddelere göre en çok tercih edilen maddeler*





*arasında olup yoga(f:1), ahşap boyama (f:2), koşu (f:0) faaliyetleri en az tercih edilen seçenekler olmuştur.*

*4.sınıf düzeyinde ev içi egzersiz (f:26), doğa yürüyüşü (f:17), yemek pişirme/ Yeni lezzetler deneme (f:23), en çok işaretlenen ilgi alanları olup koşu (f:2), ses eğitimi (f:3), ahşap boyama (f:1) faaliyetleri tercih edilmeyen faaliyetler arasındadır.*

Araştırmada 1. ve 2. sınıf düzeylerinde sinema faaliyeti en çok tercih edilerek yapılan faaliyetler olması bakımından sınıf düzeyleri incelendiğinde tercih edilen faaliyetlerde benzerlik göstermiştir. Bütün sınıf düzeylerinde ev içi egzersizler en çok tercih edilen faaliyetlerden olmuş olup bununla beraber yine bütün sınıf düzeylerinde en az tercih edilerek pandemi sürecinde yapılan etkinlik koşu faaliyetlerinde olmuştur. Koşu faaliyetinin yapılması için belli bir açık hava alanı veya spor salonu gerekmekte olmasından mütevellit olabileceği için bu süreç içerisinde en az tercih edilmiş olmasının sebebi karantina süreçlerinde evlerde kalmanın zorunluluğu olmuş olabilir. Çalışmada 1., 2. ve 3. sınıf düzeylerinde doğa yürüyüşleri en çok tercih edilen faaliyetler arasında olmuş olmasıyla sınıf düzeyleri bazında benzerlik göstermiştir. İnsanların dışarıya çıkmanın yasak olmadığı belli günlerde topluluklardan uzak olarak vakit geçirebilecekleri doğal ortamlara yönelmeleri bu etkinliğin yapılmasını arttırmış olabilir. Bununla birlikte 3. ve 4. sınıf düzeylerinde yemek pişirme/ yeni lezzetler deneme faaliyeti en çok yapılan faaliyetler arasında sınıf düzeyleri incelendiğinde benzerlik göstermiştir. Ayrıca 1., 2. ve 3. sınıf düzeylerinde yoga faaliyetinin aynı oy sayısı ile en az yapılan faaliyetlerdir.

Okul öncesi öğretmen adaylarının pandemi sürecinde ilgilendikleri sosyal aktivitelere ilişkin görüşleri Tablo 5'te verilmiştir.

**Tablo 5. Okul Öncesi Öğretmen Adaylarının Pandemi Sürecinde İlgilendiği Sosyal Aktiviteler**

Pandemi Sürecinde Yapılan Aktiviteler	Sınıf Düzeyi				Cinsiyet	
	1.sınıf	2.sınıf	3.sınıf	4.sınıf	Kadın	Erkek
Ankete katılan kişi sayısı	25	17	23	17	64	18
Masa tenisi	1	1	1	-	-	3
Yoga	3	2	3	4	12	-
Yüzme	3	1	2	-	4	2



Basketbol	5	4	2	-	7	4
Futbol	5	2	1	-	-	8
Voleybol	5	2	2	-	8	1
Ağırlık çalışması	5	5	3	-	8	5
Ev içi egzersizler	9	7	13	9	36	2
Doğa yürüyüşü	11	10	9	3	24	9
Pilates	-	-	1	2	3	-
Serbest yürüyüş	13	3	11	6	27	6
Koşu	-	1	4	-	4	1
Fitness	4	4	6	-	10	4
Dans	1	3	1	2	7	-
Tenis	1	-	-	-	1	-
10.000 adım tamamlama	8	4	7	5	20	4
Bisiklet	5	4	4	-	8	5
Meditasyon	3	5	2	6	16	-
Ses eğitimi	6	2	1	1	9	1
Yeni bir müzik aleti çalmayı deneme/ kursa katılma	2	2	5	2	8	3
Mandala boyama	-	3	4	3	10	-
Resim çizme	4	5	9	1	16	3
Yağlı boya tablosu	-	-	2	-	2	-
Ahşap boyama	-	2	2	-	4	-
Bilgisayar temelli oyunlar	6	4	4	1	7	8
Tiyatro	3	4	5	1	12	1
Sinema	11	9	9	2	24	7
Dil öğrenme	3	2	7	1	10	3
Kamp	1	1	1	-	2	1
Yemek pişirme/ yeni lezzetler deneme	12	10	14	8	39	5
Sosyal yardımlaşma/ gönüllülük faaliyetleri	5	3	4	2	10	4
İşaretlenen seçenek toplamı (N)	135	105	139	55	348	90

Tablo 5'te okul öncesi öğretmeni adaylarının pandemi sürecinde ilgilendikleri sosyal aktivitelere ilişkin frekanslar verilmiştir. Okul öncesi öğretmenliğinden 4.sınıf düzeyi 14 kadın, 3 erkek toplamda 17 kişi; 3.sınıf düzeyi 19 kadın, 4 erkek toplamda 23 kişi; 2.sınıf düzeyi 14 kadın, 3 erkek toplamda



17 kiři; 1.sınıf düzeyi 17 kadın, 8 erkek toplamda 25 kiři olmakla beraber toplam okul öncesi öğretmenliđi bölümünden 64 kadın, 18 erkek 82 öğretmen adayına anket uygulanmıřtır.

Sınıf düzeylerinde öğretmen adaylarının verdiđi cevaplar dikkate alındığında;

1. sınıf düzeyinde dođa yürüyüşleri (f:10), serbest yürüyüş (f:11), Yemek piřirme/ yeni lezzetler deneme (f:14) faaliyetleri diđer faaliyetlere göre daha çok yapılmıř olarak iřaretlenmiř olup dans (f:1), mandala boyama (f:0) tenis (f:1) faaliyetleri diđer maddelere göre daha az iřaretlenerek daha az yapılmıř etkinlikler olmuřtur.

2.sınıf düzeyinde yemek piřirme/ yeni lezzetler deneme (f:12), sinema (f:10), serbest yürüyüş (f:8) faaliyetleri diđer faaliyetlere göre daha çok yapılan faaliyetlerden olup dans (f:1), mandala boyama (f:1), tenis (f:0) faaliyetleri daha az tercih edilerek en az yapılan faaliyetler arasında olmuřtur.

3. sınıf düzeyinde yemek piřirme/ yeni lezzetler deneme (f:12), sinema (f:10), serbest yürüyüş (f:8) faaliyetleri en çok yapılan faaliyetlerden olup tenis (f:0), yađlı boya (f:1), dans (f:2) faaliyetleri frekansları incelendiđinde daha az tercih edilen faaliyetler arasında oldukları görülmüřtür.

4. Sınıf düzeyinde serbest yürüyüş (f:11), Yemek piřirme/ yeni lezzetler deneme (f:7), sinema (f:7) etkinlikleri en çok yapılan etkinliklerden olup tenis (f:0), dans (f:2), kořu (f:0) faaliyetleri frekans sayıları incelendiđinde en az tercih edilen faaliyetlerden olmuřtur.

Bütün sınıf düzeylerinde en çok yapılması tercih edilen etkinlik yemek piřirme/ yeni lezzetler deneme etkinliđi olmuř olması evlerde fazlaca vakit geçirme imkânı bulunan bu süreçte bir zaman geçirme ve uğrařla ilgilenmede ilk yapılacak faaliyetlerden olmuř olmasından dolayı sınıf düzeyleri arasında benzerlik göstermiř olabilir. Arařtırmada 1., 2. ve 3. sınıf düzeylerinde serbest yürüyüş faaliyetinin en çok tercih edilen faaliyetlerden olmuř olması sınıf düzeyleri incelendiđinde benzerlik gösteren maddelerden olmuřtur. 2., 3. ve 4. sınıf düzeylerinde sinema faaliyetinin daha çok yapılarak sınıf düzeyleri arasında benzerlik göstermiř olmasının evlerde kalınan bu süreçte daha çok hem hareket etmeden hem de vakit geçirilen bir etkinlik olmasından olmuř olabilir. Bütün sınıf düzeylerinde tenis etkinliđinin en az yapılan faaliyetler arasında olmuř olduđu görülmekte olup yine aynı řekilde dans



etkinliđi de bütün sınıf düzeylerinde en az tercih edilen etkinliklerden olarak sınıf düzeylerinde benzerlik göstermiştir. Ayrıca 1. ve 2. sınıf düzeylerinde mandala boyama etkinliđinin daha az yapılan etkinliklerden olması sınıf düzeylerinde benzerlik göstermiştir.

Araştırma kapsamında katılımcılara pandemi öncesinde katılım gösterdikleri bir kurs veya etkinlik olup olmadığı eđer katılım gösterdikleri bir kurs/etkinlik vardı ise bu etkinlik/ kursa nasıl ve mekânsal açıdan nerede katılım gösterdiklerine ilişkin açık uçlu soru olarak sorulmuştur. Bu bağlamda öğretmen adaylarının pandemi öncesi ilgi alanlarıyla ilgili bir kursa veya etkinliğe katılma durumlarına ilişkin görüşleri Tablo 6’da verilmiştir.

**Tablo 6. Öğretmen Adaylarının Bir Kursa veya Etkinliğe Katılma**

**Durumlarına İlişkin Görüşleri**

Katılım durumları	f
Evet, katılıyordum/ yapıyordum	45
Hayır, katılmıyordum/ yapmıyordum	150

Öğretmen adaylarının büyük çoğunluğu pandemi öncesi ilgi alanlarıyla ilgili bir kursa veya etkinliğe katılmadığını ifade etmiştir. Öğretmen adaylarının katılım gösterdikleri kurs veya etkinliklere ilişkin doğrudan alıntıları şu şekildedir:

K1: “Gençlik merkezinde turnuvalara katılıyordum.”

K12: “Online yoga kurslarına katılıyordum”

K3: “İngilizce kursuna katılıyordum, online devam ettim.”

K25: “Gençlik merkezinde resim yapıyordum.”

K37: “Satranç, yüzme ve yabancı dil kursuna gidiyordum.”

K8: “Doğa yürüyüşü yapıyordum.”

K19: “Voleybol kursuna gidiyordum.”

K11: “İşaret dili kursuna katıldım.”

K22: “Yüzmeye havuza gidiyordum. Tiyatro ve sinema için dışarıda izlemeye gidiyordum. Diğer etkinlikleri evde yapıyordum.”

K14: “Evde resim dışarıda yürüyüş ve bisiklet sürme aktiviteleri yapıyordum.”

K85: “Keman kursuna katılıyordum, bu kurs gençlik merkezindeydi.”



K56: “Halk oyunları kursuna gidiyordum”

K49: “Kurs yerinde yoga, salonlarda tiyatro ve sinema, evde ev içi egzersiz, doğada yürüyüş yapıyordum.”

K21: “Kızılay ile gönüllü etkinliklere katılım sağlıyordum.”

K42: “İşaret dili kursuna haftada 1 gün olmak üzere halk eğitim merkezinde katılıyordum.”

K35: “Topluluğumuzdaki gönüllülük faaliyetlerine katılıyordum.”

Öğretmen adaylarının pandemi sürecinin ilgi alanlarıyla ilgili bir kursa veya etkinliğe katılma durumlarının sosyal aktivitelerine etkisine ilişkin görüşleri Tablo 7’de verilmiştir.

**Tablo 7. Öğretmen Adaylarının Pandemi Sürecinin Sosyal Aktivitelerine Etkisine**

**İlişkin Görüşleri**

Etkileme süreci	f
Evet, etkiledi	43
Hayır, etkilemedi	152

Öğretmen adaylarının büyük çoğunluğu pandemi sürecinin ilgi alanlarıyla ilgili bir kursa veya etkinliğe katılma durumlarının sosyal aktivitelerine etkisi olmadığını ifade etmiştir. Öğretmen adaylarının pandemi sürecinin sosyal aktivitelerine etkisine ilişkin doğrudan alıntıları şu şekildedir:

K13: “Her şey aynı süre ile devam etti ancak verim düşüklüğü yaşadım”

K5: “Sosyalleşmem zayıfladı, iletişim becerim azaldı.”

K8: “Yüzme kurslarına katılmak istediğimde pandemi olduğu için kapalıydı”

K29: “Sosyallik düzeyimde dibi yaşadım.”

K10: “Ben pandemi döneminde keman kursuna katıldım. Ama riskli olduğu için içim çok rahat değildi.”

K11: “Katılmış olduğum kursa – işaret dili- devam edemedim.”

K22: “Yüzmeye gidemedim, Tiyatroyu ve sinemayı internette izledim fakat canlı izlemek kadar keyifli değildi. Yürüyüşte yapamadım, hava alamamak beni özgür hissettirmedi.”

K33: “Sosyal açıdan anksiyeteye sahip olduğumu fark ettiğimden toplu etkinliklerden uzak durmak zorunda kaldım.”

K95: “Olumsuz etkiledi.”

K66: “Yaş kısıtlaması olduğu için dışarı çıkamadım.”



K77: “Evet etkiledi, evde bulunduğumuz için dışarıdaki etkinliklere katılamadım.”

K59: “Kurslar ve sahneler kapandığı için aktivitelere ara vermek zorunda kaldım.”

K83: “Ukulele çalmaya başladım.”

Öğretmen adaylarının pandemi sürecinin ilgi alanlarıyla ilgili bir kursa veya etkinliğe katılma durumlarının sosyal aktiviteleri bırakmaya ilişkin görüşleri Tablo 7’de verilmiştir.

**Tablo 7. Öğretmen Adaylarının Pandemi Sürecinin Sosyal Aktiviteleri**

**Bırakmaya İlişkin Görüşleri**

Bırakma durumu	f
Evet, bıraktım	34
Hayır, bırakmadım	159

Öğretmen adaylarının büyük çoğunluğu pandemi sürecinin ilgi alanlarıyla ilgili bir kursa veya etkinliğe katılma durumlarının sosyal aktiviteleri bırakmalarına neden olmadığını ifade etmiştir.

Öğretmen adaylarının pandemi sürecinin ilgi alanlarıyla ilgili bir kursa veya etkinliğe katılım gösterme açısından sosyal aktivite değişikliklerine ilişkin görüşleri Tablo 8’te verilmiştir.

**Tablo 8. Öğretmen Adaylarının Pandemi Sürecinin Sosyal Aktivite Değişikliklerine**

**İlişkin Görüşleri**

Değişiklik durumu	f
Evet, değişti	39
Hayır, değişmedi	156

Öğretmen adaylarının büyük çoğunluğu pandemi sürecinin ilgi alanlarıyla ilgili bir kursa veya etkinliğe katılma durumlarının sosyal aktivitelerini değiştirmediklerini ifade etmiştir. Öğretmen adaylarının pandemi sürecinin sosyal aktivitelerini değiştirmesine ilişkin doğrudan alıntıları şu şekildedir:

K4: “Spor salonunda spor yaparken evde yapmaya başladım.”

K5: “Sağlık alanında yapılan etkinliklere daha fazla katılmaya başladım.”

K27: “Virüsten korunmak için sosyal aktiviteleri minimuma indirdim.”

K39: “Kurslar online şekilde devam etti.”





K50: “Evde aşırı bunaldığım için daha çok etkinliğe katılmak istedim.”

K13: “Daha çok online aktivitelere katılım sağladım”

K18: “Daha çok bilgisayar oyunlarına yöneldim.”

K45: “Sosyal yardımlaşma konusunda etkinliklere katıldığım için insanlarla olan sosyal ilişkilerim daha da ilerledi.”

#### 4. Sonuç, Tartışma ve Öneriler

Daha önceden yapılmış olan Covid-19 pandemi sürecinde üniversite öğrencilerinin aktivite durumları hakkında olan araştırmalar incelendiğinde Covid-19 pandemisi öğrencilerin fiziksel aktivitede bulunma düzeylerinin azaldığı, fiziksel aktivitede bulunmaya devam eden öğrencilerin fiziksel aktivite türü seçiminde ev içinde yapılabilecek egzersizleri seçmeye özen gösterdikleri görülmüştür (Ercan ve Keklice, 2020). Üniversite öğrencilerinin daha çok ev içi egzersizlere yönelme nedenleri, bu süreçte sokağa çıkma yasağı olması ve ev içinde yapılabilecek olan faaliyetlere ulaşımının daha kolay olmasıdır. Bir başka araştırmada ise üniversite öğrencilerinin yaşanan pandemi sürecinde fiziksel aktivite düzeylerinin daha da azaldığı, yaşam kalitesi ve depresyon seviyelerinin de olumsuz etkilendiği gösterilmiştir (Bulguroğlu vd., 2021). Bu araştırma kapsamında öğretmen adayları ile yapılan pandemi sürecindeki aktiviteler hakkındaki ankette öğretmen adaylarının verdikleri cevapların örtüştüğü görülmüştür.

Üniversite öğrencilerinin Covid-19 pandemi sürecinde fiziksel aktivite değişimlerinin incelendiği bir çalışmada öğrencilerin daha çok ev içi egzersizlere yöneldiği görülmüştür (Ercan ve Keklice, 2020). Öğretmen adayları ile yapılan ankette ev içi egzersizler maddesinin işaretlenme sıklığına bakıldığında (f:122) öğretmen adaylarının bu süreçte dışarı çıkmanın mümkün olmadığı için ulaşması kolay olan ev içini baz alan faaliyetlerde buldukları söylenebilir. Yapılan bir başka araştırmada ise pandemi sürecinde fiziksel aktivite seviyeleri incelenen bireylerin dışarıda yürüyüş maddesini işaretlemiş olduğu görülmüştür (Ciddi ve Yazgan, 2020). Öğretmen adayları ile yapılan ankette doğa yürüyüşü, serbest yürüyüş ve 10.000 adım tamamlama maddelerinin işaretlenme sıklıklarına bakıldığında (f:92), (f:110), (f:71) öğretmen adaylarının tercih etme sebeplerinin kalabalıktan uzak bölgelere ulaşımın mümkün olduğunda bu aktiviteyi yapmayı tercih etmeleri bu yüzden işaretleme



yaptıkları söylenebilir.

Üniversite öğrencilerinin pandemi sürecindeki fiziksel aktivitelerinin değişimlerinin incelendiği araştırmada öğrencilerin pandemi sürecindeki aktivitelerinde masa tenisi maddesini hiç işaretlemedikleri görülmüştür (Ercan ve Keklice, 2020). Öğretmen adayları ile yapılan ankette masa tenisi maddesinin işaretlenme sıklığına bakıldığında (f:16) öğretmen adaylarının bu maddeyi diğer maddeler arasında daha az işaretlemelerinin sebebinin masa tenisi için özel ekipman ve alan gerekmesi olduğundan olabileceği söylenebilir. Yine aynı araştırmada üniversite öğrencilerinin fiziksel aktivite değişimlerinin incelendiği ankette pandemi sürecinde yapılan aktivitelerden futbol maddesinin hiç işaretlenmediği görülmüştür (Ercan ve Keklice, 2020). Öğretmen adayları ile yapılan ankette futbol maddesinin işaretlenme sıklığına bakıldığında (f:22) öğretmen adaylarının bu aktiviteyi yapmak için birden fazla insana ihtiyaç duymaları ve pandemi sürecinde sosyal mesafe gereğiyle insanların bir araya gelmemeye dikkat etmeleri olabilmekle birlikte yine bu madde de işaretleme yapan öğretmen adaylarının bu aktiviteye erişimleri aynı evde yaşadığı veya sosyal mesafeye dikkat ederek dışarıda bulunulabilen zaman dilimlerinde yapılmış olabileceği söylenebilir (Alwihed vd., 2021).

Öğretmenler toplumda sosyal yönleri güçlü toplumlara eğitim ile yön veren örnek alınan bireylerdir. Öğretmenlerin sosyal yönlerini beslemeleri ve geliştirmeleri öğretmeni örnek kişilik olarak gören yeni nesillerin de düşünme becerilerini, sosyal kimliklerini, eleştirme ve analitik düşüncelerini, iletişim yeteneklerini, kendini tanıma, ne istediğini bilme, kendi kararlarını alıp buna uygun sorumluluğu üstlenebilen bireylerin yetişmesinde ve kendini gerçekleştirme basamaklarında ilerleme yolunda devamlılık sağlamaları açısından öğrenciler için oldukça önemlidir. Öğretmenlerin fiziksel aktivite düzeylerinin de hayatlarında bulunması yine yetiştirmesi beklenen nesle bu bilinci aşılacak böylece hem fikri hem de vücudu dinç bireyler yetişecek olup ruh ve vücut bütünlüğü olan sağlıklı bireyler yeni nesli oluşturacaktır. Tüm bu sebeplerle öğretmen adaylarının kendilerini geliştirmelerinin önemine değindikten sonra olası bir alarm durumunda alacakları önlemler ile kendilerini geliştirme çalışmalarına devamlılıkları da önem arz etmektedir.

Geçtiğimiz senelerde bu alarm durumundan en belirgin olanı pandemi sürecinde yaşanmış olup öğretmen adayları ile yapılan anketin de bu durumdan etkilendiği Türkiye'nin Güney Marmara



bölgesinde yer alan Çanakkale Onsekiz Mart Üniversitesi'nde eğitim fakültesi öğrencilerinden Sınıf Öğretmenliği ve Okul Öncesi Öğretmenliği 1.sınıf, 2.sınıf, 3.sınıf ve 4.sınıfta okuyan toplamda 195 öğretmen adayıyla yapılan anket sonucunda öğretmen adaylarıyla yapılan anket verilerinin analizi ile ve alan yazıda bulunan makaleler göz önünde bulundurulduğunda sonuçlarda anlamlı benzerlikler olduğu görülmektedir. Ankette yer alan yazılı sorulara öğretmen adaylarının verdiği cevaplar incelendiğinde öğretmen adaylarının Covid-19 pandemi sürecinde yapmış oldukları etkinlikleri gittikleri kursları daha çok bırakmış olduklarını evde telafisi yapılabilen veya online olarak devam edilebilen etkinlikleri sürdürmeye çalıştıkları görülmüştür.

Sonuç olarak, öğretmen adaylarının anketlere vermiş oldukları cevaplar incelendiğinde ilgi alanları doğrultusunda şartlar el verdiği takdirde kurslara katılım gösterdikleri veya çalışmalarda buldukları görülmüş olup fiziksel ve sosyal aktiviteleri bulunan öğretmen adaylarının bu aktiviteleri olası bir felaket durumunda aktivitelere ulaşım sağlamaları güçleştiğinde yaratıcı düşünceler ile yeni etkinlikler üretme veya var olan etkinlikleri sürdürmede çözüm bulma konularında eksik oldukları görülmüştür. Alan yazın incelendiğinde bu konudaki araştırmaların azlığı dikkat çekmiş olup çalışmamızın literatüre yol gösterici nitelikte olacağını öğretmen adaylarının sosyal yönleri güçlü bireyler olmaları gerekliliğinin yeni nesli yetiştirme yönündeki öneminin fark etmekte öğrencilerin dersleri kadar yapmış oldukları aktivitelerin de önemiyetinin olduğunu düşünmekteyiz.

Araştırmanın bulgular ve sonuçlar kısmı göz önünde bulundurularak bundan sonraki çalışmalar için öneri niteliğinde fikirler ortaya koyulmuştur:

1. Araştırmanın örneklemini oluşturan sınıf öğretmenliği ve okul öncesi öğretmenliği öğrencilerinin vermiş oldukları cevaplar incelendiğinde sosyal ve fiziksel aktivite seviyelerinin artması yönünde üniversitelerin eğitim fakültelerinde öğretmen adaylarının daha çok aktiviteye ulaşım sağlayabilmeleri adına seçmeli ders niteliğinde çeşitli sosyal aktiviteler yapabilecekleri dersler koyulabilir.
2. Üniversite öğrencilerine yönelik talep doğrultusunda oluşturulacak hafta sonları katılımın sağlanacağı kurslar açılabilir. Bu kursların özellikle olası felaket, salgın hastalık vb. durumlarında öğrencilerin yaratıcılıklarını kullanma, üretkenliklerini saptama ve sosyal



giriřimci yanlarını destekleme adına öğreti sağlaması gerçekleştirilebilir.

## 5. Kaynakça

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## Zorunlu Örgütsel Vatandaşlık Davranışının İş-Aile Çatışması Üzerindeki Etkisinde Aile Dostu İş Programlarının Aracı Rolü

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### Özet

Bu çalışma zorunlu örgütsel vatandaşlık davranışının iş-aile çatışması ve aile-iş çatışması arasındaki ilişkide aile dostu politikaların aracı etkisini belirlemeyi amaçlamaktadır. Araştırma kapsamında kamu ve özel sektörde 459 çalışana olasılığa dayalı olmayan kolayda örnekleme yöntemi ile anket uygulanmıştır. Anket sonuçları SPSS 24 ve AMOS 24 programları ile analiz edilmiştir. Analiz sonucunda zorunlu örgütsel vatandaşlık davranışının iş-aile çatışması ve aile-iş çatışması arasında pozitif, aile dostu politikalar ile negatif bir ilişki tespit edilmiştir. Bununla birlikte aile dostu politikaların iş-aile çatışması üzerinde negatif aile-iş çatışması arasında pozitif bir ilişki tespit edilmiştir. Aracılık etkisi kapsamında aile dostu politikaların iş-aile ve aile-iş çatışması arasında kısmi aracılık etkisi tespit edilmiştir.

**Anahtar Kelimeler:** Zorunlu örgütsel vatandaşlık davranışı, aile dostu politikalar, iş-aile çatışması, aile-iş çatışması

## The Mediating Role of Family-Friendly Work Programs in the Effect of Compulsory Organizational Citizenship Behavior on Work-Family Conflict

### Abstract

This study aims to determine the mediating effect of family-friendly policies on the relationship between compulsory organizational citizenship behavior and work-family conflict and family-work conflict. Within the scope of the research, a questionnaire was applied to 459 employees in the public and private sectors with the convenience sampling method. Survey results were analyzed with SPSS 24 and AMOS 24 programs. As a result of the analysis, a positive relationship was found between compulsory organizational citizenship behavior and work-family conflict and family-work conflict, and a negative relationship with family-friendly policies. However, a positive relationship was found between family-friendly policies and negative family-work conflict on work-family conflict. Within the scope of mediation effect,





partial mediation effect of family-friendly policies between work-family and family-work conflict has been determined.

**Keywords:** Compulsory organizational citizenship behavior, family friendly policies, work-family conflict, family-work conflict

## GİRİŞ

Örgütlerin en kritik sermayesi olan insan unsurunun örgüte yönelik her türlü katkıları sürdürülebilir rekabet avantajına katkı sunmaktadır. İş ortamının giderek karmaşık ve öngörülemez hale gelmesi neticesinde çalışanların rol tanımlarının ötesinde gayret göstermeleri örgüt için arzu edilen bir davranışa dönüşmektedir. Çalışanların rol tanımlarının ötesinde gönüllü davranışlarını içeren örgütsel vatandaşlık davranışı sergilemeleri örgütlerde ve yöneticilerde beklenti haline gelmektedir. Bu beklenti belli bir zaman sonra çalışanların gönüllü davranış göstermelerine yönelik baskıya neden olmaktadır.

Çalışanların normal şartlarda gönüllü olarak göstermiş olduğu davranışlar zorunluluk haline geldiği zaman çalışmada rol belirsizliği olmakta ve bu husus iş ve ailede kendisinin rollerini dengeli bir şekilde sergilemesini etkilemektedir. Çalışanın yaşamış olduğu bu iş-aile çatışmasının olumsuzluğunu gidermek için örgütler ve yöneticiler çeşitli politikalar uygulamaktadır. Bu politikaların başında aile dostu politikalar gelmektedir.

Literatürde özellikle örgütsel vatandaşlık davranışının karanlık yönünü temsil eden zorunlu örgütsel vatandaşlık davranışının olumsuzluklarını azaltmaya yönelik çalışmalar ve tavsiyeler bulunmaktadır. He ve diğerleri (2018) zorunlu örgütsel vatandaşlık davranışının çalışan sessizliği üzerinde yaptığı çalışmada gelecekte yapılacak çalışmalara tavsiyeler kısmında zorunlu örgütsel vatandaşlık davranışının işyeri dışındaki davranışlara etkisinin araştırılmasını vurgulamışlardır. İşyeri dışı davranış olarak bu çalışmada çalışanların işyeri dışındaki davranışları kapsayan iş-aile çatışması değerlendirilmiştir. Bununla birlikte He ve diğerleri (2020) zorunlu örgütsel vatandaşlık davranışının çalışan yaratıcılığına etkisini araştırdığı çalışmada gelecekte yapılacak çalışmalara tavsiyeler kısmında aracılık etkisi kapsamında iş-aile çatışmasının değerlendirilmesini vurgulamıştır. Bolino ve diğerleri (2010) baskı altında vatandaşlık davranışını değerlendirdiği çalışmada yüksek düzeyde vatandaşlık baskısını diğer bir ifadeyle zorunlu örgütsel vatandaşlık davranışının olumsuz etkilerini azaltmak amacıyla örgütsel faktörler kapsamında aile dostu politikaların değerlendirilmesi tavsiyesinde bulunmuşlardır. Bu kapsamda aile dostu politikalar bu çalışmada aracı etki olarak ele alınmıştır.



## 1. KAVRAMSAL ÇERÇEVE

### 1.1. ZORUNLU ÖRGÜTSEL VATANDAŞLIK DAVRANIŞI

Örgütün resmi rol yükümlülükleri tarafından doğrudan veya açıkça tanımlanmayıp sözleşme ile de garanti altına alınmayan, örgütün etkinliğini artıran, çalışanların sergilemiş oldukları bireysel, gönüllü ve ekstra rol davranışdır (Organ, 1997:86-87; Podsakoff ve MacKenzie, 1997:134). 1980'lerden günümüze kadar artan bir ivme ile çalışılmakta olan örgütsel vatandaşlık davranışı örgütlerin performansını artırarak sosyal yapısını güçlendirmektedir (Battal ve Karabey, 2020:607). Olumlu iş çıktılarının bir öncülü olan örgütsel vatandaşlık davranışının özellikle son yıllarda gönüllü ekstra rol davranışlarının iş tanımının bir parçası haline gelebileceği, çalışanların iyi niyetlerinin yöneticiler tarafından zorunlu hale gelebileceği ve gayri resmi bu tür zorlayıcı eylemlerin çalışanların nihayetinde yıkıcı olan ekstra rol davranışlarına sebep olabileceği gündeme gelmiştir. Yöneticiler, çalışanların göstermiş olduğu örgütsel vatandaşlık davranışları diğer çalışanlar tarafından da sergilenmesini bekler hale gelmiş ve neredeyse bu davranışlar iş tanımlarının bir parçası haline gelmiştir. Bunun neticesinde örgütsel davranışın bu kara yüzü zorunlu örgütsel vatandaşlık davranışı olarak kavramsallaştırılmıştır (Topçu vd., 2017:508; Vigoda-Gadot, 2006). Özellikle güç mesafesinin yüksek, bireyselliğin düşük olduğu Türkiye'de yöneticilerin çalışanlardan resmi görevlerinin ötesinde talepte bulunma eğiliminden dolayı zorunlu örgütsel vatandaşlık davranışı önem arz etmektedir (Yıldız ve Elibol, 2021:654). Sosyal etki kuramı kapsamında yöneticilerin zorlayıcı yöntemlerle rol tanımlarını genişleterek performansı artırmak maksadıyla çalışanlarda tutum ve davranış değişikliği ile sonuçlanabilecek bir sosyal etki taktiği kullanması sonucu zorunlu örgütsel vatandaşlık davranışlarının yaygınlaşmasına ve bu hususta olumsuz iş çıktılarının neden olmaktadır (Yakın ve Sökmen, 2018:405). Bu kapsamda olumsuz iş çıktılarının bir tanesi de iş-aile yaşam çatışmasıdır (Liu vd., 2017:700).

### 1.2. İŞ-AİLE YAŞAM ÇATIŞMASI

Bireylerin birden fazla role sahip oldukları durumlarda roller arasındaki tutum ve davranışların birbirleriyle uyuşmaması sonucunda bireyde oluşan baskıyla roller arasında çatışma durumu meydana gelmektedir (Akdoğan ve Aydemir, 2018:1995). Toplumun yapısında ve çalışma yaşamında meydana gelen değişiklikler çalışanlara fazladan roller yüklemektedir. Roller arttıkça roller arasında zamanla muhtemel çatışmalar meydana gelmektedir. Çalışanların yaşadığı roller arası çatışmalardan birisi de iş-aile yaşam çatışmasıdır. İş-aile çatışması, iş ve aile alanlarından gelen rol baskılarının bazı açılardan karşılıklı olarak uyumsuz olduğu bir tür roller arası çatışma. Yani iş (aile) rolüne katılım, aile (iş) rolüne katılım sayesinde daha da zorlaşmaktadır (Greenhaus ve Beutell, 1985:77). Tanımdan da anlaşılacağı üzere iş-aile çatışması iki yönlü olarak ortaya çıkabilmektedir. İş rolü aile rolünü zorlaştırabilirken bazen de aile rolü iş rolünü zorlaştırmaktadır.

Çalışanların hayatlarında önem verdikleri önemli iki kavram olan iş ve aile arasında yaşanabilecek rol çatışmaları hem çalışanları hem de örgütleri olumsuz açidan



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etkileyebilmektedir (Şentürk ve Bayraktar, 2018:25). İş-aile arasındaki ilişkilere, etkileşimlere ve birbirleri üzerindeki etkilere odaklanan iş-aile çatışması iş tatmini, iş-aile dengesi, örgütsel bağlılık, algılanan örgütsel adalet gibi olumlu iş çıktıları ile negatif, işten ayrılma niyeti, duygusal tükenmişlik gibi olumsuz iş çıktılarıyla pozitif bir ilişkiye sahiptir (Li, 2021; Nauman, vd., 2020; Talukder, 2019).

### 1.3. AİLE DOSTU POLİTİKALAR

İşgücünün değişimi, teknolojik gelişim ve rekabetin artması örgütlerde insan kaynakları açısından aile dostu politikaları her zamankinden daha da önemli kılmıştır. Son yıllarda özellikle iş-aile çatışmasının örgütler için giderek bir sorun haline gelmesi karşısında örgütler bu çatışmaları azaltmak, iş-aile dengesini muhafaza etmek ve yükümlülüklerini yerine getirmek amacıyla aile dostu politikaları benimsemeye başlamışlardır (Kanten, 2014:19). Aile dostu politikalar Simkin ve Hillage (1992) tarafından bir çalışanın aile sorumluluklarını istihdam ile birleştirmesini sağlamak için tasarlanmış remi ve gayri resmi programlar olarak tanımlanmıştır. Aile dostu politikalar iznin düzenlemeleri (annelik, babalık, hastalık vb.), esnek çalışma düzenlemeleri (yarı zamanlı çalışma, esnek çalışma, evde çalışma vb.) ve örgütte bulunan tesisleri (kreş, danışmanlık merkezi vb.) kapsamaktadır (Callan, 2007:674).

### 1.4. KAVRAMLAR ARASI İLİŞKİLER

Yöneticiler tarafından çalışanlara örgütsel vatandaşlık göstermesi yönünde yapılan baskılar zorunlu örgütsel vatandaşlık davranışını tetikleyerek iş-aile çatışmasına sebep olmaktadır. Diğer bir ifadeyle zorunlu örgütsel vatandaşlık davranışı ile iş-aile çatışması arasında pozitif bir ilişki bulunmaktadır (Chen vd., 2021; Liu vd., 2017; Neves, Andrade, 2021). Zorunlu örgütsel vatandaşlık davranışı ile aile dostu programlar arasındaki ilişkiyi doğrudan araştıran bir çalışma olmamasına rağmen örgütsel vatandaşlık davranışı ile aile dostu programlar arasındaki ilişkiyi inceleyen çalışmalar mevcuttur. Örgütsel vatandaşlık davranışının karanlık yönü olan zorunlu örgütsel vatandaşlık davranışı arasında negatif yönlü bir ilişki (Hayat vd., 2019; Zhao vd., 2014) olmasından dolayı ve iki kavramın birbiriyle temelde aynı yapıyı içermesinden dolayı örgütsel vatandaşlık davranışı ile aile dostu programlar arasındaki pozitif ilişki (Afzal ve Azmi, 2022) kapsamında zorunlu örgütsel vatandaşlık davranışı ile aile dostu programlar arasında negatif bir ilişki olacağı beklenmektedir. Aile dostu programların iş-aile çatışmasını negatif yönde etkilediği sonucuna ulaşılmıştır (Afrianty vd., 2015; Aydın ve Ünnü, 2020; Youngcourt ve Huffman, 2005).

Sosyal değişim kuramı kapsamında örgütler çalışanlara destekleyici bir örgüt iklimi sunarlarsa çalışanlar bunu olumlu olarak algırlar ve olumlu davranış sergileyerek örgüte cevap verirler (Afzal ve Azmi, 2022:40). Zorunlu örgütsel vatandaşlık davranışının olumsuz etkisi sosyal değişim kuramı kapsamında aile dostu politikalarla azaltılabilir ve çalışanlarda oluşabilecek iş-aile çatışmasının etkisi azalabilir.



Literatürdeki kavramların arasındaki ilişkiler sosyal değişim kuramı kapsamında değerlendirilerek aşağıdaki hipotezler oluşturulmuştur.

H1: Zorunlu örgütsel vatandaşlık davranışının iş-aile çatışması üzerinde pozitif etkisi vardır.

H2: Zorunlu örgütsel vatandaşlık davranışının aile dostu politikalar üzerinde negatif etkisi vardır.

H3: Aile dostu politikaların iş-aile çatışması üzerinde negatif etkisi vardır.

H4: Zorunlu örgütsel vatandaşlık davranışının iş-aile çatışması üzerindeki etkisinde aile dostu politikaların aracı etkisi vardır.

## 2. ARAŞTIRMA YÖNTEMİ

Çalışmanın amacı kapsamında olasılığa dayalı olmayan teknikler kapsamında kolayda örnekleme yöntemi ile kamu ve özel sektör çalışanlarına anket uygulanmıştır. Çalışmaya 459 kişi katılmış olup katılımcıların 83'ü özel sektör, 376'sı kamu kurumu çalışanlarıdır. Çalışmaya katılanların 78'i kadın, 381'i erkektir. Anket uygulaması sonucunda elde edilen veriler SPSS 24 ve AMOS 24 programları kullanılarak analiz edilmiştir.

### 2.1. ARAŞTIRMADA KULLANILAN ÖLÇEKLER

Çalışma kapsamında ölçeklerde 5'li likert ölçeği kullanılmış olup kullanılan ölçekler aşağıya çıkarılmıştır.

#### 2.1.1. Zorunlu Örgütsel Vatandaşlık Davranışı Ölçeği

Çalışmada Vigoda-Gadot (2007) tarafından oluşturulan, Şeşen ve Soran (2013) tarafından Türkçe'ye çevrilen ve beş maddeden oluşan zorunlu örgütsel vatandaşlık ölçeği kullanılmıştır (Çoban, 2020). Ölçekte "Bu kurumda yöneticiler, çalışanlara resmi görevlerinin ötesinde ekstra faaliyetlerde bulunmaları için baskı uygular" ve "Görevimi yaparken, resmi iş gereklerimin ötesinde çaba harcamam için bir baskı olduğunu hissediyorum" gibi sorular bulunmaktadır.

#### 2.1.2. İş-Aile Çatışması Ölçeği

Netemeyer, Boles ve McMurrian (1996) tarafından geliştirilen iş-aile ölçeği iş yaşamından kaynaklanan iş-aile çatışması ile aile yaşamından kaynaklanan aile-iş çatışması düzeylerini ölçen iki ölçekten oluşmaktadır (Efeoğlu, 2006). Ölçekte "İş sorumluluklarım aile ve ev yaşantımı olumsuz olarak etkiliyor" ve "Ailemin gereksinimleri iş yaşamımı olumsuz olarak etkiliyor" gibi sorular bulunmaktadır.

#### 2.1.3. Aile Dostu Politikalar Ölçeği

Çalışmada Buz (2009) tarafından derlenen ve Aydın (2019) tarafından oluşturulan aile dostu politikalar ölçeği kullanılmıştır. Ölçekte "Bir çalışanın çocuğu hasta olursa hemen izin verilir"



ve “Çalışanlarının çocuklarının okul işleriyle (veli toplantısı, kayıt günleri, müsamere günleri vb.) mesai saatlerine denk geldiğinde rahatlıkla izin verilir” gibi sorular bulunmaktadır.

### 3. BULGULAR

Çalışma kapsamında ilk olarak ölçeklerde yaygın metot yanlılığı olup olmadığına Harman tek faktör testi ile bakılmış ve tüm anket için açıklanan varyans değerinin %50’den az olduğu yani %24,072 olduğu tespit edilmiştir. Bu sonuca göre tüm ankette yaygın metot yanlılığı bulunmamaktadır. Sonraki aşamada ölçeklerin iç tutarlılık güvenilirliği işe basıklık ve çarpıklık değerlerine bakılmıştır. Ölçeklerin iç tutarlılık güvenilirliği ile basıklık ve çarpıklık değerleri Tablo 1’ de verilmiştir.

**Tablo 1. İç Tutarlılık Güvenilirliği ile  
Basıklık ve Çarpıklık Değerleri**

Kullanılan Ölçek	Cronbach Alfa Değeri	Çarpıklık (Skewness) Değeri	Basıklık (Kurtosis) Değeri
Zorunlu Örgütsel Vatandaşlık Davranışı	0,886	0,072	-0,593
İş-Aile Çatışması	0,930	-0,058	-0,813
Aile-İş Çatışması	0,908	0,704	0,273
Aile Dostu Politikalar	0,902	0,097	0,825

Tablo.1’de görüldüğü gibi ölçeklerin iç tutarlık güvenilirlik katsayılarının 0,7’den büyük olduğu, çarpıklık ve basıklık değerleri kapsamında verilerin normal dağılım sergilediği tespit edilmiştir.

Verilerin normal dağılım sergilediği tespit edildikten sonra yapısal eşitlik modeli ile doğrulayıcı faktör analizi yapılmıştır.



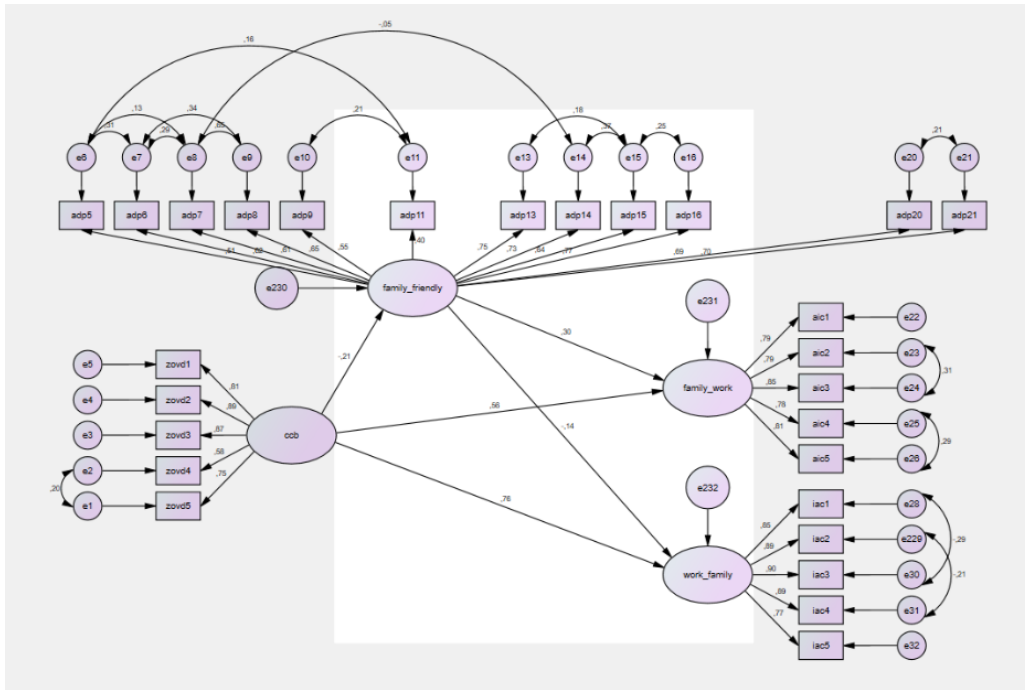
**Tablo 2. Uyum Değerleri ve Doğrulayıcı Faktör Analiz Sonuçları**

	CMIN/DF	GFI	IFI	CFI	RMSEA
<i>İyi Uyum</i>	$\leq 3$	$\geq 0,90$	$\geq 0,95$	$> 0,97$	$\leq 0,05$
<i>Kabul Edilebilir Uyum</i>	$\leq 5$	$\geq 0,85$	$\geq 0,90$	$> 0,95$	$\leq 0,08$
Zorunlu Örgütsel Vatandaşlık Davranışı	2,966	0,989	0,994	0,994	0,066
İş-Aile Çatışması	3,3	0,992	0,996	0,996	0,071
Aile-İş Çatışması	3,875	0,990	0,994	0,994	0,079
Aile Dostu Politikalar	3,814	0,945	0,958	0,958	0,078

**Kaynak:** Karagöz, 2016:975

Tablo.2'de belirtilen uyum değerlerine ulaşmak için ölçeklerde faktör yükü düşük olan gözlenebilen değerler çıkarılmıştır. Bu kapsamda oluşturulan yol analizi Şekil.1'de verilmiştir.





**Şekil 1. Yapısal Eşitlik Modeli**

Yol analizi sonuçları Tablo 3'te verilmiştir.

**Tablo 3. Yol Analizi**

	Estimate	S.E.	C.R.	P.
Aile dostu politikalar<--- zorunlu örgütsel vatandaşlık	-0,212	0,039	-3,852	***
Aile-İş Çatışması <--- Aile dostu politikalar	0,300	0,081	5,511	***
İş-Aile Çatışması <--- Aile dostu politikalar	-0,144	0,066	-3,868	***
Aile-İş Çatışması <--- zorunlu örgütsel vatandaşlık	0,562	0,058	10,168	***
İş-Aile Çatışması <--- zorunlu örgütsel vatandaşlık	0,755	0,065	14,694	***



Bu deęerlere gre aynı zamanda Baron ve Kenny (1986)'nin belirttięi Őekilde aracılık etkisine bakılacaktır.

**Tablo 4. Doęrudan ve Dolaylı Etkiler**

	Zorunlu rgtsel Vatandaşlık Davranışı			Aile Dostu Politikalar
	Standardize Doęrudan Etki	Standardize Dolaylı Etki	Standardize Toplam Etki	Standardize Toplam Etki
Aile Dostu Politikalar	-0,212**	-	-0,212**	-
İŐ-Aile Çatışması	0,755***	0,031	0,786***	-0,144**
Aile-İŐ Çatışması	0,562***	-0,064	0,498***	0,300***

Tablo 4 kapsamında zorunlu rgtsel vatandaşlık davranışının iş-aile ve aile-iş çatışması üzerindeki olumsuz etkisine yönelik aile dostu politikalar aile-iş çatışması üzerindeki olumsuzluğu azaltırken iş-aile çatışması üzerindeki olumsuz etkisini artırmaktadır. Son olarak aracılık etkisine ait uyum iyilikleri deęerleri Tablo 5'te verilmiştir.



**Tablo 5. Aracılık Testi Uyum İyilikleri**

	CMIN/D F	GFI	IFI	CFI	RMSEA
<i>İyi Uyum</i>	$\leq 3$	$\geq 0,90$	$\geq 0,95$	$> 0,97$	$\leq 0,05$
<i>Kabul Edilebilir Uyum</i>	$\leq 5$	$\geq 0,85$	$\geq 0,90$	$> 0,95$	$\leq 0,08$
<b>Aracı Etkiye Ait Yapısal Eşitlik Modeli</b>	2,346	0,899	0,951	0,951	0,054

Bu kapsamda H1 ve H2 kabul edilmiş olup H3 ve H4 kısmi olarak kabul edilmiştir.

## SONUÇ

Örgütlerde meydana gelen olumsuz örgütsel davranış konuları örgütün performansını azalttığı gibi çalışanlarında yaşamlarını da olumsuz yönde etkilemektedir. Örgütlerin olumsuz örgütsel davranışları engellemeleri veya etkilerini azaltmaları önem arz etmektedir. Bu kapsamda uygulanacak olan başarılı aile dostu politikalar olumsuzlukları azaltmada yardımcı olacak faktörler arasında yer almaktadır.

Özellikle zorunlu örgütsel vatandaşlık davranışının olumsuz etkisinin azaltmaya yönelik olarak aile dostu programların araştırıldığı bu çalışma literatüre de katkı sağlayacaktır. Sonuçlar kapsamında zorunlu örgütsel vatandaşlık davranışı iş-aile çatışmasını ve aile-iş çatışmasını artırmaktadır. Ulaşılan sonuçlara göre aile dostu politikalar sadece aile-iş çatışmasının etkisini azaltmış fakat iş-aile çatışmasının etkisini artırmıştır. Çalışmanın sonuçları literatürdeki sonuçlarla genel olarak uyumlu çıkmıştır. Literatürden farklılaşan kısmı ise aile destek programlarının aile-iş çatışmasının etkisini artırdığına yönelik çıkan sonucudur.

Çalışma nicel bir çalışma olması nedeniyle özellikle aile dostu politikalar ile iş-aile çatışması ve aile-iş çatışması arasındaki etkilerin farklı çıkması ve nedenlerin tespit edilmesi için gelecekte yapılacak çalışmalarda aile destek politikalarının etkileri ile ilgili nitel bir araştırmanın yapılması kavramlar arası ilişkilerin sebeplerinin anlaşılmasında faydalı olacaktır.



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## CSR Initiatives and Corporate Image: Mediating Effect of Employee Trust

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### ABSTRACT

The stakeholder approach to CSR is very useful in identifying the right kind of initiatives to address the prevailing needs amongst them. HR Managers play a pivotal role in framing the CSR policy of an organization. They act as catalyst in deploying the resources of the organization towards the CSR initiatives. They are also responsible to evaluate the impact of the CSR programs in many organisation. This paper focuses attention on trust which has been seen as an essential element for organisations to operate efficiently and for establishing their image. In the present context, the research also becomes important as the Indian Companies Act (2013) requires organisations to invest 2% of their income on CSR initiatives.

**Keywords:** CSR initiatives, employee trust, corporate image

### Introduction

Corporate Social Responsibility (CSR) is perceived by different stake holders in different ways. The CSR activities in many organisations are under the purview of HR managers. HR Managers play a pivotal role in framing the CSR policy of an organization. They act as catalyst in deploying the resources of the organization towards the CSR initiatives. They are also responsible to evaluate the impact of the CSR programs in many organisation.

The concept of stakeholder was originally discussed by Ian Mitroff (1983), which was followed by Freeman and other scholars in the CSR arena. The stakeholder approach to CSR is very useful in identifying the right kind of initiatives to address the prevailing needs amongst them. The dimensions focused in this study namely Community, Government, Customer, Vendor, Employee, Shareholders, Environment are grounded on the Stake holder theory of CSR. This research will identify the CSR dimensions of an organisation through the lens of HR managers. It will also bring out the barriers of CSR in the selected organisation.

### Need for the Study

Employee trust plays a significant part in recruiting and retaining talent. This attractiveness and skill acquisition is a significant asset in a knowledge-driven market, where companies considered to be highly competitive are best positioned to hire and retain skill. The findings

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indicated a better image among the less-educated workers in the goal company. The likely reason behind this phenomenon is enhanced awareness and understanding among senior employees about other philanthropic organizations and their CSR initiatives.

This research focuses on trust as rather than an affective concept as a cognitive framework. Trust has been seen as an essential element for organisations to operate efficiently and for establishing their image. Integrity, fairness, and benevolence were found to be the ingredients necessary for building trust. Trust is developed based on the assessment of the principles and values of organisations. Signaling theory and the theory of social exchange help to link perceptions of CSR to trust. CSR practices create favorable expectations by giving positive messages to workers about the principles and beliefs of the company.

## Review of Literature

Chris Groves, Robert Lee, Lori Frater and Gavin Harper (2010) in their working paper on CSR in the Nano Technology Industry have done a content analysis of CSR reporting from the published codes of conduct, annual reports and policy statements of nearly 78 companies. The study has identified that most companies engage in CSR with an intention of doing no harm to society in the first place and to reduce risk and operational cost in the second place. The authors have recommended for industry code of conduct and sharing of CSR expertise within existing supply chain as the way to move forward.

Cynthia A. Williams and Ruth V. Aguilera (2008) have made a comparative study on attitude of managers and consumers on Corporate Social Responsibility. They have examined the studies done by Hay and Gray (1974) Hemingway and Maclagan (2004), Hemingway (2005) and highlighted that individual and organizational values are predictors of top level management's attitude towards CSR. It was also found that individual integrity, individual ethical perspectives and organizational culture greatly influences decision making relating to CSR. The research works done by several authors have been quoted to conclude that top management teams (TMTs), vary to a large extent across nations in their behaviour towards CSR due to the differences in norms of work, culture etc.

Dan F. Ofori and Robert E. Hinson (2007), have made a comparison of internationally-connected Ghanaian firms and SMEs in Ghana. It was found that the former think CSR should be major component of a company's strategy formulation while that kind of realization is not there in the latter. Environmental damage, Consumer protection, Education, Healthcare and Safety are the major areas of CSR initiatives done by Ghanaian firms.

In another study Dan F. Ofori (2010), has examined the managerial attitudes towards CSR among selected CLUB 100 member companies in Ghana. Ethical Standards has been identified as the most influential factor determining managers' attitude towards CSR which was followed by

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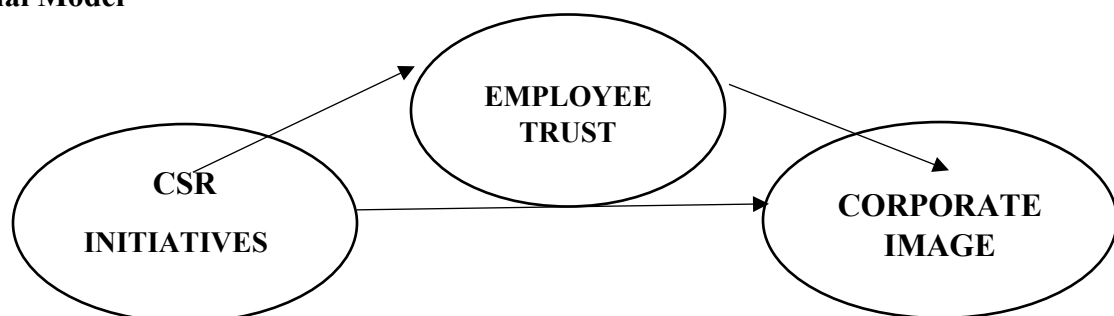
Industry practices, Traditional beliefs, Family upbringing and Educational training in that order. Md Zabid Abdul Rashid, Ibrahim Saadiatul, (2002) have examined the executives and management attitudes towards CSR in Malaysia and are in contrast with study of Dan F. Ofori (2010) in Ghana. While family upbringing was the most influential factor of manager's decisions on CSR it was not so in the case of Ghana. The Malaysian managers have felt that involvement in CSR activities enhances the public image of a company and its long term profitability.

Paolao Maccorrone (2009) has examined the Italian managers attitude towards CSR covering an array of industries such as Energy, Food Apparel, Chemical and Pharmaceutical. The Italian managers have said that their organisations primarily focused on four important dimensions of CSR namely Human Resources, Supply Chain and Competitive Context, Community and Environment. The managers were surveyed on how firms are coping with the increasing pressures to do good to the society. The study revealed that most companies concentrate more on environment dimension by collaborating and partnering with any of the environmental associations. Corporate DNA is an important variable spelt out by most managers to have an impact on attention to CSR issues.

Shen Hongtao & Yand Yi have conducted a study on manager's attitude towards CSR in china. The results of the study revealed that management has a positive attitude towards CSR. Shareholders are regarded as the important object of CSR activities but there prevails a confusion on the purpose of CSR among managers. The study highlighted that younger managers have positive attitude towards CSR and personal background has a significant influence. Rajan Sharma and Megha Sharma (2011) have attempted to find out the attitude of youth regarding CSR. They have employed factor analysis to identify 12 important areas in which companies are expected to get involved in the form of CSR from the opinion of Youth. These areas include Global standards, labour welfare, transparency, fair dealing, environmental protection among others.

Oliver Salzmann et al. (2005), have done an in-depth study on the Business Case for Corporate Sustainability (BCS) and suggest future research options in BCS. Complexity of the BCS and concept and difficulty in ascertaining materiality are the two major stumbling blocks for research in this area. In order to overcome these hurdles future research should focus on manager's key economic arguments in favour of BCS. So it is evident that there lies a gap in the form of eliciting manager's attitudes towards the CSR activities of an organisation.

## Conceptual Model





### **Figure 1 : Conceptual model for CSR Initiatives influencing corporate Image**

Trust applies to both a relationship and an outcome, and is described as a relationship in which one party has confidence in the reliability and honesty of an exchange partner. It is also described as the feeling that 'those we relate to will fulfill our aspirations and not harm us

According to the signaling theory, the positive signals could lead to a reinforcement of employee trust as companies perceived to be engaged in CSR are likely to be identified as 'trustees' acting in the interests of all stakeholders, including employees. Empirical research that have found positive correlations between the understanding of CSR activities and the creation of confidence among employees also support this argument.

On the other hand, the theory of social exchange predicts that reciprocity norms govern the reactions of the employees. This indicates that a favorable view of CSR is likely to improve employee trust in their managers as the workers believe that the organisations represent the needs of all stakeholders and are thus more worthy of their faith.

Corporate image also taken as its credibility is described as 'the ultimate impression that represents a collective stakeholder party' perception. It is the product of the cumulative views of the stakeholders about the capacity and purpose of the company to fulfill their demands and desires.

#### **Objectives of the Study**

- To study the explore the influence of CSR initiatives on corporate image with the mediating effect of employee trust
- To predict the direct effect, indirect effect and total effect of independent variable (X) on moderating variable (M)

#### **Methodology**

Mediation as a concept is viewed as a theorized underlying restraint wherein it is assumed that one variable could affect another variable such that it in turn could affect another variable which is the third variable. The dominant variable, considered as the mediator (M) helps in knowing the correlation that exists between the predictor variable namely the X and Y. The mediating effect has been depicted below.

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In the above graphical representation given,  $a$  and  $b$  which form the paths with respect to the mediation are considered as exerting effect which are direct. The effect of the mediation which takes place in which  $X$  is seen leading to  $Y$  through the variable  $M$ , is referred to as the effect which is indirect. This effect which is indirect shows to what extent the relationship between the independent and dependent variables is mediated by the moderating variable.

In any simple model of mediation, it is necessary to identify the paths namely, 'a', 'b', and 'c' which are to be predicted. The paths given in the above representation are taken as exerting a direct effect. In short, the model is specified such that the  $X$  the independent variable has a direct effect on the mediating variable ( $M$ ), with the mediator having an effect which is direct on the dependent variable or outcome namely  $Y$ . It is assumed that the independent variable  $X$  has an effect which is direct on  $Y$ . The effect of mediation is experienced when there is ample evidence to prove the effect which is indirect of the independent variable namely  $X$  on the dependent variable  $Y$ , is the flow through the mediating variable namely  $M$ . The effect of mediation by any variable in the model has been arrived at by computing the product of paths namely 'a' and 'b' which sums up to the indirect effect being taken as  $a$  multiplied by  $b$ .

Hence like in any mediation model, this study attempts to depict the effects both as direct and indirect together with total effect. Graphically the effect which is direct has been depicted with an arrow having a single head and the effect which is indirect has been expressed as the product of the paths which could be traced from moving from  $X$  to  $Y$  through the mediating variable.

In addition, the effect in totality of  $X$  on  $Y$  has also been calculated and is taken as the sum of the effect which is direct and the effect which is indirect from the independent variable  $X$  to the dependent variable  $Y$ . The same with respect to this simple model is seen to be the effect in totality of the independent variable on the dependent variable which is the effect which is direct + effect which is indirect =  $c + a*b$

## Data Analysis

Using the ordinary least squares (OLS) regression, the path coefficients in the mediation model is being broken down into two regression models:

- (a) Simple regression with  $X$  predicting the mediator;
- (b) Multiple regression with both  $X$  and the mediator predicting  $Y$ .



### (a) Simple Regression with X predicting the Mediator – X is CSR initiatives

Dependent Variable : Employee trust (M)

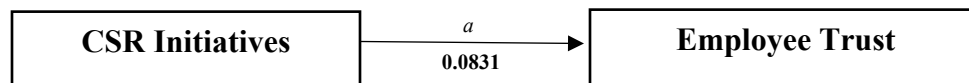
Independent Variable : CSR initiatives (X)

**Table 1 : Model Summary**

R	R-sq	MSE	F	Df1	Df2	P
0.0781	0.0064	1.6245	11.1313	1.0000	1853.0000	<0.001**

**Table 2 : Model 1**

	Coeff	Se	T	P	LLCI	ULCI
Constant	-0.0096	0.0292	-0.3361	0.7367	-0.0681	0.0484
CSR Initiatives	0.0831	0.0253	3.3364	0.0010	0.0344	0.1323



In the simple regression it can be seen that X is a significant and positive predictor of Y ( $b = 0.0831$ ,  $se = 0.0253$ ,  $p < 0.001$ ). This coefficient reflects effect which is direct of X on Y which is within the path model.

### (b) Simple Regression with X and M predicting Y

Dependent Variable : Corporate Image (Y)

Independent Variables : i. CSR Initiatives (X)

ii. Employee Trust (M)

**Table 3 : Model Summary**

R	R-sq	MSE	F	Df1	Df2	P
0.1522	0.0233	1.4864	21.8965	2.0000	1852.0000	<0.0001**

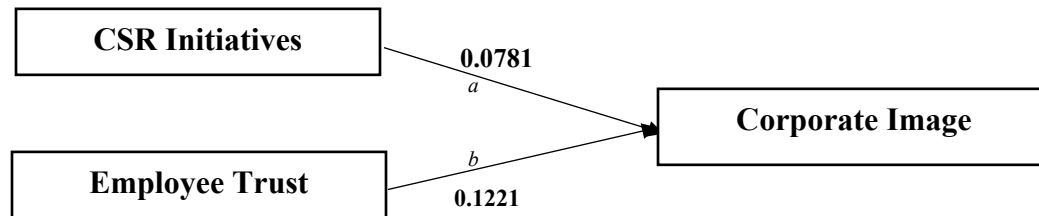




**Table 4 : Model 2**

	<b>Coeff</b>	<b>Se</b>	<b>T</b>	<b>P</b>	<b>LLCI</b>	<b>ULCI</b>
Constant	-0.0077	0.0284	-0.2691	0.7874	-0.0632	0.0478
CSR Initiatives	0.0781	0.0236	3.2585	0.0013	0.0313	0.1251
Employee Trust	0.1222	0.0221	5.4904	0.0010	0.0786	0.1654

The second regression results show that both X ( $b = 0.0781$ ,  $se = 0.0284$ ,  $p < 0.001$ ) and M ( $b = 0.1222$ ,  $se = 0.0221$ ,  $p < 0.001$ ) are significant, positive predictors of Y. These coefficients reflect the effects which are direct of both X and M on Y which is within the path model.



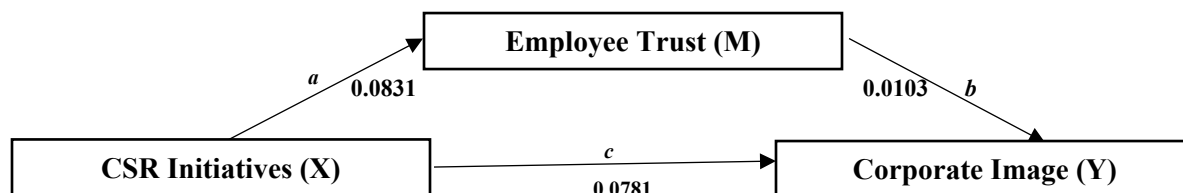
**Table 5 : Direct effect of X on Y**

<b>Effect</b>	<b>Se</b>	<b>T</b>	<b>P</b>	<b>LLCI</b>	<b>ULCI</b>
0.0781	0.0239	3.2589	0.0011	0.0311	0.1250

**Table 6 : Indirect effect(s) of X on Y:**

	<b>Effect</b>	<b>BootSE</b>	<b>BootLLCI</b>	<b>BootULCI</b>
Employee Trust	0.0103	0.0042	0.0029	0.0196

The unstandardized effect which is indirect shown above which is 0.0102 refers to Y calculated as a product of paths a (0.0833) and b (0.1220) from the previous regressions.



**Table 7 : Total effect of X on Y**

<b>Effect</b>	<b>Se</b>	<b>T</b>	<b>p</b>	<b>LLCI</b>	<b>ULCI</b>
0.0342	0.0212	2.2588	0.0001	0.0213	0.0454



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The total effect of X on Y can be computed as direct effect (DE) and indirect (IE) = 0.00239 and 0.0103 = 0.0342. Because zero (null) does not lie between the lower limit and upper bounds of the 95% confidence interval, it can be inferred that the total effect of X on Y is significantly different from zero.

## Findings and Conclusion

In the simple regression it can be seen that X is a significant and positive predictor of Y ( $b = 0.0831$ ,  $se = 0.0253$ ,  $p < 0.001$ ). This coefficient reflects effect which is direct of X on Y which is within the path model.

The second regression results show that both X ( $b = 0.0781$ ,  $se = 0.0284$ ,  $p < 0.001$ ) and M ( $b = 0.1222$ ,  $se = 0.0221$ ,  $p < 0.001$ ) are significant, positive predictors of Y. These coefficients reflect the effects which are direct of both X and M on Y which is within the path model.

The total effect of X on Y can be computed as direct effect (DE) and indirect (IE) = 0.00239 and 0.0103 = 0.0342. Because zero (null) does not lie between the lower limit and upper bounds of the 95% confidence interval, it can be inferred that the total effect of X on Y is significantly different from zero.

It should however, be remembered that different groups of employees have different levels of trust and the employer's images indicate that employees assess their employer's CSR activities from different perspectives. Organizations therefore need to consider a bundle of CSR activities instead of focusing on a single initiative, which could hold minimal value for a majority of employees. In the present context, the research also becomes important as the Indian Companies Act (2013) requires organisations to invest 2% of their income on CSR initiatives.

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## Değişen ve Gelişen Küresel Yaklaşımlar Odağında

### Eğitim – Öğretim Platformunun Oluşturulması

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#### Özet

Ülkemizde eğitim-öğretimin fırsat eşitliğine, erişilebilirliğine ve gelişimine öncülük etmek için bazı çalışmalar yapılmıştır. Gelişen teknoloji çağında internet kullanımının artmasından dolayı öğrencilerin internette geçirecekleri zamanı eğitsel bir platforma yönlendirmek; öğretmenlerinin birbirleriyle yardımlaşmak için kullandıkları sosyal medya hesaplarındaki doküman, etkinlik paylaşımlarını sistematik bir şekilde paylaşılmasını sağlamak önem kazanmıştır. Uzaktan eğitimin hayatımıza getirmiş olduğu eğitim-öğretim platformlarından sonra değişen, gelişmiş ve kendini sürekli yenileyen bir platforma ihtiyaç duyulup duyulmadığı hakkında bir araştırma yapmanın gerekli olduğu gün yüzüne çıkmıştır. Bu sebeple çalışmanın amacı değişen ve gelişen küresel yaklaşımlar odağında eğitim öğretim platformunun oluşturulmasıdır. Bu çalışma nitel araştırma desenlerinden biri olan durum çalışmasıdır. Çalışmanın çalışma grubunu Türkiye'nin Güney Marmara bölgesinde bulunan devlet ilkokullarında öğretmenlik yapan sınıf öğretmenleri (16), devlet ilkokullarında öğrenim gören ilkokul öğrencileri (34), devlet okullarında öğrenim gören öğrencilerin velileri (22) ve devlet üniversitesinde sınıf eğitimi alan öğretmen adayları (40) oluşturmaktadır. Çalışmada sınıf öğretmenleri, sınıf öğretmen adayları, veliler ve ilkokul öğrencileriyle bireysel ve odak grup görüşmeleri gerçekleştirilmiştir. Araştırmada elde edilen veriler içerik analizi yöntemi ile analiz edilmiştir. Nitel araştırma verileri içerik analizi tekniğine uygun olarak çözümlenmiştir. Toplanan veriler ışığında eğitim platformunun



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oluşturulması sağlanmıştır. Araştırmanın sonucunda eğitim platformunun oluşturulmasında gelişen teknoloji çağının getirdikleriyle birlikte eğitimde yenilikçi ilerlemelere öncü olacağı ortaya çıkmıştır. Eğitim platformunun oluşturulması gelişen ve değişen teknoloji çağında öğretmen, öğretmen adayı, veli ve öğrenci koordinasyonunu sağlama konusunda yardımcı olabilecektir.

**Anahtar Kelimeler:** Çevrim içi öğrenme, eğitsel uygulama, küresel yaklaşımlar

*\*Bu çalışma “Değişen ve Gelişen Küresel Yaklaşımlar Odağında Öğretmen – Öğretmen Adayı Koordinasyonlu Eğitim – Öğretim Platformunun Oluşturulması” isimli TÜBİTAK 2209-A Üniversite Öğrencileri Araştırma Projeleri Destekleme Programı tarafından 1919BO12005896 numaralı proje kapsamında desteklenerek gerçekleştirilmiştir.*

## **Establishing an Education and Training Platform with a Focus on Changing and Developing Global Approaches**

### **Abstract**

In our country, some studies have been carried out to lead the equality of opportunity, accessibility and development of education and training. To direct the time that students will spend on the internet to an educational platform due to the increase in internet usage in the age of developing technology; It has become important to ensure that the documents and activity shares in the social media accounts that teachers use to help each other are shared systematically. After the educational platforms that distance education has brought to our lives, it has come to light that it is necessary to conduct research on whether there is a need for a changing, developed and constantly renewing platform. For this reason, the aim of the study is to create an education and training platform in the focus of changing and developing global approaches. This study is a case study which is one of the qualitative research designs. The study group of the study consists of classroom teachers (16) teaching in public primary schools in the South Marmara region of Turkey, primary school students (34) studying in public primary schools, parents of students (22) studying in public schools and teacher candidates (40) receiving classroom education at a state university. In the study, individual and focus group interviews were conducted with classroom teachers, prospective classroom teachers, parents, and primary school



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students. The data obtained in the research were analyzed with the content analysis method. Qualitative research data were analyzed in accordance with the content analysis technique. In the light of the collected data, the training platform was created. As a result of the research, it has been revealed that it will be a pioneer in innovative advances in education with the advancement of technology in the creation of the education platform. The creation of an education platform will help to ensure the coordination of teachers, teacher candidates, parents, and students in the age of developing and changing technology.

**Keywords:** Online learning, educational practice, global approaches

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## 1.GİRİŞ

Eğitim sisteminde değişen temel paradigma ile her geçen gün teknoloji bağlamında gerçekleşen yenilikler karşımıza çıkmaktadır. Teknolojinin kullanılmasıyla devletlerin büyüme yarışı eğitim, siyaset, ekonomi ve politikayı da içine alan bir durum haline gelmiştir. Değişim temsilcisi haline gelebilmiş her kurum sürdürülebilirliğini ve hayatta kalabilmesini sağlamlaştırmış olur. Ülkelerin rekabetleri geçmiş çağlarda sıklıkla savaşların meydana gelmesiyle olmuş olsa da günümüz 21. yüzyılında ülkelerin arasındaki yarışların çoğu gelişmişlikle ön plana çıkmaktadır. Gelişmekte olan ve gelişmiş olan ülkelerde yapılan araştırmalara göre eğitim oldukça önemli bir konuma sahiptir. Eğitimli bireyler kendilerine kazandırdıklarından çok ülkelere ve devletlerine de prestij kazandırmış olacaktırlar. Bu sebeple günümüzde teknolojinin gelişmesiyle birlikte eğitimde de oldukça fazla değişim ve gelişim görülmektedir. Teknoloji kelime anlamıyla; insanın maddi çevresini denetlemek ve değiştirmek amaçlarıyla geliştirdiği araç gereçlerle bunlara ilişkin bilgilerin tümü demektir. Teknolojik gelişmelerle günümüz dünyası sürekli bir devinim halindedir. Teknolojinin devinim halinde ilerlemesi diğer faktörlerin de değişmesine sebep olmaktadır. Bu devinim halindeki faktörlerden biri de eğitimidir.





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Ülkemizde eğitim alanında gelişim ve değişimler yaşanmıştır. 2005 yılına kadar “Davranışçı” yaklaşımı benimseyen eğitim öğretim planımız, 2005 yılından sonra “Yapılandırmacı” yaklaşımın benimsenmesiyle devam etmiştir. Yapılandırmacı öğrenme yaklaşımı; bütün öğrencileri aynı farz edip, onlara grup halinde seslenmeye karşıdır. Bunun yerine öğrencilerin; bireysel ihtiyaçlarına, güçlü ve zayıf yönlerine, ilgilerine ve deneyimlerine önem vermektedir. Eğitim programını bire bir takip etmek yerine, konuları seçmek ve kendi şartlarına uygun şekilde sunmayı tercih etmektedir. Öğrenciler arasında rekabeti desteklemek yerine; bilgiyi ve sorumlulukları paylaşmaya, ayrıca karşılıklı saygıya dayanan bir sınıf atmosferi oluşturmaya çalışmaktadır. Öğretmenin sorumluluğu tek öğretmene ait değildir. Yapılandırmacı öğrenme yaklaşımında öğretmen ve öğrenci tarafından işbirliği içerisinde sorumluluklar paylaşılmaktadır (Jonassen, 1994). Yapılandırmacı öğrenme yaklaşımında öğrenme; insan zihnindeki bir yapılandırma sonucu meydana gelir; yani öğrenme insan zihninde oluşan bir içsel süreçtir (Yaşar, 1998).

Brooks & Brooks (1993) yapılandırmacı öğrenme yaklaşımı benimseyen öğretmenlerin şu davranışları;

- Öğrencilerin fikirlerini destekleme,
- Ham veriler ve kaynakların yanı sıra öğrencilere uygun ve öğrencilerin gereksinimlerine yönelik etkileşimi sağlayan diğer kaynaklar ve materyaller kullanma,
- Öğrencilerin istek ve gereksinimlerine göre dersin içeriğinde ve kullanılan öğretim stratejilerinde değişikliklere gitme,
- Öğrencileri ödevlendirmelerde sınıflama, analiz, tahmin ve yaratıcılık gibi bilişsel kavramlara yer verme,
- Öğrencilere kavramlar hakkında bilgiyi doğrudan vermek yerine onların araştırmasına ve tahminde bulunmalarına olanak sağlama,
- Öğrencilerin kendilerini ifade edebilmelerine ve iletişim güçlerinin gelişmesine yardımcı olma,
- Öğrencilerin gereken sorularla bilgiyi araştırmasına olanak sağlama,



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- Öğrencilerin araştırma sırasında kendilerine ve çevrelerine uygun soruları sordurmalarına yardımcı olma,
- Öğrencilerin merak ve araştırma duygularını arttırmaya yönelik öğrencilere yeni öğretim stratejileriyle bilgileri öğretmeye çalışma, sergileyebildiklerini savunmaktadır.

Eğitim, bireyin ihtiyaç duyduğu bilgiye ulaşabilmesi, güvenilir bilgileri elde edebilmesi, öğretme ve öğrenme faaliyetlerinde verimini artırarak daha fazla teknolojiye nasıl yararlanabileceği hakkında değişime uğraması için yönlendirmektedir. Farklı öğrenme becerilerine sahip bireylere karşı daha başka alternatifler sunmak, ayrıca insanoğlunun bugüne kadar yaşamış olduğu problemler, yetersizlikler ve benzeri sorunlar son yıllarda eğitimcilerin teknolojiyi kullanarak çözüm bulmak istediği konulardan bazılarıdır (Uzoğlu ve Bozdoğan, 2015).

Eğitimi geleceğe uyumlu hale getirebilmek ve diğer ülkelerden geri kalmamak hatta ülkelere yön veren bir boyuta atlayabilmek için eğitim sektöründe de gelişmeye ve değişmeye ihtiyacı vardır. Dünyada var olan rekabet sonucunda her alanda yarışan ülkelerin önüne geçebilmemiz için bizlerin iyi bir eğitim alması ve iyi bir eğitim veren öğretmenleri yetiştirilebilmesi için öncülük etmemiz şarttır. Örneğin bugünün eğitim müfredatında ve programında öğrencilere kazandırılması gereken kazanımlarla geçmişteki kazanımlar aynı değildir. Bizler artık öğrencilerin kendilerini donanımlı hale getirebilmesi için öncül çalışmalar da bulunması gereken eğitimcilerdenizdir. Bu doğrultuda da günün ihtiyaçlarına göre kendisini sürekli yenileyen, dünyadaki gelişmelere karşı kayıtsız kalmayan öğrencilerin var olması oldukça önemlidir.

Devlet Planlama Teşkilatı (2006-2010) raporuna göre “Bilgi ve iletişim teknolojileri eğitim sürecinin temel araçlarından biri olacak ve öğrencilerin, öğretmenlerin bu teknolojileri etkin kullanımı sağlanacaktır.” hedefi yer almaktadır. Bu gibi ifadelerle birlikte kişilerde kendilerini geliştirme isteklerinin ve gereksinimlerinin getirdiği bazı sorumlulukların yerine getirilmesi için devletler kişilere iyi bir eğitim vermek durumunda kalmıştır. Kişilere verilen eğitimin donanımlı olması ve çağın ihtiyaçlarına hitap etmesi gerekmektedir. Bunun içinde eğitim de sürekli bir değişim ve gelişim içerisine girmek durumunda kalmıştır. Bu değişimler teknolojinin de yardımıyla eğitimde kullanılan



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farklı yöntemlere farklı alternatiflere yol açmaktadır. Türkiye’de eğitim için kullanılan teknolojiler ve teknolojik cihazlar şunlardır:

- Fatih Projesi
- EBA Platformu
- Bilgisayar Destekli Öğrenme
- Uzaktan Eğitim

Bilgisayar destekli eğitim, günümüzde eğitimin bir dalı olarak ta nitelendirilmekte ve kendi alt başlıklarında da birçok dala ayrılmaktadır. Bilgisayarla Öğretim Programları (BÖP) birbiriyle çok fazla benzerlik göstermektedir. Bu benzerlikler taşıdıkları görev, fonksiyon kullanım biçimleri ve amaçları yönünden ele alınabilmektedir. Bilgisayar destekli eğitim, öğrencinin derse olan ilgisini arttırabilmektedir. Farklı uygulamaların kullanılması farklı stratejilerin kullanılması (örneğin: oyun ile eğitim) öğrencinin derse katılımını arttırmaktadır. Bilgisayar destekli öğrenmede kullanabilecek farklı alternatiflerin olması öğretmenlerin de yeni yöntemler denemesine olanak sağlayacaktır (örnek: WEB 2.0 Araçları). Tüm bunların yanı sıra bilgisayar destekli eğitimin bazı sınırlılıkları da mevcuttur. Bu sınırlılıkları şu şekilde:

- Bilgisayar teknolojisine erişimin zor olması,
- Öğrenci-öğretmen göz temasının kurulamıyor olması,
- Bilgisayar destekli eğitim için hazırlanan çalışmaların hata içermesi ve hatanın anlık olarak düzeltilemiyor olması,
- Bilgisayar destekli eğitimde eleman eksikliği oluşması ve yeterli donanıma sahip kişiler olmaması şeklinde örneklendirebiliriz.

Uzaktan eğitimi geleneksel eğitim sisteminden ayıran temel özellikler incelendiğinde; öğretim sürecinde ağırlıklı olarak öğretmen ve öğrencinin coğrafi bakımdan ayrı olması, öğretmen ve öğrencinin etkileşimini arttıracak ve ders içeriğini aktaracak medya araçlarının kullanılması, öğretmen ve öğrencinin etkili iletişiminin sağlanması, yer ve zaman engeli olmaması, öğrencinin kendi öğrenme hızı ve öğrenme stiline göre öğrenmesi, eğitim alacak öğrencinin dersi eş zamanlı/ eş zamanlı olmayan



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şekilde alabilmesi ve sürekli eğitim imkanı sağlayan etkili bir araç olması görülmektedir (Yurdakul, 2011). Bu bilgilerle birlikte uzaktan eğitiminin iki değişkenine bağlı olarak bir çerçevede çizilmiştir. Bu çerçeve doğrultusunda uzaktan eğitim kavranmasında dört yaklaşım içermektedir. Bunlar:

- Aynı zaman- aynı mekânda eğitim (geleneksel öğrenme)
- Farklı zaman- aynı mekânda eğitim (bireysel öğrenme)
- Aynı zaman- farklı mekânda eğitim (senkron öğrenme)
- Farklı zaman-farklı mekânda eğitimdir (asenkron öğrenme)

Öğrenme Ortamları kavramı kullanımına göre çok çeşitli anlamlar taşımaktadır. Öğrenme ortamlarının etki ettiği boyutlar oldukça fazladır. Öğrenme ortamının etkili bir şekilde düzenlenebilmesi için çok fazla faktör dikkate alınmalıdır. Bu faktörler öğrencilerin sınıftaki psikososyal yapılarını ortama nasıl ayak uydurabileceklerini ortam da ne gibi değişiklikler yapılarak öğrencilerin derslerde daha sosyal bir yapıda etkin olabileceği konusunda da bizlere yarar sağlamaktadır Öğrenme ortamları yalnızca sınıfta var olan ortamlar değil sınıf dışı etkinliklerde de var olabilen bir kavramdır. Sınıf içi ve sınıf dışı öğrenme ortamlarında öğrencilerin oturma düzenleri, etkinliğin süresi, etkinlikteki yerleşme sınıfın boyasının rengi, sınıfın aldığı ışık ve sınıftaki materyallerin konumları dahi önemli bir konudur.

Öğrenme ortamları ve öğrenme kazanımları arasındaki ilişkiyi araştıran birçok çalışmada öğrencilerin ruh halleri, sınıfın düzeni, sınıfın temizliği, sınıftaki sesin dağılması, sınıf içindeki kullanılan araç gereçlerin konumunun önemi vurgulanmaktadır. Bu durumlar öğrenme ortamındaki öğrenme sürecini destekleyen veya bu süreci zorlaştırabilen faktörler olabilmektedir.

Çevrimiçi öğrenme ortamlarının son on yıl içerisinde internetteki gelişmelerin, bilgi iletişim teknolojisi ile donatılmış öğrenme ortamlarına etkisinin sonucu olduğunu savunulmaktadır. Walker ve Fraser'e (2005) göre, çevrimiçi öğrenme ortamları, yüz yüze ve uzaktan öğrenmenin bir araya getirildiği karma öğrenmeden, tamamen online ortamda gerçekleştirilen öğrenme aktivitelerini kapsayan internet-tabanlı uzaktan eğitim ve öğrenme ortamları araştırmalarının birleşimidir.



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Çevrimiçi öğrenme ortamlarında, eğitim ve öğretim bilgi ve iletişim teknolojilerinin internete dayalı kullanımı ile gerçekleşmektedir (Pearson ve Trinidad, 2005).

Çevrimiçi öğrenme ortamları, uluslararası düzeyde oldukça yaygın kullanılmaktadır. Özellikle gelişmiş ülkelerdeki bireyler birden çok alanda ilgi duydukları eğitimleri alabilmek adına bu süreci daha aktif kullanmaktadır. Ülkemizde ise COVID-19 süreciyle birlikte varlığını hissettiğimiz çevrimiçi öğrenme ortamları çok yaygın kullanılmamaktadır.

Çevrimiçi öğrenme ortamlarında yapılan eğitsel çalışmalar giderek artmakta olsa da ülkemizde bu konuda yeterli alt yapı bulunmamaktadır. Giderek gelişen ve değişen teknoloji karşısında ülkemizde de çalışmaların, alt yapının gelişeceği aşikardır. Tüm bu bilgiler göz önünde bulundurulduğunda teknolojinin gelişmesinin yanı sıra eğitiminde değişim ve gelişim göstermesi gerektiği sonucu oluşmaktadır. Bu doğrultuda eğitim ve öğretimin değişen ve gelişen teknolojide bireylerin istek, arzu ve ihtiyaçlarını karşılayabilmesi bakımından gelişmesi teknolojiyi kullanarak gerçekleşebilmektedir. Teknolojinin olumlu etkisini eğitimde de aktif şekilde kullanabiliyor olmak gelişen ve değişen dünyamız bireylerine daha fazla hitap edecektir.

Bu araştırmada, eğitimin teknolojiyi de kullanarak gelişmesine olanak sağlayarak daha donanımlı, bilgili, 21. yüzyılın gereksinimlerine yön verebilen bireylerin yetişmesine imkân tanımaktadır. Böylelikle öğrenim stratejilerinin geliştirilmesine yön verebilecek çalışmaların yapılmasına yardımcı olabilecek uygulamanın öğretmen, öğrenci, öğretmen adayı ve velilerin koordinasyonlu etkileşimiyle sağlayabilme durumu incelenmiştir. Öğretmen, öğretmen adayı, öğrenci ve veli koordinasyonlu eğitim uygulamasının sağlayabileceği katkılar kişilerin subjektif görüşlerin alınmasıyla sağlanmaya çalışılmıştır.

## **1.2. Araştırmanın Amacı**

Araştırma önerisinin amacı günümüz şartlarında internet aracılığıyla bazı sosyal medya hesaplarından öğretmen ve öğretmen adaylarının etkinliklerini ve sunumlarını paylaşarak birbirleriyle eğitim-öğretim açısından yardımlaşmasını daha kolay ve daha sistematik bir şekilde sunulmasına yardımcı olmak, öğrencilerin internetteki içeriklere olan meraklarını eğitim-öğretim uygulamalarına



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yönlendirmeye çalışmak ve velilerin de bu durumları görmesini sağlayarak öğrencilerinin durumlarını yakından takip etmelerini sağlamaktır. Böylelikle gelişen teknolojik çağda öğretmen ve öğretmen adaylarının sistematik olarak internet aracılığıyla fikir alışverişi yapması sağlanacak eğitim-öğretim etkinliklerinde daha farklı tekniklere ve yöntemlere yer verilebilecektir. Öğrencilerde diğer internet sitelerinden eğitim-öğretim için hazırlanmış bu platformda eğitsel oyunlar, etkinlikler ve videolar izleyebilecektir. Veliler öğrencilerinin katıldığı etkinlik videolarını, çalışmalarını ve eğitsel oyunlarını gözlemleyebilecek internet aracılığıyla öğrencilerinin durumlarını takip edebileceklerdir. Genel olarak araştırma sonucunda elde edilmesi beklenen durum böyle bir platformun olması öğrencilerin internet merakını daha eğitimsel durumlara çekebilmek ve öğretmenlerinin farklı sosyal medya platformlarında birbirlerine yardımcı olabilmek için etkinlik dokümanlarını paylaşmasını sistematik bir şekilde gerçekleştirerek öğretmenlerin yardımlaşmasını da daha etkili hale getirebilmektir.

Öğretmenlerin ve öğretmen adaylarının kazanımlara uygun etkinlik planlamalarında, sunum hazırlamalarında, farklı teknik ve yöntemlerin kullanılmasında zorlandıkları yerlerde meslektaşlarıyla yardımlaşabilmek için internetten yararlandıkları, sosyal medya hesaplarında birbirleriyle paylaşım yaptıkları gözlemlenmektedir. Bu paylaşımların daha sistematik bir şekilde paylaşılıyor olması öğretmenler ve öğretmen adayları için daha yararlı olacaktır. Belli kategorilerde dokümanların olması öğretmenlerin fikir alışverişi yapmalarını sağlayacak farklı yöntem ve teknikleri kullanmalarını teşvik edebilecektir. Böylelikle bu araştırmada öğrencilerin merakını yararlı ve işlevsel bilgilere yönlendirebilmek için oluşturulan platformda öğretmenlerin, öğretmen adaylarının, velilerin ve öğrencilerin görüşleri alınarak ortaya konmuştur.

Alan yazın incelendiğinde öğrencilerin ve öğretmenlerin böyle platformlar aracılığıyla ne gibi eğitsel etkinliklerde ne kadar süre geçirdikleri hakkında çalışmalar yapılmış olsa da bu şekilde yeni bir platform oluşturma fikriyle yapılmış bir araştırma bulunmamaktadır. Böyle bir platformun oluşturulması da gelişen teknolojiye öğretmen/öğrenci/veli koordinasyonunu sağlama konusunda yardımcı olabilecektir. Tüm bunlar göz önünde bulundurulduğunda bu araştırma için problem cümlesi “Gelişen teknoloji koşulları göz önünde bulundurulduğunda öğretmen, öğrenci, öğretmen adayı ve





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velilerin kullanması için oluşturulan eğitim-öğretim etkinliklerinin ve paylaşımlarının olduğu web tabanlı bir platform nasıl olmalıdır? olarak belirlenmiştir. Bu bağlamda çalışmanın alt problemleri şu şekildedir:

1. Öğretmenlerin birbiriyle yardımlaşmasını sağlayabileceği bu platformun içeriği nasıl olmalıdır?
2. Bu platform öğrencilerin eğitsel etkinliklere, videolara ve oyunlara teşvik edilmesini nasıl sağlayabilir?
3. Platformun hazırlanması ve kullanılabilir durumlara getirilmesi sağlandıktan sonra öğretmen/öğrenci/öğretmen adayı/veli olarak platformun kullanım durumu ne olur? şeklinde belirlenmiştir. Problem ve alt problem cümlelerine verilen cevaplar yüz yüze görüşler alınarak değerlendirilerek araştırma konusu bakımından diğer çalışmalardan farklı bir bakış açısı sunacaktır.

### 1.3. Araştırmanın Önemi

Hayatın her alanında etkisini gösteren bilgi ve iletişim teknolojileri eğitim hayatında da yer almakta ve aktif olarak kullanılmaktadır. Yaşanan gelişmelerle birlikte teknolojinin eğitimde kullanımı hem bireysel hem sosyal nedenlerden dolayı kaçınılmaz bir hale gelmiştir (Usta, 2011). Çevrimiçi öğrenme, bu çeşitlenmenin oluşmasıyla birlikte gün yüzüne çıkmıştır. Çevrimiçi öğrenme eğitim öğretimin en popüler yöntemlerinden biridir. Çevrimiçi öğrenme, öğrenme sürecinde öğrenme kaynaklarına erişebilmek; içerik, öğretici ve diğer öğrenenlerle etkileşim kurabilmek ve öğrenme süreci boyunca destek alabilmek için İnternet'in kullanılması olarak ifade edilmiştir. Çevrimiçi öğrenme zamandan ve mekândan bağımsız öğrenme (Vrasidas ve MsIsaac, 2000), kolaylık sağlayan öğrenme (Poole, 2000), esneklik sağlayan öğrenme (Chizmar ve Walbert,1999), öz-düzenleme becerisi geliştirebilen öğrenme (Usta, 2011), işbirlikli öğrenme gibi konularda destekleyicidir. Çevrimiçi öğrenmede otokontrol mekanizması aktifleşir ve öğrenme sürecini öğrencinin kendinin planlaması gerekmektedir. Bu nedenle öğrenci kendi sorumluluklarını alabilmekte ve çevrimiçi eğitim bu gibi faydalar sağlamaktadır.

Günümüzde gelişmekte olan teknolojiye bağlı olarak kişilerde internet bağımlılığı ve internette geçirilen zaman süresi de artmaktadır. Çocukların internet oyunlarına, internetteki videolara ve internet



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ortamında gördükleri yaşantılara özendikleri gözlemlenmektedir. Kocasinan Rehberlik ve Araştırma Merkezi'nin hazırlamış olduğu "Güvenli İnternet Kullanımı Rehberi" adlı çalışma Türkiye'deki öğrencilerin %30'unun her gün yarım saatten fazla olacak şekilde ders yapma dışı amaçlarla bilgisayar kullandığı sonucuna varılmıştır. Çocukların internette geçirdikleri bu sürede, onlar için cazip olan dört başlıca seçenek bulunmaktadır. Bunlar çocukların aktif olarak kullandıkları web siteleri, elektronik posta, bilgisayar oyunları sohbet odaları ve günümüzde oldukça popüler kullanılan sosyal medyadır. Bu ortamların çocuklara sağladığı avantajlar da vardır elbette fakat kontrol edilmediği takdirde, sakıncaları da bulunduğu ifade edilmektedir.

Bununla birlikte öğretmenlerin ve öğretmen adaylarının kazanımlara uygun etkinlik planlamalarında, sunum hazırlamalarında, farklı teknik ve yöntemlerin kullanılmasında zorlandıkları yerlerde meslektaşlarıyla yardımlaşabilmek için internette yararlandıkları, sosyal medya hesaplarında birbirleriyle paylaşım yaptıkları gözlemlenmektedir. Bu paylaşımların daha sistematik bir şekilde paylaşılıyor olması öğretmenler ve öğretmen adayları için daha yararlı olacaktır. Belli kategorilerde dokümanların olması öğretmenlerin fikir alışverişi yapmalarını sağlayacak farklı yöntem ve teknikleri kullanmalarını teşvik edebilecektir. Böylelikle bu araştırmanın yapılması doğrultusunda öğrencilerin internete olan merakını yararlı sitelere yönlendirebilmek için bir platform yapılmasının yararlarının neler olacağı ve zararlarının neler olacağı öğretmenlerin, öğretmen adaylarının, velilerin ve öğrencilerin görüşleri alınarak değerlendirilecektir. Öğretmen ve öğretmen adaylarının böyle bir platformdan nasıl yararlanabilecekleri ve böyle bir platformun olmasının ne gibi avantajlar sağlayabileceğinden bahsedilebilecektir. Öğrencilerin ve öğretmenlerin internet aracılığıyla ne gibi eğitsel etkinliklerde ne kadar süre geçirdikleri hakkında çalışmalar yapılmış olsa da böyle yeni bir platform oluşturma fikriyle yapılmış bir araştırma bulunmamaktadır. Araştırmanın yapılması ve araştırmanın beklenen sonuçlarla neticelenmesi teknolojik anlamda da yeni bir yerli platform üretilmesine yardımcı olabilecektir. Böyle bir platformun oluşturulması da gelişen teknolojide öğretmen/öğrenci/veli koordinasyonunu sağlama konusunda yardımcı olabilecektir.



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Bu çalışma; 2021-2022 eğitim öğretim döneminde toplanan verilerin kullanılmasıyla ve Türkiye'nin Güney Marmara bölgesinde bulunan devlet üniversitesinde öğrenim gören ilkökul öğretmen adayları, devlet ilkökullarında öğretmenlik yapan sınıf öğretmenleri bu ilkökulda öğrenim gören ilkökul öğrencileri ve ilkökul öğrencilerinin velileriyle sınırlıdır.

## 2.YÖNTEM

### 2.1. Araştırmanın Deseni

Bu çalışmanın nitel araştırma desenlerinden biri olan durum çalışması deseni kapsamında yürütülmesi planlanmıştır. Durum çalışmalarının en önemli özelliği, bir ya da birkaç durumun derinlemesine araştırılmasını sağlayarak, bir duruma ilişkin faktörleri bütüncül bir yaklaşımla ele alması, durumu nasıl etkilediğini ve etkilerini ortaya koymasındır. Durum çalışmaları aynı zamanda güncel bir olgunun gerçek bağlamında araştırıldığı çalışmalardır (Stake, 1995; Yin, 2003). Durum çalışmalarında genellikle bir konuya ilişkin var olan durumun derinlemesine analiz edilmesi ve betimlenmesi amaçlanmaktadır. Bu çalışmada da değişen ve gelişen küresel yaklaşımlar odağında nasıl bir eğitim-öğretim platformu oluşturulması gerekir? sorusu baz alınmış ve bu doğrultuda araştırma şekillendirilmiştir.

### 2.2. Katılımcılar”

Çalışmanın evrenini Türkiye'nin Güney Marmara bölgesinde bulunan sınıf öğretmenleri, sınıf öğretmeni adayları, ilkökul öğrencileri ve öğrencilerin velileri oluşturmaktadır. Bu bağlamda araştırmanın çalışma grubunda devlet ilkökullarında öğretmenlik yapan 16 sınıf öğretmeni, bu bölgedeki devlet üniversitesinde sınıf eğitimi bölümünde bulunan 40 öğretmen adayı, yine bu bölgede bulunan devlet ilkökulunda öğrenim gören 34 ilkökul öğrencisi ve bu devlet okulunda öğrencisi bulunan 22 veli oluşturmaktadır.

Çalışma grubunun belirlenmesinde amaçlı örnekleme çeşitlerinden biri olan ölçüt örnekleme çeşidi kullanılmıştır. Amaçlı örnekleme; derinlemesine araştırma yapabilmek amacıyla çalışmanın amacı bağlamında bilgi açısından zengin durumların seçilmesidir. Amaçlı örnekleme çeşitlerinden olan ölçüt örnekleme ise; örneklemin problemle ilgili olarak belirlenen niteliklere sahip kişiler, olaylar,



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nesneler ya da durumlardan oluşmasıdır (Yıldırım ve Şimşek, 2011). Ölçüt örneklem için belirlenen ölçütler;

- Merkez ilçe ilkokullarında görev yapan sınıf öğretmeni olmak,
- Merkez ilçe ilkokullarında, ilkokul öğrencisi olmak,
- Okullarda fiilen derslere girmek (norm fazlası olmamak),
- Lisans mezuniyeti sınıf öğretmenliği bölümü olmak,
- Alan değişikliği ile sınıf öğretmenliğine geçiş yapmamış olmak,
- Merkez ilçe ilkokullarında, ilkokula giden öğrenci velisi olmak ve
- Temel eğitim bölümü Sınıf Eğitimi Anabilim dalında öğrenim gören öğretmen adayları olmak.

Sınıf öğretmenlerinin demografik özellikleri şu şekilde tablolandırılmıştır:

**Tablo 1. Öğretmenlerin cinsiyet dağılımı**

Cinsiyet	f
Erkek	5
Kadın	11
N	16

Görüşme yapılan sınıf öğretmenlerinin 11'inin kadın, 5'inin erkek olduğu görülmektedir.

**Tablo 2. Öğretmenlerin mesleki kıdem dağılımı**

Mesleki kıdem	f
0-5 yıl	-
6-10 yıl	-
11-15 yıl	2
16-20 yıl	3
21-25 yıl	7
26+ yıl	4
N	16

Sınıf öğretmenlerinin mesleki kıdemlerine bakıldığında 11-15 yıl kıdeme sahip 2 öğretmen, 16-20 yıl mesleki kıdeme sahip 3 öğretmen, 21-25 yıl mesleki kıdeme sahip 7 öğretmen, 26 yıl ve üstü mesleki kıdeme sahip 4 öğretmen olduğu görülmektedir. Sınıf öğretmeni adaylarının demografik özellikleri Tablo 3'te verilmiştir.



**Tablo 3. Öğretmen adaylarının cinsiyet dağılımı**

Cinsiyet	f
Kadın	30
Erkek	10
N	40

Tablo 3'te görüldüğü üzere 30 kadın öğretmen adayı ve 10 erkek öğretmen adayı ile görüşmeler gerçekleştirilmiştir.

**Tablo 4. Öğretmen adaylarının akademik başarı ortalaması**

Başarı ortalaması	f
0.50-1.50	0
1.50-2.50	0
2.50-3.50	27
3.50+	13
N	40

Öğretmen adaylarının başarı ortalamalarına bakıldığında 27 öğretmen adayının 2.50-3.50 başarı ortalamasına sahip olduğu, 13 öğretmen adayının ise 3.50 başarı ortalamasına sahip olduğu görülmektedir. Velilerin görüşleri alınırken öncelikle demografik özellikleri göz önünde bulundurulmuş ve cinsiyet dağılımları Tablo 5'te verilmiştir.

**Tablo 5. Velilerin cinsiyet dağılımı**

Cinsiyet	f
Erkek	5
Kadın	17
N	22

Velilerin cinsiyet dağılımlarına baktığımızda 17 kadın veli, 5 erkek veli olduğu görülmektedir.

Tablo 6'da araştırmaya katılan öğrencilerin cinsiyet dağılımları verilmiştir.

**Tablo 6. Öğrencilerin cinsiyet dağılımı**

Cinsiyet	f
Erkek	16
Kadın	18
N	34

Tablo 6'da öğrencilerin cinsiyet dağılımlarında ise 16 erkek öğrenci, 18 kız öğrenci olduğu görülmektedir.



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## 2.3. Verilerin Toplanması

Görüşme, nitel arařtırmada en yaygın kullanılan tekniktir. Görüşme insanların algılarını, deneyimlerini, düşüncelerini ve duygularını ortaya çıkarmada önemli bir unsurdur (Yıldırım ve Şimşek, 2011). Bununla birlikte görüşme; arařtırmanın arařtırma konusu kapsamındaki kişilere yönelik algı dünyasını zenginleştirir. Arařtırmanın amacına uygun olarak görüşülen bireylerin deneyimlerini detaylı olarak ortaya koymalarını da sağlar. Çalışmada amaca uygun olduđu düşünülerek sınıf öğretmenleri, sınıf öğretmen adayları, veliler ve ilkokul öğrencileriyle; bireysel ve odak grup görüşmeleri gerçekleştirilmiştir. Krueger (2004)'in belirttiđi gibi odak grup görüşmesi, bireylerin deneyim, algı, duygu ve düşüncelerini özgürce ifade edebileceđi bir ortamda özenle planlanmış bir münazara olarak ifade edilmektedir.

Arařtırmada veri toplama aracı olarak yarı yapılandırılmış ve yönlendirici olmayan görüşme tekniđi kullanılmıştır. Arařtırmada hem bireysel hem de grup görüşmelerinde sınıf öğretmenlerine, sınıf öğretmeni adaylarına, velilere ve ilkokul öğrencilerine sorulacak olan görüşme sorularının hazırlanmasında; konuyla ilgili alan yazıları taranmıştır. Hazırlanan form uzman görüşüne sunulmuştur. Sınıf öğretmenleri, sınıf öğretmeni adayları, veliler ve ilkokul öğrencilerinin sürece katılımları gönüllülük esasına dayalı olarak gerçekleştirilmiştir.

Görüşme boyunca kişilere herhangi bir yönlendirmede bulunulmamış kişilerin düşüncelerini özgürce ifade edilmeleri beklenmiştir. Kişilerin konuyla ilgili soruları arařtırmanın amacını açıklayacak şekilde cevaplandırılmış ve kişilere gerekli açıklamalar dışında arařtırmanın avantajına ya da dezavantajına olacak bilgilerin verilmesinden kaçınılmıştır. Arařtırmanın yapılması sırasında doğal ortamlarda fiziksel olarak bulunmak arařtırmanın gidişatı için oldukça önemlidir. Deđişen ve gelişen küresel yaklaşımlar odađında eğitim öğretim platformunun oluşturulması için yapılan çalışmada da arařtırmacı olarak fiziksel ortamlarda bizzat bulunulmuştur. Öğretmenler, öğretmen adayları, veliler ve ilkokul öğrencilerinin görüşleri alınırken gelen sorulara göre not alınmış ve geribildirimler verilmiştir.





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## 2.4. Verilerin Analizi

Araştırmada elde edilen veriler içerik analizi yöntemi ile analiz edilmiştir. Nitel araştırma verileri içerik analizi tekniğine uygun olarak çözümlenmiştir. Araştırma için kişilerin cevaplandığı görüşme soruları bir araya getirilmiş ve veri analizi sırasında temalara uygun olacak şekilde kodlanarak analiz edilmiştir. Odak grup görüşmesinde önemli olan sayılar değil katılımcıların ne söylediğidir (Creswell, 1998; Fern, 2001; Kitzinger, 1995; Süral, 1995). Araştırmada sınıf öğretmenlerine, sınıf öğretmeni adaylarına, ilkokul öğrencilerine ve ilkokulda eğitim alan öğrencilerin velilerine yönelik olan görüşme sorularından elde edilen verilerinin çeşitli ölçütler dikkate alınmaktadır. Bu ölçütler inandırıcı olma, aktarılabirlik ve doğrulanabilirlik şeklinde belirlenmiştir (Lincoln ve Guba, 2000).

## 2.5. Araştırmanın Güvenirliğı ve Geçerliliğı

Nitel araştırmalar sırasında kişilerin görüşleriyle hareket edilirken araştırmanın güvenirliğı ve geçerliliğı de göz önünde bulundurulmaktadır. Bu araştırmanın güvenirliğı ve geçerliliğı için kişilere yönlendirilen görüşme sorularını araştırmacı hazırlamış ve danışmanının görüşünü almıştır. Bununla birlikte yönlendirilen görüşme sorularına kişilerin tüm dürüstlüğü ile cevaplandırması için hiçbir yönlendirmede bulunulmamış kişilerin herhangi bir özel bilgisinin görüşme kağıtlarına ya da herhangi bir dokümana not edilmesi talep edilmemiştir. Katılımcılar görüşme sorularına verdikleri cevaplarda özgür bırakılmıştır. Araştırmanın güvenirliğı ve geçerliliğı bu bağlamlarda gerçekleştirilmeye çalışılmıştır. Bu bağlamda nitel bir araştırmada güvenirlik, kodlayıcılar arası görüş birliğine dayanmaktadır (Creswell, 1998). Araştırmada araştırmacıların kodlamadaki kararlılığı izlenmiş %93 uyum saptanmıştır. Güvenirlik konusunda Miles ve Huberman'a (2015) göre %80 uyum yeterli olmaktadır.

## 2.6. Araştırmacıların Rolü

Araştırmanın tüm çalışmalarında araştırmacılar objektif olarak hareket etmiş, katılımcıların görüşme sorularına vermiş olduğu cevaplarda herhangi bir yönlendirme yapmaktan kaçınmış ve araştırmadaki örneklem grubuyla herhangi özel bir bağ kurmamıştır. Araştırma boyunca kişilerle



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sadece görüşme sorularına cevap vermeleri adına iletişime geçilmiş ve daha sonrasında ilgili kaynaklar taranarak içerisinde bulunduğu araştırmayı karşılaştırmalı olarak yürütmeye devam etmiştir.

### 3. Bulgular

Bu bölümde, değişen ve gelişen küresel yaklaşımlar odağında eğitim-öğretim platformunun oluşturulması; (1) sınıf öğretmenleri, (2) sınıf öğretmeni adayları, (3) ilkokulda öğrencisi bulunan veliler, (4) ilkokul öğrencileri bakımından avantajlı ve dezavantajlı durumların göz önüne serilmesi hakkında ilgili verilerin analizi yapılarak araştırmacının notlarıyla birlikte ortaya konulmuştur. Sınıf öğretmenleriyle yapılan görüşmeler de öğretmenlere ilgili konu hakkında görüşmeler yapılmış ve onların vermiş oldukları cevaplarla konuyla alakalı temalar oluşturularak gruplandırılmalar yapılmış sınıf öğretmenlerinin görüşleri alınmıştır.

Araştırma sorularına sınıf öğretmenlerinin vermiş olduğu cevaplar temalara uygun şekilde kodlanmış ve verilen cevaplar şu şekilde tablolaştırılmıştır. Sınıf öğretmenlerinin gelişen teknoloji koşulları göz önünde bulundurulduğunda öğretmen, öğrenci, öğretmen adayı ve velilerin kullanması için yapılmış eğitim öğretim etkinliklerinin ve paylaşımlarının olduğu platformunun içeriği hakkındaki görüşleri Tablo 7’de verilmiştir.

**Tablo 7. Sınıf Öğretmenlerinin Eğitim Öğretim Etkinliklerinin ve Paylaşımlarının Olduğu Platformunun İçeriğine İlişkin Görüşleri**

Kodlar	f
Kolay kullanım	8
Ulaşılabilirlik	7
Eğitici-öğretici eğlenceli etkinlikler	6
Gelişim seviyelerine uygun içerikler	6
Kullanıcıya özel girişler	6
Açık ve anlaşılır içerik	4
Ücretsiz	2
İlgi çekici materyaller	1
Çevrimdışı kullanım	1
Bilgi verici içerikler	1
Ders tekrar videoları	1
Kazanımlara uygun etkinlikler	1



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Tablo 7 incelendiğinde sınıf öğretmenleri eğitim öğretim etkinliklerinin ve paylaşımlarının olduğu platformunun içeriğinde genellikle kolay kullanımı olan (f=8), ulaşılabilir nitelikte (f=7), eğitici-öğretici eğlenceli etkinlikler (f=6) ile öğrencilerin gelişim seviyelerine uygun etkinlikler (f=6) olması gerektiğini belirtmişlerdir. Sınıf öğretmenlerinin gelişen teknoloji koşulları göz önünde bulundurulduğunda öğretmen, öğrenci, öğretmen adayı ve velilerin kullanması için yapılmış eğitim öğretim etkinliklerinin ve paylaşımlarının olduğu platformunu kullanmayı teşvik etme konusundaki görüşleri Tablo 8’de verilmiştir.

**Tablo 8. Sınıf Öğretmenlerinin Eğitim Öğretim Etkinliklerinin ve Paylaşımlarının Olduğu Platformu Kullanmayı Teşvik Etmeye İlişkin Görüşleri**

Kodlar	f
Anlatarak	6
Paydaşlarla işbirliği yapmak	6
Haber, basın ve sosyal medya kanalları aracılığıyla duyurarak	4
İçerik uygunluğuna dikkat ederek	1
Uygulamalı olarak	1
Teşvik ederek	1
Uygun içerikleri kullanarak	1

Tablo 8 incelendiğinde sınıf öğretmenleri eğitim öğretim etkinliklerinin ve paylaşımlarının olduğu platformu teşvik etme konusunda sıklıkla anlatmayı (f=6), paydaşlarla işbirliği yapmayı (f=6) gerektiğini belirtmişlerdir. Sınıf öğretmenlerinin gelişen teknoloji koşulları göz önünde bulundurulduğunda öğretmen, öğrenci, öğretmen adayı ve velilerin kullanması için yapılmış eğitim öğretim etkinliklerinin ve paylaşımlarının olduğu platformu kullanma konusundaki görüşleri Tablo 9’da verilmiştir.



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**Tablo 9. Sınıf Öğretmenlerinin Eğitim Öğretim Etkinliklerinin ve Paylaşımlarının Olduğu Platformu Kullanma Nedenlerine İlişkin Görüşleri**

Kodlar	f
Öğrencilerin ilgisini çekmek	4
Konuyla uyumlu etkinlikler kullanmak	3
İhtiyaçları gidermek	3
Teknolojiye uyum sağlamak	2
Dersi pekiştirmek	2
Zengin içeriklere yer verilmesinden kaynaklı	1
Akıllı tahtaya uyumlu olduğundan	1
Destek sağlamak	1
Bilgiye ulaşmak	1
Konu tekrarı yaptırmak	1

Tablo 9’da sınıf öğretmenleri eğitim öğretim etkinliklerinin ve paylaşımlarının olduğu platformu kullanma nedenlerine ilişkin görüşlerinde sıklıkla öğrencilerin ilgisini çekmek (f=4), konuyla uyumlu etkinlikle kullanmada (f=3) ve eğitim ihtiyaçlarını gidermede (f=3) gerektiğini belirtmişlerdir. Sınıf öğretmenlerinin gelişen teknoloji koşulları göz önünde bulundurulduğunda öğretmen, öğrenci, öğretmen aday ve velilerin kullanması için yapılmış eğitim öğretim etkinliklerinin ve paylaşımlarının olduğu platformu ne kadar sıklıkla kullandıkları konusundaki görüşleri Tablo 10’da verilmiştir.

**Tablo 10. Sınıf Öğretmenlerinin Eğitim Öğretim Etkinliklerinin ve Paylaşımlarının Olduğu Platformu Kullanma Sıklıklarına İlişkin Görüşleri**

Kodlar	f
Sürekli	5
İhtiyaç duyduğunda	3
Zaman denetimli	2
Haftada birkaç kez	1
Sıklıkla	1

Tablo 10’da sınıf öğretmenleri eğitim öğretim etkinliklerinin ve paylaşımlarının olduğu platformu kullanma sıklıklarına ilişkin sürekli (f=5), ihtiyaç duyduğunda (f=3) gerektiğini belirtmişlerdir.



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Sınıf öğretmenlerinin ankete vermiş oldukları cevaplar doğrultusunda öğretmenlerin eğitim-öğretim platformlarından yararlandığı, platformları öğrencilerin derse olan ilgisini arttırmak için kullandıkları, platformları kullanırken bu platformlardan destek alabileceklerini ifade eden cevaplar vermişlerdir. Sınıf öğretmeni adaylarının gelişen teknoloji koşulları göz önünde bulundurulduğunda öğretmen, öğrenci, öğretmen adayı ve velilerin kullanması için yapılmış eğitim öğretim etkinliklerinin ve paylaşımlarının olduğu platformunun içeriği hakkındaki görüşleri Tablo 11’de verilmiştir.

**Tablo 11. Sınıf Öğretmeni Adaylarının Eğitim Öğretim Etkinliklerinin ve Paylaşımlarının Olduğu Platformunun İçeriğine İlişkin Görüşleri**

Kodlar	f
Gelişim kademelerine uygun içerik	14
Eğlenceli içerik ve etkinlikler	12
Eğitim-öğretimi destekleyen içerikler bulundurma	12
Güvenilir olma	5
Teknolojiye uyumlu olma	4
Gelişim alanlarına uygun olma	4
Örnek materyal ve etkinlik kullanımı	3
Kullanıcıya özel kullanım	3
Denetlenebilir içeriğe sahip olma	3
Asenkron dersler içermesi	3
Ücretsiz kullanım	3
Kazanımlara uygun etkinlikler	2
Eğitim-öğretimi platformlarıyla işbirlikli	2
Pragmatik materyal ve etkinliklere yer verme	1
Senkron dersler içermesi	1
<b>Güncel bilgi paylaşımları</b>	<b>1</b>

Tablo 11 incelendiğinde sınıf öğretmeni adayları eğitim öğretim etkinliklerinin ve paylaşımlarının olduğu platformunun içeriğinde genellikle gelişim kademelerine uygun içerik olması (f=14), eğlenceli



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etkinlik içerikleri (f=12), eğitim ve öğretimi destekleyici etkinlikler (f=12) olması gerektiğini belirtmişlerdir. Sınıf öğretmeni adaylarının gelişen teknoloji koşulları göz önünde bulundurulduğunda öğretmen, öğrenci, öğretmen adayı ve velilerin kullanması için yapılmış eğitim öğretim etkinliklerinin ve paylaşımlarının olduğu platformunu kullanmayı teşvik etme konusundaki görüşleri Tablo 12’de verilmiştir.

**Tablo 12. Sınıf Öğretmeni Adaylarının Eğitim Öğretim Etkinliklerinin ve Paylaşımlarının Olduğu Platformu Kullanmayı Teşvik Etmeye İlişkin Görüşleri**

Kodlar	f
Tanıtım yaparak	15
İşbirlikli teşvik yaparak	11
Sosyal medya aracılığıyla	9
Uygulamalar aracılığıyla	8
İlgi çekici reklamlar aracılığıyla tanıtılarak	4
Seminer aracılığıyla	4
Çalışma etkinlikleri düzenleyerek	3
Hizmetiçi eğitim aracılığıyla tanıtılarak	2

Tablo 12 incelendiğinde sınıf öğretmeni adayları eğitim öğretim etkinliklerinin ve paylaşımlarının olduğu platformu teşvik etme konusunda sıklıkla tanıtım yapmayı (f=15), işbirliği ile (f=11) ve sosyal medya aracılığıyla (f=9) teşvik edeceklerini belirtmişlerdir. Sınıf öğretmeni adaylarının gelişen teknoloji koşulları göz önünde bulundurulduğunda öğretmen, öğrenci, öğretmen adayı ve velilerin kullanması için yapılmış eğitim öğretim etkinliklerinin ve paylaşımlarının olduğu platformu kullanma konusundaki görüşleri Tablo 13’te verilmiştir.





**Tablo 13. Sınıf Öğretmeni Adaylarının Eğitim Öğretim Etkinliklerinin ve Paylaşımlarının Olduğu Platformu Kullanma Nedenlerine İlişkin Görüşleri**

Kodlar	f
Teknolojiyi takip etmek	13
Paylaşım yapmak ve kullanmak	9
Etkili ve verimli öğrenme sağlamak	7
Yardımcı kaynak olarak kullanmak	6
Kolay ve ulaşılabilir olmasından yararlanmak	4
İlgi çekici olmasından yararlanmak	4
Ders dışı etkinlikleri kullanırmak	3
Kişisel gelişim ve genel kültür amaçlı	3
Velilerle iletişimi kolaylaştırmak	2
Araştırmaya yapmak	1

Tablo 13'te sınıf öğretmeni adayları eğitim öğretim etkinliklerinin ve paylaşımlarının olduğu platformu kullanma nedenleri olarak teknolojiyi takip etmek (f=13), paylaşım yapmak (f=9) ve etkili ve verimli öğrenme sağlamak (f=7) belirtmişlerdir. Sınıf öğretmeni adaylarının gelişen teknoloji koşulları göz önünde bulundurulduğunda öğretmen, öğrenci, öğretmen adayı ve velilerin kullanması için yapılmış eğitim öğretim etkinliklerinin ve paylaşımlarının olduğu platformu ne kadar sıklıkla kullandıkları konusundaki görüşleri Tablo 14'te verilmiştir.

**Tablo 14. Sınıf Öğretmeni Adaylarının Eğitim Öğretim Etkinliklerinin ve Paylaşımlarının Olduğu Platformu Kullanma Sıklıklarına İlişkin Görüşleri**

Kodlar	f
Sıklıkla	5
Haftada 3-4 Kez	4
Sürekli	4
Çoğunlukla	2
Bilinçli Olmak	2
Serbest Zamanlarda	1
Bazen	1



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Tablo 14'te sınıf öğretmeni adaylarının eğitim öğretim etkinliklerinin ve paylaşımlarının olduğu platformu kullanma sıklıklarına ilişkin sıklıkla (f=5), haftada 3-4 kez (f=4) ve sürekli (f=4) olarak belirtmişlerdir.

Sınıf öğretmen adayların geleceğin öğretmenleri olması için eğitim fakültelerinde gerekli donanım ve bilgiye sahip olmaları için almış oldukları dersler ve eğitimler sonucunda öğretmen adaylarının bilgilerine, gözlemlerine ve düşüncelerine gelecek adına önemli bir yer verilmiştir.

Eğitim öğretimin gelişmesinde desteğine ihtiyaç duyulan işbirliği içinde olunması gerektiği düşünülen diğer bir grup da velilerdir. Bu araştırma da velilerin görüşleri de önemli bir yere sahiptir. Velilerin eğitim-öğretim de göz ardı edilemeyecek bir önemi vardır. Bu sebeple araştırmada da velilerin de eğitim-öğretim için yapılması düşünülen platformda ne gibi gereksinimleri, ihtiyaçları ve istekleri olduğu bilgisi elde edilmeye çalışılmıştır. Velilerin gelişen teknoloji koşulları göz önünde bulundurulduğunda öğretmen, öğrenci, öğretmen adayı ve velilerin kullanması için yapılmış eğitim öğretim etkinliklerinin ve paylaşımlarının olduğu platformunun içeriği hakkındaki görüşleri Tablo 15'te verilmiştir.

**Tablo 15. Velilerin Eğitim Öğretim Etkinliklerinin ve Paylaşımlarının Olduğu Platformunun İçeriğine İlişkin Görüşleri**

Kodlar	f
Bilgi verici içerikler	8
Açık ve anlaşılabilir içerik	8
Erişilebilirlik	7
Destekleyici	6
Konu tekrar çalışmaları	4
Öğrenci gelişim takibi	4
İlgi çekici ve eğlenceli içerikler	3
Eğitici-öğretici etkinlikler	3
Bilimsel çalışmalar	3
Güvenilirlik	3
Gelişim kademelerine uygun içerik	2



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Tablo 15 incelendiğinde veliler eğitim öğretim etkinliklerinin ve paylaşımlarının olduğu platformunun içeriğinde genellikle bilgi verici içerikler (f=8), açık ve anlaşılabilir içerik (f=8), erişilebilir içerikler (f=7) ve destekleyici içerikler (f=6) olması gerektiğini belirtmişlerdir. Velilerin gelişen teknoloji koşulları göz önünde bulundurulduğunda öğretmen, öğrenci, öğretmen adayı ve velilerin kullanması için yapılmış eğitim öğretim etkinliklerinin ve paylaşımlarının olduğu platformunu kullanma nedenlerine ilişkin görüşleri Tablo 16’da verilmiştir.

**Tablo 16. Velilerin Eğitim Öğretim Etkinliklerinin ve Paylaşımlarının Olduğu Platformu**

### Kullanmayı Nedenlerine İlişkin Görüşleri

Kodlar	f
Öğrenci takibini yapmak	8
Destekleyici çalışmalarda bulunmak	7
Bilgi edinmek	7
Teknolojiyle uyum sağlamak	5
Faydalı içeriklere ulaşmak	4
Tekrar yaptırmak	1

Tablo 16’da veliler eğitim öğretim etkinliklerinin ve paylaşımlarının olduğu platformu kullanmaya ilişkin nedenlerinde sıklıkla öğrenci takibi yapmak (f=8), destekleyici çalışmalarda bulunmak (f=7) ve bilgi edinmek aracılığıyla (f=7) belirtmişlerdir. Velilerin gelişen teknoloji koşulları göz önünde bulundurulduğunda öğretmen, öğrenci, öğretmen adayı ve velilerin kullanması için yapılmış eğitim öğretim etkinliklerinin ve paylaşımlarının olduğu ne kadar sıklıkla kullandıkları konusundaki görüşleri Tablo 17’de verilmiştir.

**Tablo 17. Velilerin Eğitim Öğretim Etkinliklerinin ve Paylaşımlarının Olduğu Platformu**

### Kullanma Sıklıklarına İlişkin Görüşleri

Kodlar	f
Gerek duydukça	5
Haftada 1 kez	2
Sık sık	2
Her gün	1



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Tablo 17’de velilerin eğitim öğretim etkinliklerinin ve paylaşımlarının olduğu platformu kullanma sıklıklarına ilişkin gerek duydukça (f=5), haftada 1 kez (f=2) ve sık sık (f=2) olarak belirtmişlerdir.

Araştırmanın çalışma grubundan birini oluşturan veli grubu eğitim-öğretim için yapılması düşünülen platformun kullanılabilir olduğunu savunmuş bu doğrultuda cevaplar vermiştir. Velilerin genel olarak öğrencilerinin ilgi alanlarına, bilgilerine ve düşüncelerine daha iyi erişebilme isteği doğmuştur bu sebeple eğitim-öğretim platformunda öğrencilerinin gelişimini, ilgi alanlarını ve akademik başarılarını kontrol etmek onlar için önemli bir yere sahip olmuştur. Eğitim öğretimde bizlere gelecek umudu veren, ışığımız olan öğrencilerimizin de bu araştırmada önemli bir yeri vardır. Öğrencilerin gelişen teknoloji koşulları göz önünde bulundurulduğunda öğretmen, öğrenci, öğretmen adayı ve velilerin kullanması için yapılmış eğitim öğretim etkinliklerinin ve paylaşımlarının olduğu platformunun içeriği hakkındaki görüşleri Tablo 18’te verilmiştir.

**Tablo 18. Öğrencilerin Eğitim Öğretim Etkinliklerinin ve Paylaşımlarının Olduğu Platformunun İçeriğine İlişkin Görüşleri**

Kodlar	f
Eğitici oyun ve etkinlikler	24
Konu anlatım videoları	11
Gelişim kademelerine uygun	7
Paylaşımına açık	4
Sınav hazırlık çalışmaları	3
Güncel bilgi paylaşımı	2
Proje oluşturma ve araştırma olanakları	2
Robotik kodlama	2
Ücretsiz	2
E-sınavlar	1
Konu tekrar çalışmaları	1
Asenkron dersler	1
Senkron dersler	1

Tablo 18 incelendiğinde öğrenciler eğitim öğretim etkinliklerinin ve paylaşımlarının olduğu platformunun içeriğinde genellikle eğitici oyun ve etkinlik içerikleri (f=24), konu anlatım videoları



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(f=11), olması gerektiğini belirtmişlerdir. Öğrencilerin gelişen teknoloji koşulları göz önünde bulundurulduğunda öğretmen, öğrenci, öğretmen adayı ve velilerin kullanması için yapılmış eğitim öğretim etkinliklerinin ve paylaşımlarının olduğu platformunu kullanma nedenleri konusundaki görüşleri Tablo 19’da verilmiştir.

**Tablo 19. Öğrencilerin Eğitim Öğretim Etkinliklerinin ve Paylaşımlarının Olduğu Platformu Kullanmayı Nedenlerine İlişkin Görüşleri**

Kodlar	f
Öğrenme amaçlı kullanmak	11
Eğlence amaçlı kullanmak	10
Konu tekrar çalışmaları yapmak	8
Eğitici ve öğretici etkinliklerden yararlanmak	6
Konu anlatım videoları izlemek	4
Paylaşımlardan yararlanmak	4
Sınavlara hazırlanmak	3
Gelişim seviyelerine uygun olmasından dolayı	2
Projelere katılmak	2
Araştırma yapmak	1
Ödev yapmak	1

Tablo 19’da öğrenciler eğitim öğretim etkinliklerinin ve paylaşımlarının olduğu platformu kullanmaya ilişkin nedenlerinde sıklıkla öğrenme amaçlı kullanma (f=11), eğlence amaçlı kullanma (f=10) ve konu tekrar çalışmaları yapmak (f=8) belirtmişlerdir. Öğrencilerin gelişen teknoloji koşulları göz önünde bulundurulduğunda öğretmen, öğrenci, öğretmen adayı ve velilerin kullanması için yapılmış eğitim öğretim etkinliklerinin ve paylaşımlarının olduğu ne kadar sıklıkla kullandıkları konusundaki görüşleri Tablo 20’de verilmiştir.



**Tablo 20. Öğrencilerin Eğitim Öğretim Etkinliklerinin ve Paylaşımlarının Olduğu Platformu Kullanma Sıklıklarına İlişkin Görüşleri**

Kodlar	f
Serbest zamanlarda	6
İhtiyaç duyduğumda	5
Günde 1 saat	4
Ara sıra	4
Günde yarım saat	1

Tablo 20’de öğrencilerin eğitim öğretim etkinliklerinin ve paylaşımlarının olduğu platformu kullanma sıklıklarına genellikle ilişkin serbest zamanlarda (f=6), ihtiyaç duyduğunda (f=5) olarak belirtmişlerdir.

#### 4. Sonuç ve Tartışma ve Öneriler

Son yıllarda insanların beklentileri, istekleri ve gereksinimleri de oldukça değişmiş ve gelişmiştir. İnsanlığın değişmesi-gelişmesi teknolojik alanda birçok yeniliği beraberinde getirmiştir. Teknolojinin de giderek kendini yenilemesi, geliştirmesi ve değiştirmesi farklı alanları da etkilemiştir. Bu durum karşısında etkilenen bir diğer alan da eğitimidir. Eğitimin teknolojik yenilenmelerden etkilenmesi, teknolojinin hayatımıza kattığı bazı kolaylıkların getirmesi eğitim-öğretim alanında da durumların değişmesine yol açmıştır. Günümüz koşullarında ve gelecekte eğitim-öğretimin her yerde her alanda her zaman ulaşılabilir olması için çalışmalar yapılmaktadır.

Ülkemizde eğitim-öğretimin fırsat eşitliğine, erişilebilirliğine ve gelişimine öncülük etmek için bazı çalışmalar yapılmıştır. Uzaktan eğitimin hayatımıza getirmiş olduğu eğitim-öğretim platformlarından sonra değişen, gelişmiş ve kendini sürekli yenileyen bir platforma ihtiyaç duyulup duyulmadığı hakkında bir araştırma yapmanın gerekli olduğu gün yüzüne çıkmıştır. Yapılan araştırmada öğretmen adaylarının, öğrencilerin, velilerin ve öğretmenlerin görüşleri alınmıştır. Platformun oluşturulması için platformu kullanacak kişilerin fikirlerinin alınması eğitim-öğretim alanındaki ihtiyaçların da görülmesine olanak sağlamıştır.





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Öğretmenlerin ihtiyaçlarına, isteklerine ve gereksinimlerine uyum sağlaması beklenen platformun birebir öğretmenlerin düşüncelerine yönelik oluşturulması sahadaki gereksinimleri gözler önüne sermemize eksiklerimizi tamamlayarak eğitim-öğretim için önderlik edebilecek platformların daha gelişmiş halde sürüme konulmasına olanak sağlayabilmiştir. Araştırmanın ve gerekli görülen platformun öğretmenlerin gereksinimlerine yönelik oluşturulması daha iyi eğitim olanaklarının sağlanmasına, öğretmenlerin gerektiği alanda yeni etkinlikler ve çalışmalara ulaşmasına olanak sağlayacak ve öğretmenlerin bu platformdan yararlanarak öğrencilere daha verimli eğitim-öğretim verebilmesine destek olabilecektir.

Öğretmen adaylarının vermiş olduğu cevaplar gelecekteki eğitimimiz ve yeni neslimiz için oldukça önemlidir. Verilen cevaplar doğrultusunda öğretmen adayları da hem çağın gereksinimlerini hem de eğitim-öğretimin geleceğe ışık tutabilmesi için düşüncelerini anket sorularında ifade etmiştir. Öğretmen adaylarına göre eğitim-öğretim için oluşturulması düşünülen platform gerekli görülmüş ve öğretmen adayları da bu platformda ne gibi alanlara yer verilmesi gerektiği ne gibi uygulamalar ve etkinlikler olabileceği hakkında düşüncelerini ifade etmiştir.

Gelişen ve değişen dünyamızda ailelerin teknolojiyle olan bağları öğrencilerinkine göre daha az kuvvetli olduğundan veliler öğrencileriyle onların düzeylerine uygun iletişim kuramadıklarını düşünebilmekte, çağa ayak uyduran yeni nesle yetişebilmek için ellerinden geleni yapmaya çalışmaktadır. Bu eğitim-öğretim platformunun da veliler için asıl önemi öğrencileriyle iletişim bağlarını kuvvetlendirmek diyebilmekteyizdir. Öğrencilerin teknolojiyi bu denli iyi bilmesi hem avantajlı hem de dezavantajlı durumları ortaya çıkarabilmektedir. Veliler de öğrencilerinin avantajlı oldukları durumlarda onları desteklemek ve dezavantajlı oldukları durumlardan onları korumak istemektedir.

Eğitim-öğretim platformunun eğitimde önemli yere sahip olan velileri de içine alınarak oluşturulması birlikte yeni neslin teknolojiyi de kullanarak daha verimli olmasını, bilgili olmasını ve bilgiye ulaşabilmesi için emek sarf etmesini destekleyecektir. Eğitim ve öğretim de ayrılmaz bir bütün



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olan veli-öğretmen-öğrenci ilişkisi sağlamlaştırılmalı eğitimi ayakta tutacak olan etkenler arttırılmalı geleceğe yönelik çalışmalara yer verilmelidir.

Öğrencilerin ankette yer alan sorulara vermiş oldukları cevaplar doğrultusunda oluşturulması düşünülen eğitim-öğretim platformunda öğrencilerden fikirlerinin alınması görüşmeler de onları çok motive etmiştir. Öğrencilerin isteklerini, arzularını, ihtiyaçlarını ve gereksinimlerini göz ardı ederek oluşturacağımız eğitim-öğretim platformları ya da çalışmaları maalesef ki onların düzeyine hitap edemeyeceği için istenilen sonucu elde etmek için yetersiz olabilecektir. Öğrenciler dünyanın değişmesiyle, teknolojinin gelişmesiyle ve ellerinin altındaki medya kaynaklarıyla bilgiyi araştırabilmekte daha iyi gözlemler yapabilmektedir. Öğrencilerin bu gözlemlerinin de ciddiyle incelenmesi gerekmektedir.

Anketlere verilen cevapların çoğunda öğrencilerin eğlenerek öğrenmek istemesi ön plandadır. Ne yazık ki eğitim-öğretim de yeniliklere doğru ilerlemeye çalışsak da yeterince çağa ayak uydurmuş sayılamayız. Öğrencilerin farklı öğrenme stillerine ve stratejilerine uygun eğitim alması derslerdeki ilgiyi, merakı ve isteği arttırabilmektedir. Bu yüzden farklı öğrenme stilleri ve stratejileri daha fazla uygulanmalı öğretmenlere fikir oluşturulabilecek etkinlikler ve çalışmalar ortak bir alanda paylaşılmalıdır.

Eğitim-öğretim alanında ilerleyebilmemiz için platform oluşturulup oluşturulmaması ve bu platformun oluşturulması sonucu ortaya çıkacak avantaj-dezavantaj durumları göz önüne alınarak çalışmalar yapılmalıdır. Bu platform yeni nesil öğretmenlerin deneyimli öğretmenlerin gözlemlerinden, bilgilerinden yararlanmasına; yeni nesil öğretmenlerimizin de çağa ayak uyduran çalışmalarının geleneksel yaklaşımdaki öğretmenlerimize yardımcı olabileceği ortaya çıkmaktadır. Velilerin ve öğrencilerin de bu platformdaki bilgi ve etkinliklerden yararlanması eğitimimizdeki temel yapıları güçlendirebilecektir.

Yapılan çalışmalar sonucunda tüm verilerin analiz edilmesiyle birlikte bir platform oluşturmanın gerekliliği üzerinde durulmuş ve örnek bir uygulama çalışması yapılmıştır. Yapılan uygulamaya göre uygulamanın giriş sekmeleri şu şekilde düzenlenmiştir. Hazırlanan değişen ve gelişen küresel

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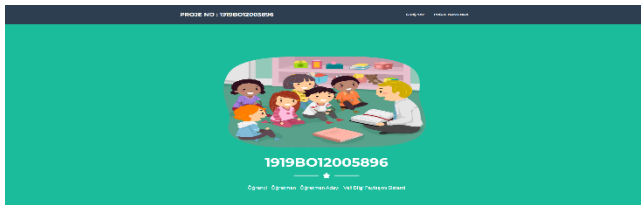
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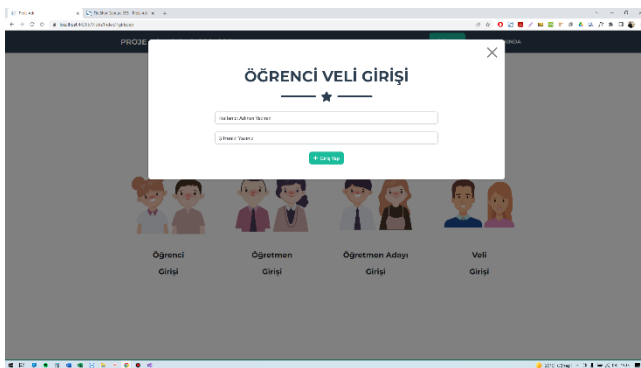


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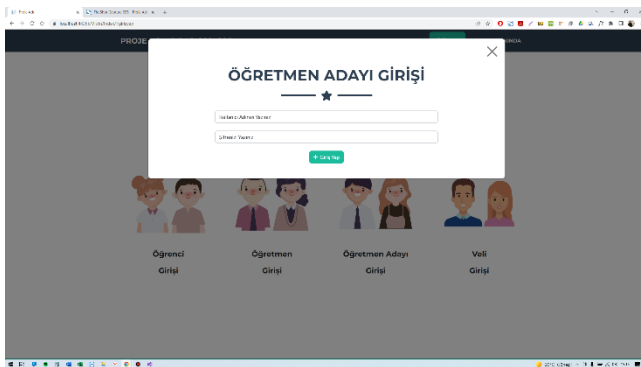
yaklaşımlar odağında eğitim- öğretim platformunun görselleri aşağıdadır:



(Uygulama ana sayfası)



(Öğrenci giriş sekmesi)



(Öğretmen adayı giriş sekmesi)

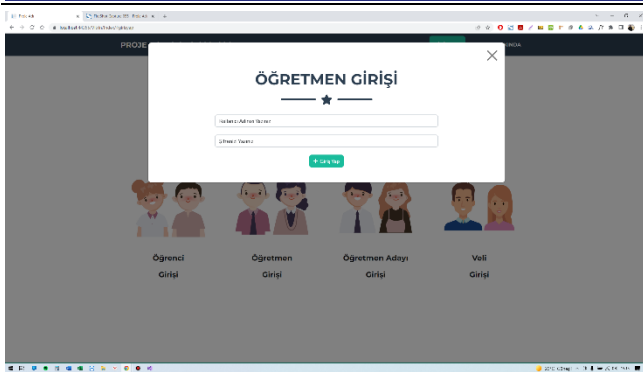
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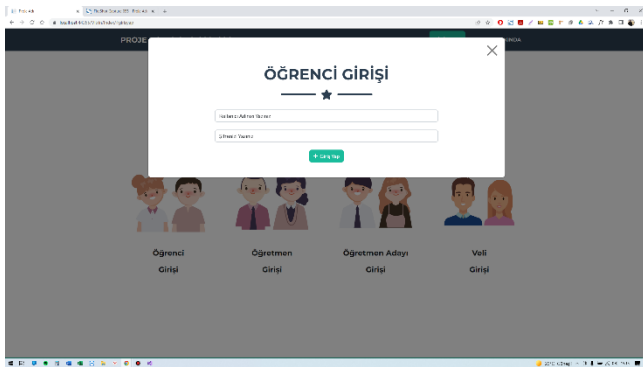
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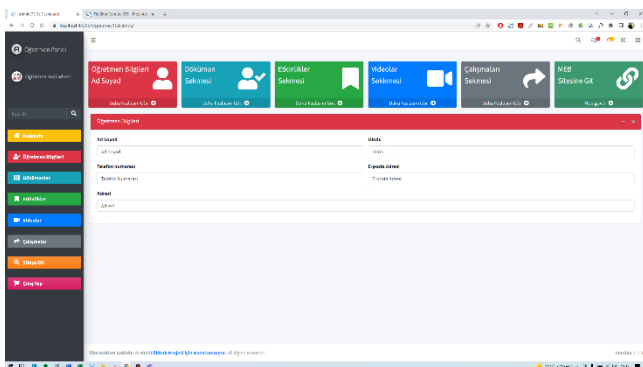


(Öğretmen giriş sekmesi)



(Öğrenci giriş sekmesi)

Araştırmanın bir çıkarımı olarak oluşturulması desteklenen platformun öğretmenler için yapılan giriş sekmesi ve içerikleri şu şekilde oluşturulabilmektedir.



(Öğretmen paneli / Öğretmen bilgileri sekmesi)

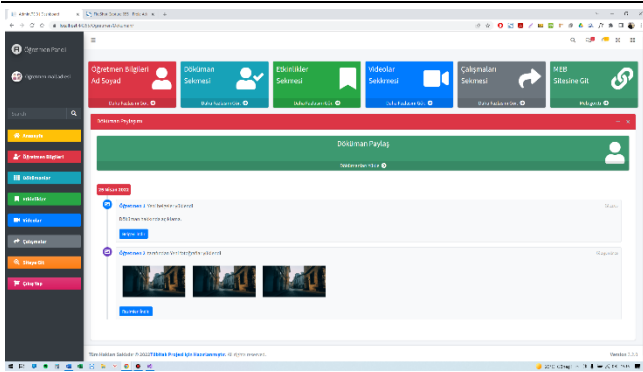
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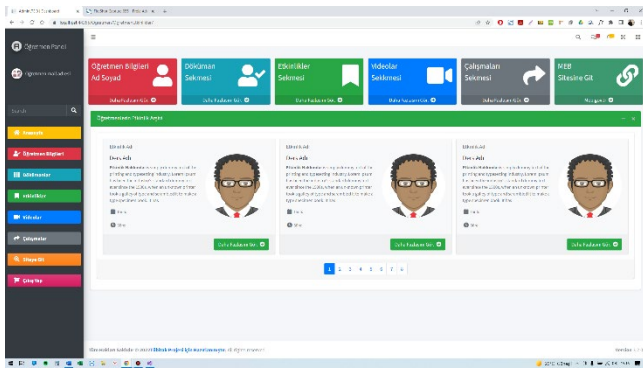
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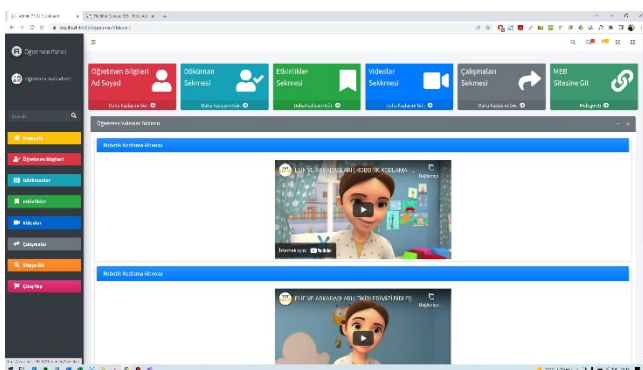
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*(Öğretmen paneli / Öğretmen doküman paylaşım sekmesi)*



*(Öğretmen paneli / Öğretmen etkinlik arşivi sekmesi)*



*(Öğretmen paneli / Öğretmen videolar bölümü sekmesi)*

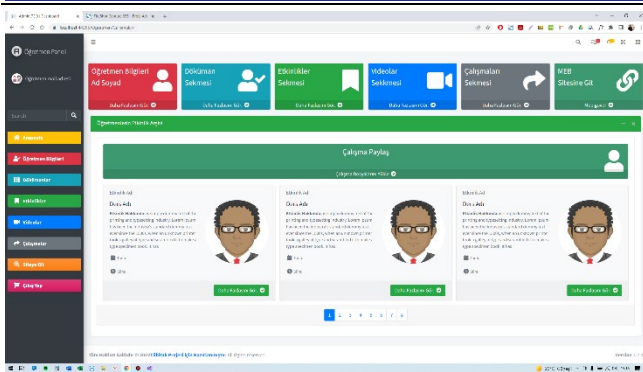
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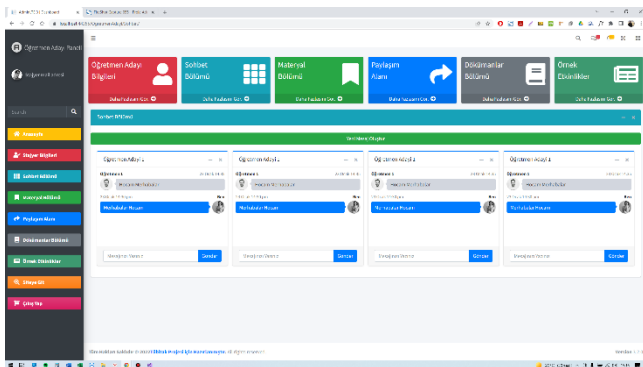


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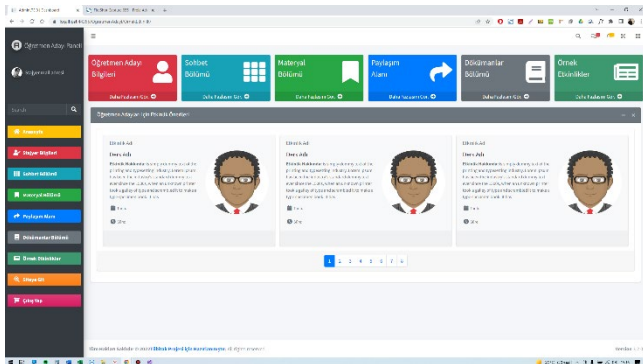


*(Öğretmen paneli / Öğretmen etkinlik arşivi sekmesi)*

Öğretmen adaylarının vermiş olduğu cevaplar doğrultusunda oluşturulması düşünülen eğitim-öğretim platformunun öğretmen adayları için hazırlanabileceği sekmelerin uygulama hali şu şekilde oluşturulabilmektedir.



*(Öğretmen adayı paneli / Öğretmen adayı sohbet bölümü sekmesi)*



*(Öğretmen adayı paneli / Öğretmen adayları için etkinlik önerileri sekmesi)*



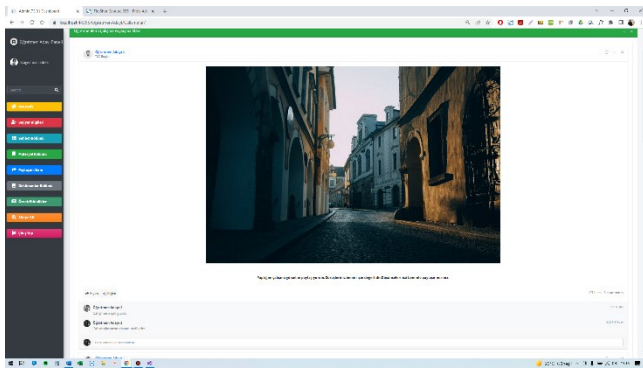
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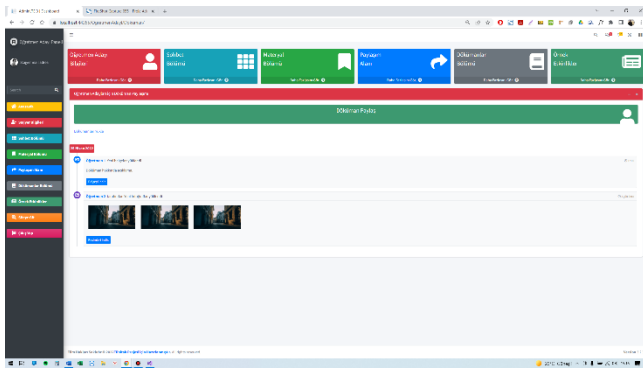
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<https://www.icssietcongress.com/icssiet-2022>

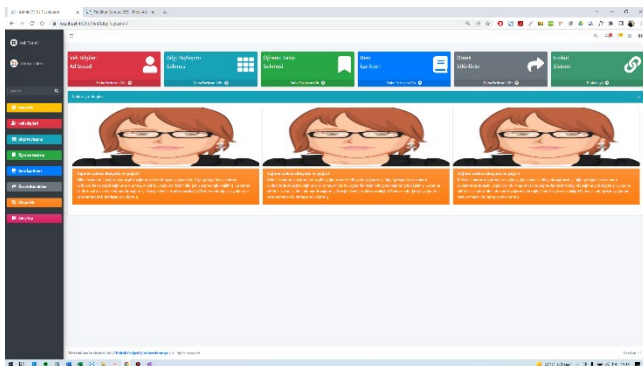


*(Öğretmen adayı paneli / Öğretmen adayları çalışma paylaşımı sekmesi)*



*(Öğretmen adayı paneli / Öğretmen adayları doküman paylaşım sekmesi)*

Velilerin anketlere vermiş oldukları cevaplar doğrultusunda gelişen ve değişen küresel yaklaşımlar odağında öğretmen-öğretmen adayı koordinasyonlu eğitim-öğretim platformunun veliler için oluşturulan sekmesi şu şekilde olabilmektedir:



*(Veli paneli / Veli paneli veli bilgileri sekmesi)*

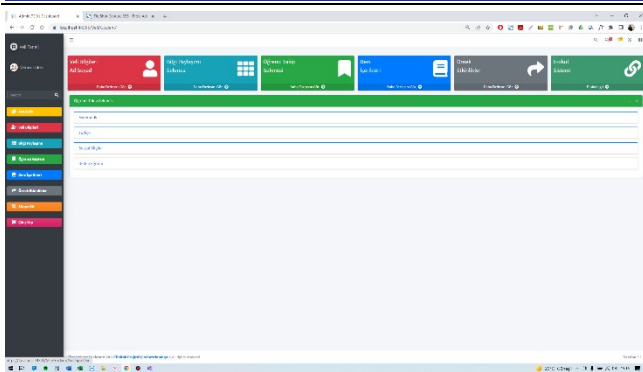
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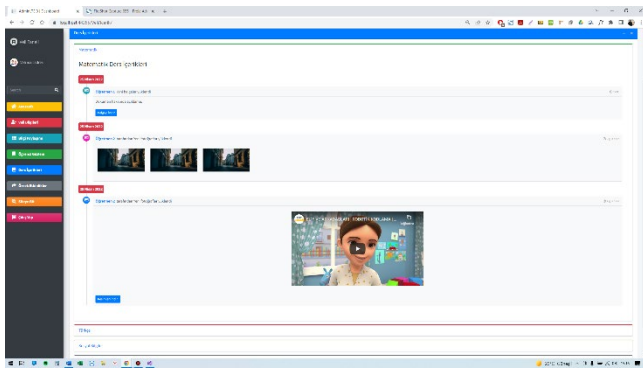
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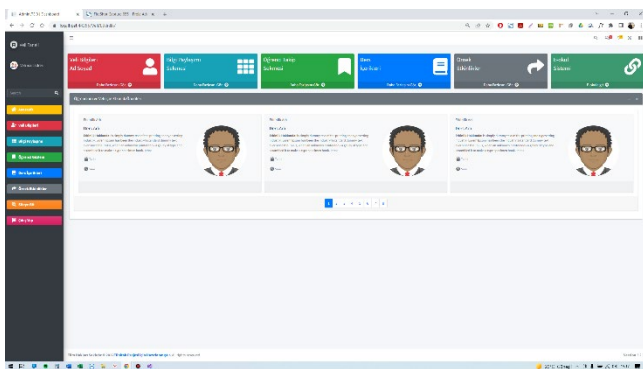
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*(Veli paneli / Veli paneli öğrenci takip sekmesi)*



*(Veli paneli / Veli paneli ders içerikleri sekmesi)*



*(Veli paneli / Öğrenci ve veli için etkinlik önerileri sekmesi)*

Öğrencilerin vermiş oldukları cevaplar doğrultusunda öğrenciler için oluşturulacak sekme şu şekilde olabilecektir:

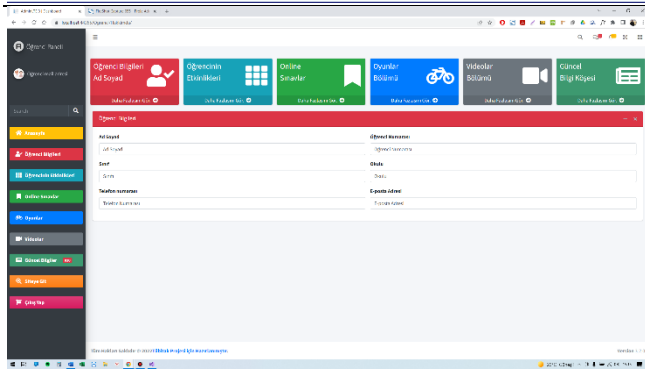
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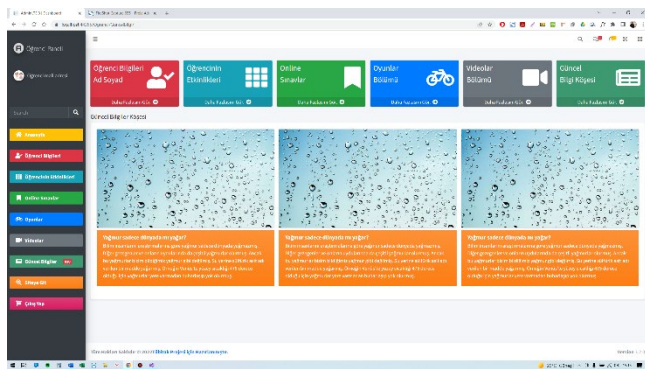
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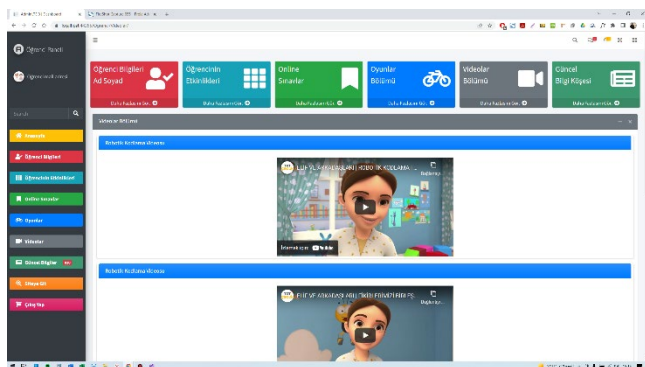
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*(Öğrenci paneli / Öğrenci paneli öğrenci bilgi sekmesi)*



*(Öğrenci paneli / Öğrenci paneli güncel bilgiler köşesi sekmesi)*



*(Öğrenci paneli / Öğrenci paneli videolar bölümü sekmesi)*

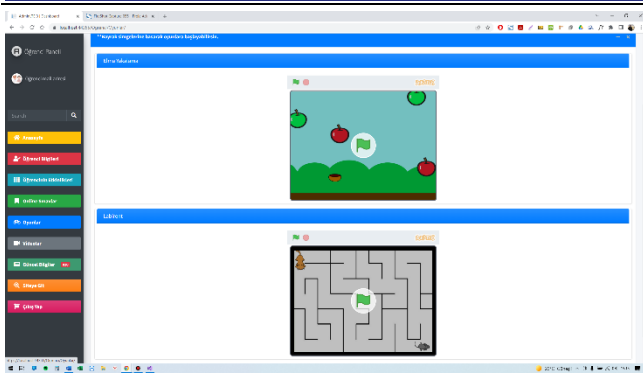
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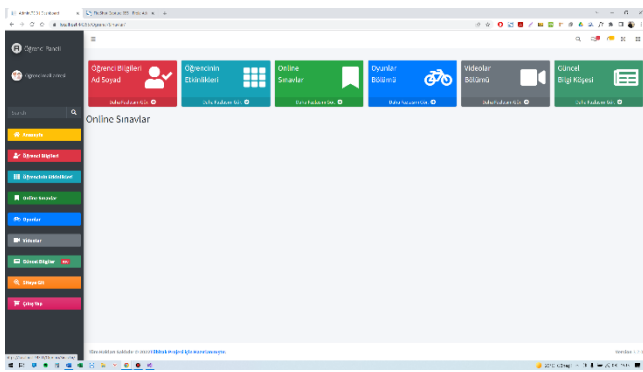
Tetova/MAKEDONIA



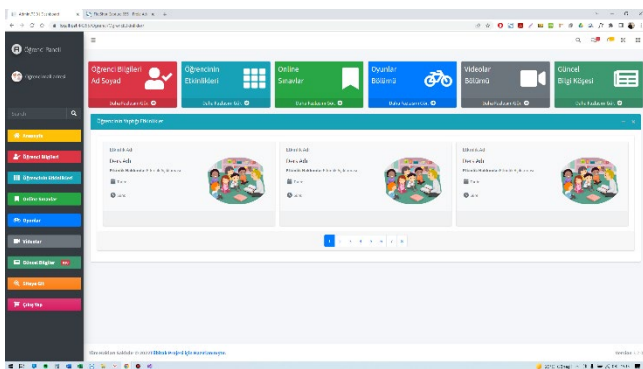
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*(Öğrenci paneli / Öğrenci paneli eğitici-öğretici oyunlar sekmesi)*



*(Öğrenci paneli / Öğrenci paneli online sınavlar sekmesi)*



*(Öğrenci paneli / Öğrenci paneli öğrencinin yaptığı etkinlikler sekmesi)*

Araştırma sonucunda oluşturulan platform ile ilgili video şu şekilde linki şu şekildedir:

<https://drive.google.com/drive/folders/1p909RTIQoqkF2tnZulqlPoPN4aVOY2xx?usp=sharing>

Değişen ve gelişen küresel yaklaşımlar odağında eğitim- öğretim platformunun oluşturulması velilerin, öğrencilerin, öğretmenlerin ve öğretmen adaylarının ilgisini çekecek şekilde oluşturulmuştur.



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Çalışmada verilen cevaplar doğrultusunda öğretmenlerin derslere ek destek amaçlı bu platformlardan yararlandıkları, öğretmen adaylarının bu platformlardaki etkinlikleri, çalışmaları ve dersleri görmelerinin onların öğretmenlik mesleği için gelişiminde olumlu sonuçların ortaya çıkacağını, velilerin öğrencilerinin durumlarını ve çalışmalarını yakından takip etme isteklerinin de bu platform sayesinde daha iyi olacağını, öğrencilerin bu platformlardaki eğitici öğretici etkinlik ve oyunlardan yararlanmaları onların derse olan isteklerini, meraklarını ortaya çıkaracağını göz önüne sermiştir.

Sonuç olarak değişen ve gelişen küresel yaklaşımlar odağında eğitim- öğretim platformunun oluşturulmasının sürekli yenilenen teknoloji çağımızda önemli bir yeri olduğu ve eğitim-öğretimin teknolojiyle paralel olarak ilerlemesi için yenilenerek kendini geliştirmesinin önemli bir yere sahip olduğu sonucuna varılmıştır. Ülkemizde yapılan eğitim-öğretim çalışmalarının çağın önüne geçmesi adına daha donanımlı araştırmalar yapılarak bireylerin, toplumun ve devletin gereksinimlerine cevap olabilecek kullanımı kolay, anlaşılabilir, ulaşımı kolay ve bilgiye yön veren yeniliklerin yapılması gerektiği ortaya çıkmıştır. Bu gibi çalışmaların gün geçtikçe artması ülkemizdeki eğitim-öğretim çalışmalarına yön verecek ve bizleri geliştirecektir.

Araştırmanın bulgular ve sonuçlar kısmı göz önünde bulundurularak bundan sonraki çalışmalar için öneri niteliğinde fikirler ortaya koyulmuştur:

1. Değişen ve gelişen küresel yaklaşımlar odağında eğitim-öğretim platformunun oluşturulmasının gerekliliği hakkında daha geniş çaplı bir görüşme yapabilmek için araştırma paydaşları genişletilebilir.
2. Değişen ve gelişen küresel yaklaşımlar odağında eğitim- öğretim platformunun oluşturulmasının eğitim-öğretim için sağladığı avantajları ve dezavantajları algılayabilmek için demo platform sürümü hazırlanması hakkında bir araştırma yapılabilir.
3. Değişen ve gelişen küresel yaklaşımlar odağında eğitim- öğretim platformunun öğretmen, öğretmen adayı, öğrenci ve velilerin kullanımına uygun olup olmayacağını anlaşılabilmesi için



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platformun belli bir süre dahilinde kullanılması ve yansıyan durumların sonuçlandırılması sağlanabilir.

4. Değişen ve gelişen küresel yaklaşımlar odağında eğitim- öğretim platformunun avantajlı bir platform olduğu kanısına varılması halinde platformun nasıl hazırlanması gerektiği ve platformun eğitim- öğretim alanlarında kullanıma hazırlanması sağlanabilir.

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## **Cultural Hegemony in the Indian Subcontinent is a Barrier for Women's Emancipation: an Analysis of Arundhati Roy's *The God of Small Things* and Monika Ali's *Brick Lane***

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### **Abstract**

The current study deals with the patriarchal oppression, the so-called family culture that exists on the Indian subcontinent, and how the female protagonists react to it. To achieve its goals, the study focuses on the extent of subjugated female characters in the patriarchal Indian subcontinent, particularly India and Bangladesh, and their sociocultural status. In order to achieve these goals, the present study analyses two novels from the Indian subcontinent in contemporary literature: *The God of Small Things* by Arundhati Roy and *Brick Lane* by Monika Ali. The inferior position and status of women in the Indian subcontinent's socio-cultural codes of power has forced them to accept their inferior position and content themselves with the inferior status accorded them since childhood. The selected novels are examined in the context of feminist theories. The underlying theories provide the nuances of light needed to achieve the study goals. Feminist theory emphasises patriarchal challenges, self-efficacy, and women's responses, and is closely related to radical



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feminist theory. Text analysis is used as the research method, and the research query mode is text analysis.

**Keywords:** Patriarchal Oppression, Indian Subcontinent, Family Culture, Subordinate Status

## Introduction

In the Indian subcontinent, there is a long-established culture of patriarchal submission in which women are viewed as subtle creatures who rely on man for everything from the beginning of their existence to sustenance (Brahmane, 2016. P, 28), and the position of these women are second to men. Men were prominent in all walks of life, which is characteristic of the West, while women are characteristics of the East, such as weakness and submission (Lone, 2008. P, 35). Such male-dominated cultures have developed on the Indian subcontinent, where women are shaped in many ways by the patriarchal structure of family and social power relations. The inferior position and status of women in the Indian subcontinent's socio-cultural codes of power has led women to accept the inferior position and be content with the inferior status accorded them since childhood (R and Nagesh, 2015, p. 17). The women considered worthless when it came to doing anything intellectual or artistic. Oppression is so deeply rooted in societal norms that even the educated woman is not freed from society's bondage. As mentioned earlier, patriarchal submission affects much of the Indian subcontinent, where there is a strong relationship between family and social culture. Here women face an inherent social risk stemming from traditional gender, limited access to markets, productive services and education (Heitzman et al., 2019, p. 65).

The research ensued the textual analysis method for deeper understanding of the selected novels. The researcher finds the code and sub code relating female domination in the name of family and social norm. The chosen novels are examined in light of feminist theories and empowerment. The underlying theory provides the light shadow to achieve the study's objectives. Feminist theory



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emphasizes patriarchal challenge and self-efficacy, as well as women's responses, concepts that are closely related to radical feminist theory. The study looks at the context of both physical and psychological violence, which are the dual norms of patriarchal society. As a result, this study seeks to fill gaps by examining two selected novels: *The God of the small things* (1997), and *Brick Lane* (2003), in the context of literary texts from the Indian subcontinent written by women authors. In contrast to Western feminist movements, the Indian movement was founded by men and later supported by women. However, for obvious reasons, Indian women's emancipation struggle could not replicate that of Western women.

In its own way, the women's movement in Bangladesh has contributed to change. Bangladeshi women demonstrated that femininity does not imply weakness. The interaction of contemporary feminist politics with broader social, economic, and political changes in the Indian subcontinent has shaped it. The current study deals with the patriarchal oppression, the so-called family culture that exists on the Indian subcontinent and how female protagonists react to it. To achieve its objectives, the study focuses on the extent and sociocultural status of subjugated female characters in the patriarchal Indian subcontinent, particularly India and Bangladesh. The current study analyzes two novels from the Indian subcontinent in contemporary literature: *The God of Small Things* (1997) by Arundhati Roy and *Brick Lane* (2003) by Monica Ali. A similar pattern can be found in certain novels depicting women, who are frequently expected to present themselves as quiet and submissive while honoring their parents, husbands, and families. The study examines the oppression and subjugation of women in the Indian subcontinent through the analysis of numerous characters of selected novels. The researcher wishes to investigate the issue of female's family oppression, which is attributed to the lives of all female protagonists, as well as their emancipation, and reaction.



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## Literature Review

Women have traditionally held a weaker position in society, both familiarly and socially. Gender stereotypes are passed from generation to generation. Even in today's globalized world, women are deprived of their basic human rights and oppressed. Man dominated all aspects of life, leaving woman a vulnerable creature who had to rely on him for everything from survival to sustenance. A woman's struggle in a male-dominated society is understandable under such circumstances. When it came to something intellectual or artistic, it was considered worthless. Although women are capable of thinking, studying or making decisions, they could express themselves in the form of language, art, and political exploitation (Sinha, xxvii). Women are kept without privilege and restricted without their own choices. Therefore, maintaining this practice repels women from positions of leadership and authority. According to Tina Chanter (2015), women were considered unsuitable for male roles simply because of a lack of education to become politically informed and responsible citizens, and if they were offered this opportunity, they were equal to men (p.9). Feminist theorists such as Beauvoir, Savitt, Geetha and Chanter show that gender stereotypes are only social constructs, not ordained by God, and therefore can be challenged (Mat Desa et al., 2013, p. 57).

In the Indian subcontinent, the oppression of women is a complex problem. Women were considered unworthy of an autonomous individuality. Many studies have been conducted on selected novels to demonstrate the licentious state of women. Rafiq (2020) demonstrates how women are powerless to overcome tensions at the individual and social levels (p. 3008), how they remain within the customs and cultures of their social boundaries (Mortada, 2010, p. 53), and how they propagate cultural stereotypes (Perfect, 2008, p. 110). However, little research has been conducted on the issue of family culture as it pertains to the lives of all female protagonists, as well as these characters' responses through self-awareness and self-efficacy. The female





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protagonists who find themselves in a quandary and an inner conflict when it comes to responding to the existing family norm.

Women in the Indian subcontinent can be portrayed as voiceless or powerless, as Spivak argues in his essay on the subordinate. Spivak is sceptical that the oppressed or marginalized person will ever be given the opportunity to tell their story. In this context, women can be compared to colonized subjects under the control of dominant colonizers. The condition of women has become generalized, and the oppression common to the colonized has resulted in colonized women being doubly oppressed (Ashcroft, 2006, p. 233). As a result, women from the Indian subcontinent are mentally depressed and are portrayed in the selected novels. According to Antonia Navarro, most writings portray the psychological suffering of the frustrated housewife; this subject is often seen as superficial (Brahmane 30) when compared to depicting the oppressed and downtrodden life of lower-class women.

The mentality of the subaltern at the time of opposition, at the moment of their action against domination (Gilbertson, 2018), the dialectics of collaboration and acquiescence on the part of the subalterns, and the wide range of attitudes between resignation and revolt have been underplayed in this mode of historiography in the Indian Subcontinent (Gupta, 2016, p. 110).

The mentality of the subordinates during opposition, when acting against the rule (Gilbertson, 2018), the dialectic of collaboration and toleration of the subordinates and the range of attitudes between resignation and revolt have been underestimated in this kind of historiography of the Indian subcontinent (Gupta, 2016, p.110). These women are afraid to challenge postcolonial India's traditional ideas about love and marriage. "It is a pity that she submits in the name of decency and honor to the very sexist, casteist, and communal prejudices that have stood in their way and denied them fulfilment," (Roy, 2018). According to Kamu (2019), it is a world of double standards, where principles and ideals are used as a mask to cloak the most heinous social



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injustices, and where cruelty and barbaric behavior are used as tools to support the legal system and secular exploitation (Rafiq , 2020, p.760). Zaidi shows how traditionally bound women develop their way to self-realization through the merging of modernity and tradition (209).

All of the above problems stem from patriarchal rule. According to Sultana (2011), patriarchy refers to male dominance in the public and private spheres, as well as determining the root cause of female subordination (11). This puts patriarchy at the centre of feminist research. The problems women face cannot be separated from the patriarchy that surrounds them, in which women's status in society is positioned below that of men and is seen as a less important role in society (Mafakhir, 2016, p. 1-2). In patriarchy, women are considered weak. They don't have the ability to fight and solve every problem that comes up in your life. These beliefs make women weaker and sometimes shape their thinking, character, and behavior in ways that make them inferior to men.

Feminist theories emphasize the existence of a gendered social system and the prevalence of gender inequality in society, arguing that men and women must be politically, economically, and socially equal. The conviction that women are granted a lower status due to social inequality is at the heart of feminist theory (Hasan, 2018, p.65). Political, economic, and social power connections shape women's status. Feminist writers argue that women must reclaim all aspects of social influence through personal experience. Sarah Ahmed contends that feminist theory is formed wherever gender norms are challenged, whether in an educational context, political mobilization, or everyday life (99). Feminists also argue that women should have equal access to societal opportunities. Margaret believes that women should be liberated from home confinement and eventually be able to be fully-fledged by cultivating their minds and abilities in the same way that men do (2017, p. 14).

Liberal feminism, radical feminism, Marxist feminism, socialist feminism, and postmodern feminism are the five main schools of thought of feminism (Chamberlain, 2017, p. 200). Because



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each perspective focuses on a different cause of gender inequality, each takes a different approach to addressing these inequalities. According to liberal feminism, culture limits women's access and public engagement through the conventional socialization of gender roles and women's educational and employment prospects, which are primarily limited by men's institutional barriers, legal and political preferences. Socialist and radical feminism arose as a reaction to Marxist feminism, and is primarily regarded as a product of the second wave of feminism, which began in the 1960s and continues to this day. It questions whether it is still useful to categorize earlier feminism as mainstream, Marxist, or radical (Maynard, 1995, p. 259).

Socialist feminists are concerned with women's oppression. They argue that radical feminists' gender inequality studies and creates the patriarchal rule structure as patriarchy. In contrast to Marxist feminism, radical feminism sees patriarchy as the root cause of gender inequality. Male dominance of female sexuality and reproduction, as well as male violence against females, are also priorities for radical feminists. To address disparities, radical feminism advocates the deconstruction of patriarchal social structures.

## **Brick Lane: An oppressive picture of Bangladeshi family lifecycle**

Monica Ali's *Brick Lane* (2003) focuses on the downtrodden wife of a Bangladeshi immigrant and the family problems and prejudices that fuel the protagonist's desire for little freedom. Monica Ali's early and successful novel *Brick Lane* is one of the best British novels of Granta's decade. The main character's issue develops painfully and remains underdeveloped. The monotony of the novel may represent the monotony of the main character. Nazneen's life changed when she was eighteen. After an arranged marriage to a man twenty years her senior, she left her village of Bangladesh to settle in London's East End. In this new world, where the poor can be fat and even the dogs are on a diet, she struggles to understand her existence - and to fulfill her duty to her husband. But Nazneen accepts fate and devotes her life to raising her family and battling their demons of discontent until she meets Karim, an indispensable young companion.



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Brick Lane could be interpreted as a feminist text. The text is about Bangladeshi women, their culture, their behavior, and how they are both literally and culturally treated. Brick Lane starts in East Pakistan (later Bangladesh), which was a part of British India until shortly after World War II (Storengen 9). The women of Brick Lane are important characters because the story is based on their lives in many ways. The novel depicts suicides, arranged marriages, violence, polygamy, and prostitution. Women are not allowed to work in this Bangladeshi enclave in London, and their modesty of dress and demeanour is judged. Bangladeshis who have settled in this area of London form a small enclave within the English community where Bangladeshi rules continue to apply. Tower Hamlets is located in East London and is home to the majority of Bangladeshis. Brick Lane was home to over 50,000 Bangladeshis. Tower Hamlets is flavored with Bangladeshi spices. Women are not permitted to work outside, and all forms of oppression exist both here and in their homeland.

Because Bangladesh was ruled by the male dominant culture, the female protagonist Nazneen lacked her own identity. As an immigrant in London, Chanu, like Bangladeshi, maintains a very different atmosphere and remarks. This is the tragedy of our lives. Being an immigrant is to live a tragedy (Ali, 2003; p. 112). Many women live in London for ten or twenty years but are unable to adjust to western countries due to familial ties. Some women spend ten, twenty years here and grind spices all day and learn only two words of English (2003; p.114).

The protagonist, Nazneen, is subjected to unjust treatment because her father arranges her marriage without her consent; marriage is an example of patriarchal supremacy in private and family life. Male culture considers it their right to make decisions about the lives of women. Nazneen's father exemplifies traditional Bangladeshi family values by arranging her marriage to Chanu, a man over forty. She must accept her father's marriage proposal: "Abba, it is good that you have chosen my husband." "I hope to be a good wife like Amma" (2003; p.16). She does not believe it is appropriate

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for her to ask her father about the details of her future life partner and to look at his pictures as an obedient daughter. Nonetheless, she notices it by chance and recognizes it: "The man she would marry was old. Must be at least forty years old. He had a frog's face. They'd marry, and he'd bring her back to England with him" (2003; p.17). When Nazneen was submitted to her husband, her condition worsened, reflecting her family's teaching that she has no choice but to follow her spouse: "...she saw that she was trapped inside this body, inside this room, inside this flat, inside this concrete slab of entombed humanity" (2003; p.76). As a Bangladeshi, Nazneen faces prejudice, and as an immigrant, she is regarded as a subservient alien woman who has no right to do anything without her husband's permission.

Ali has been accused of perpetuating stereotypes about Bangladeshi communities in London and Bangladesh, and in response she has vehemently denounced the "representational burden" she says her novel was placed on, stressing the importance of representation. As a result, the protagonist shifts from submission to independence, demonstrating the woman's ability to direct her own destiny. Nazneen copes with her new life and oppression by engaging in small comic and subversive acts to defy her husband.

### **The God of Small Things: an oppressive picture family rule**

In her novel *The God of Small Things*, Arundhati Roy portrayed the worst of women's family relationships. Ammu's life as a divorced woman with her parents and brother Chacko was not easy; on the contrary, they treated her and her children terribly. Ammu, the main character, is imprisoned all her life. She lives like the second because of her parents' traditional beliefs. In addition, her position as a single mother of two children in the family is weakened. Ammu is under constant mental pressure and tortured by her relatives. Ammu felt like a prisoner in Ayemenem. Pappachi thinks college is an unnecessary expense for a girl, so she is forced to drop out of college. She is slowly sinking into despair. She dreamed all day about running away from Ayemenem and her irritable father and bitter, patient mother. She has devised a series of hideous plans. One of them



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eventually found a job. Pappachi agreed to let her spend the summer with a distant aunt in Calcutta (Roy, 1997, pp. 38-39).

In contemporary Indian society, with a focus on familial injustice in Keralite India, Ammu is depicted as a tragic figure, a woman battling her family, motherhood, and society. She also represents women who sacrifice themselves in order to find their identity. A divorced daughter, according to Baby Kochamma, had no place in the family (Roy, 1997, p. 22). Baby Kochamma would rather remain silent about a divorced girl from an intercommunal love marriage (Roy, 1997, pp. 45-46). Ammu's actions are frequently compared to those of her brother, Chacko. While siblings, there are significant differences in concepts such as education and affection. To begin, Ammu's right to education is denied on the grounds that it is expensive and useless for a woman to be educated, whereas Chacko is sent to Oxford, forcing his mother to sell her jewels.

When it comes to love and relationships, Chacko is entitled to fulfill his "Needs" (1997: 168), and his mother, Mammachi, supports the fact that he hangs out with company employees, while Ammu's relationship with Velutha, an untouchable, is to be kept private. In terms of divorce, Ammu is embarrassed and unwelcome when she returns to Ayemenem as a result of a violent marriage. Pappachi's treatment of his daughter demonstrates how his bestial violence influenced "Ammu's" mind. Pappachi is a traditional, envious husband. He's a nutcase who terrorizes his own family. He is a habitual wife beater who mercilessly whips his wife with a brass vase (1997: 50) or his "Ivory handled riding crop" (1997: 181). Though Mammachi is subjected to much of her husband's cruelty, she is a typical "Indian Nari" who shows no repulsion towards her husband and fits in "properly into the conventional scheme of things" (1997: 122).

Mammachi is a skilled violinist, but she is afraid of hurting her husband's pride if she pursues her talent. Mammachi's music lessons end abruptly when her music teacher informs her husband that she is "exceptionally talented" and "potentially concert class." (1997: p.67). Rather than being encouraged, her husband is irritated by his wife's talent and has difficulty dealing with her wife's





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success, which causes him to become more aggressive, even tossing her violin into the water and breaking the bow (1997: p. 48). "He beat her with a brass flower vase every night." The assaults were not new. What was novel was the frequency with which they occurred" (1997: p. 47-48). In fact, he is envious of his wife's success, or green eye, which gradually turns him into a more aggressive guy, culminating in him pitilessly banging her. Mammachi exhibits some resistance to marginalization and patriarchal dominance. She is also a wife who has been physically and mentally abused, who has been subjected to constant torture and trauma, but who has never spoken out. She is not only a passive survivor, but she is also the envy of her entomologist husband.

The novel also tells the story of the next generation, which continues with Rachel, Estha, and Sophie Mol in an endless cycle of misery, pain, and agony. Estha and Rahel are subalterns in the sense that they are politically, financially, and in terms of family, lineage, and community rootless. They must rely on one another because they lack fatherly love and a stable economic foundation. The two children were labeled as "religious (because their father was Hindu and their mother was Syrian Christian) and ethnic (because their father was Bengali and their mother was Keralite)" (1997: p. 91). Furthermore, they were the children of divorced parents. They were not shown typical parental affection.

Though love is always paired with sadness in *The God of Small Things*, gender oppression, low caste oppression, child subjugation, police atrocities, and the hypocrite does not let anyone oppress for personal gain, the more powerful victimizes the less powerful. The diverse power structures are reminiscent of our own society, in which Chacko and Mammachis rule over the weak and powerless.

## **Conclusion**

The female protagonists in this study express their rage and frustration at having difficulty respecting the boundaries of the social space in which they are limited in their ability to grow. The merits of contemplation, introversion, and a refusal to let go of their individual selves distinguish



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the characters. The chosen novels show a genuine concern for issues of fear, anxiety, and the psychological adjustment required by threats to one's identity. The study examined selected texts from feminist spaces in the Indian Subcontinent critically. Leading literary theories have emphasized the importance of understanding literary texts in relation to their contexts. One of these approaches is literary theory, which arose as a result of woman oppression's inability to account for the emancipation of oppressed women all over the world. Throughout this study, I have argued that the selected contemporary novels and theory have a lot to offer each other. Women are subjugated silently within the four walls of Indian Subcontinent patriarchal society. These women, on the other hand, endeavor to liberate from this position thanks to the encouragement of some close friends and family members, this effort is related to feminist face. The novels told the story of distressed and suffering women who are subjected to unfair and inequitable family and social ties.

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## **Triptych "Dedication to Agdam" In the Works of Arif Huseynov (In the Context of Iconographic Analysis)**

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### **Abstract**

Azerbaijani art reflects the processes occurring at all stages of history. On September 27, 2020, the Azerbaijani army fought to protect its territorial integrity as a result of Armenia's violation of the ceasefire again. The Azerbaijani army, who showed heroism for 44 days, won victory by raising our tricolor flag in our cultural capital Shusha on November 8. Agdam, which was occupied by the Armenian army on July 23, 1993, was returned without a war according to the agreement signed between Azerbaijan, Russia and Armenia on November 20, 2020. The theme of Victory is a leitmotif in the works of outstanding artists of Azerbaijani fine art. In this article, the triptych "Dedication to Agdam" created by Arif Huseynov is analyzed in the context of art criticism. .

**Keywords:** Azerbaijan, Victory, Karabakh, Agdam, Arif Huseynov



## Arif Hüseynov Yaradıcılığında “Ağdama İthaf” Triptixi (İkonografik Təhlil Kontekstində)

### Özet

Azərbaycan incəsənəti tarixin bütün mərhələlərində baş verən prosesləri özündə əks etdirir. 2020-ci il 27 sentyabr tarixində Azərbaycan ordusu ermənistanın növbəti dəfə atəşkəsi pozması nəticəsində öz ərazi bütövlüyünü qorumaq üçün mübarizəyə qalxdı. 44 gün ərzində qəhrəmanlıq göstərən Azərbaycan ordusu 8 noyabrda mədəniyyət paytaxtımız Şuşada üçrəngli bayrağımızı ucaldaraq Zəfər qazandı. 23 iyul 1993-cü ildə ermənistan ordusu tərəfindən işğal edilən Ağdam, 2020-ci il 20 noyabr tarixində Azərbaycan, Rusiya və ermənistan arasında bağlanmış müqaviləyə əsasən müharibəsiz geri qayıtlır. Azərbaycan təsviri sənətinin görkəmli rəssamlarının yaradıcılığında Zəfər mövzusu leitmotiv təşkil edir. Bu məqalədə Arif Hüseynov yaradıcılığında “Ağdama ithaf” triptixi sənətsünaslıq kontekstində təhlil edilmişdir.

**Açar sözlər:** Azərbaycan, Zəfər, Qarabağ, Ağdam, Arif Hüseynov

### Introduction

Azerbaijani art reflects the processes occurring at all stages of history. The Karabakh tragedy that befell our people in the 90s was lived in our art for 30 years. On September 27, 2020, the Azerbaijani army fought to protect its territorial integrity as a result of Armenia's violation of the ceasefire again. The Azerbaijani army, who showed heroism for 44 days, won victory by raising our tricolor flag in our cultural capital Shusha on November 8. The historical success achieved was the realization of a long-awaited dream of artists working in the field of art. The theme of Victory is a leitmotif in the works of outstanding artists of Azerbaijani fine art. The image they create in the compositions is emphasized through more effective colors, lines, and plasticity. People's artist Arif Huseynov is one of the artists who is always distinguished by his patriotic stance. In his work, the series "Garabagname", "Prominent artists of Shusha" occupy an important position in terms of presenting historical and aesthetic views in a complete form.

### The interpretation of the main material





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Agdam, which was occupied by the Armenian army on July 23, 1993, was returned without a war according to the agreement signed between Azerbaijan, Russia and Armenia on November 20, 2020. The city of Agdam was destroyed within 30 years and lost its greatness. In the works of Arif Huseynov, we can see the image of the city called "Hiroshima of the Caucasus" with an impressive color gamut.

The "Dedication to Agdam" triptych was presented in front of the remains of the destroyed Drama Theater of the city, which was liberated from occupation in 2021. The main idea is the struggle between good and evil forces, the disasters that befell our historical land evoke a sense of sadness in every citizen of Azerbaijan. Each part of the triptych is history. The sequence of the artist's position exposes the inhuman face of Armenia, which tries to erase our cultural and historical heritage. People's artist based on historical facts in triptych, executed in 2021 on canvas, acrylic technique.

In the right part of the triptych, the symbolic Shahbulag fortress of Agdam was depicted. According to historians, Panahali Khan, the founder of the Karabakh Khanate, built a castle complex, stone and lime mosques, houses, and a bazaar near the spring known as "Shahbulag" 10 kilometers from the city of Aghdam. The castle got its name from the name of the gurgling spring. The monument, better known as Shahbulag in scientific literature, was the interior of a large palace complex. Shahbulag Castle is one of the simple examples of the military architecture of the Azerbaijani Khanate period. Shahbulag buildings had an impact on the architecture of the Karabakh Khanate, especially the city of Shusha, which was its capital. The fairy-tale characteristic of the artist's work brings a new breath to the work. The image of Panahali Khan and his warriors on the moon is the image of the freedom of their souls.



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**Fig 1. A. Huseynov "Dedication to Agdam" triptych "Shahbulag Castle" (2021) (canvas, acrylic, 60x90 cm)**

In the central part, the destruction of the Agdam theater, characters playing "Leyli and Majnun", "Othello" and "Don Quixote" are killed by evil forces on the stage. Black forces destroyed the famous drama theater after occupying Agdam, Armenia. A ruined theater was presented in the background.



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**Fig 2. A. Huseynov "Dedication to Agdam" triptych "Agdam. Juma Mosque" (2021)  
(canvas, acrylic, 60x90 cm)**

The depiction of Agdam Juma Mosque in the triptych is the preservation and restoration of Islamic religious traditions in the liberated city. When it became an important trade center in the region, one of the examples of the 19th century religious architecture of Karabakh was built in the city. In 1868-1870, this monument, which is a Juma mosque in Aghdam, was erected by the architect Karbalayi Safikhan Karabagi, the leading artist of Karabakh architecture. The architect continued the tradition of Juma mosques with double minarets, widespread in medieval Azerbaijani architecture, and created the image of a mosque in Agdam mosque in accordance with the requirements of his time and the architectural and construction experience of Karabakh. Arif





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Huseynov's composition presented the image of the martyrs who saved the destroyed mosque with their own hands to the sound of the call to prayer.



**Fig 3. A. Huseynov "Dedication to Agdam" triptych "Destruction of Agdam Theater" (2021) (canvas, acrylic, 120x90 cm)**



## Conclusion

The main results of the article "Dedication to Agdam" triptych (in the context of iconographic analysis) by Arif Huseynov are as follows:

- "Dedication to Agdam" triptych was analyzed in the context of art studies
- In the analysis of the work, the historicity of the iconographic analysis method and the image principles of fine art were used

"Dedication to Agdam" triptych occupies an important place in modern Azerbaijani fine art.

After the liberation of Karabakh from occupation, it will be reconstructed and become an example for the countries of the world...

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## Meslek Lisesi Öğrencilerinin Kariyer Seçimleri

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### Özet

Meslek lisesi öğrencilerinin kariyer seçimlerinde öz değerlendirmelerinde yer alan ana unsurlar incelenmektedir. Ayrıca meslek lisesi öğrencilerinin kariyer seçimlerini etkileyen dış faktörler de ele alınarak bu faktörlerin meslek lisesi öğrencilerinin kariyer seçimlerini hangi açılardan etkilediği de tartışılmaktadır. Tüm bu etkenlerin bileşimi olarak ortaya çıkan sonuçlar neticesinde meslek lisesi öğrencilerinin kariyer algısı, kariyer seçimlerini etkileyen faktörlere bütünsel olarak bir yaklaşım sunulacaktır. Bu çalışmada meslek lisesi öğrencilerinin kariyer seçimlerini bu bütünsel yaklaşım içerisinde değerlendiren bir bakış açısının oluşumu hedeflenmektedir.

**Anahtar Kelimeler:** meslek lisesi, meslek lisesi öğrencileri, kariyer seçimleri

## Career Choices of Vocational Students

### Abstract

The main factors in the self-evaluation of vocational high school students in their career choices are examined. In addition, external factors affecting the career choices of vocational high school students are discussed and the aspects in which these factors affect the career choices of vocational high school students are also discussed. As a result of the results that emerge as a combination of all these factors, a holistic approach will be offered to the factors affecting the career perception and career choices of vocational high school students. In this study, it is aimed to establish a perspective that evaluates the career choices of vocational high school students within this holistic approach.

**Keywords:** vocational high school, vocational high school students, career choices





## GİRİŞ

Eğitim, kişileri bilişsel, duygusal ayrıca bedensel olarak, huzurlu ve mutlu yetişmelerini hedefler. Öğrencilerin eğitim üzerinden tecrübe edindikleri her türlü değişim, bireyleri hayatla bütünleştirirken, toplumun işleyiş mekanizmalarındaki çarklar içerisinde bireyin yerini de belirlemesine yardımcı olmaktadır.

Ülkemizdeki eğitim sisteminde de evrensel eğitim temellerinde yer alan temel becerilerin bulunmasıyla yanı sıra ayrıca mesleki bir alan keşfetmesini ya da en azından istihdam edilme ya da asgari ölçekte bir meslek edinebilmesini de içerisinde barındırmaktadır. Bu meslek seçimi ise ağırlıklı olarak ortaöğretim döneminde ele alınmaktadır. Öğrencilerin, bu dönemde, buldukları okul pozisyonlarına göre kariyer basamaklarını şekillendirdiği gibi bu kariyer planlamalarını etkileyen çok faktörlü etkenler söz konusudur. Meslek liseleri gibi doğrudan meslek edindirme temel hedefli liselerde bu durum daha sistematik ilerliyor gibi görünmektedir. 24804 Sayı ve 03.07.2002 Tarihli Resmi Gazetede yer alan MEB Meslek ve Temel Eğitim Yönetmeliği Madde-4 Tanımlarda da yer aldığı üzere, Kapsama Alma: Kanuna göre bir meslek alan/dalında mesleki eğitim uygulamasının başlanmasına karar verilmesi (www.resmigazete.gov.tr, Erişim Tarihi: 23.12.2021). Bu bağlamda, daha spesifik pozisyonda olan meslek lisesi öğrencilerinin hangi mesleğe yöneldiği bir merak konusudur.

Meslek kararı verme davranışında, bireyin karar becerilerindeki güven eksikliğinin, açık bir mesleki kimlik duygusunu yetersizliğinin ve meslek seçiminde karşılaşılan dışsal engeller gibi geçmiş olayların etkili olduğundan, bunların, kendini yetkin görme kuramıyla ilişkili olabileceğinden bahsetmektedirler (Bozgeyikli,2004). Bu bağlamda meslek belirleme, bireyin kişisel güvenin oluşmuş, kimlik duygusunu kazanmış, dış engellerden kaçınabilen, kendine yön verme becerisine sahip bireylerden beklenir bir davranıştır. Kariyerini oluşturabilen ve oluşturduğu kariyer ile mutlu olan toplumsal mutluluğa destek veren bireyler bu öz becerileri tamamlamış kişilerdir. Çünkü meslek seçimi bireyin hayatında çoğu zaman ömrünün sonuna kadar birlikte yol alacağı yoldaşı olacaktır.

Meslek, istisnaları olmakla beraber genel olarak bireyin yaşamı boyunca sürdürdüğü, yaşamını doğrudan etkileyen önemli bir olgu olarak karşımıza çıkmaktadır. Dolayısıyla, meslek seçim süreci, bireyler için karar vermek zorunda oldukları oldukça



önemli bir süreçtir (Kartal, Ayyıldız ve Alp,2020). Mesleğe Yönelme, bireyi yetenek, ilgi ve istekleri doğrultusunda ve gerçekler doğrultusunda bir iş veya meslek seçecek şekilde yönlendirmektir. Eğer söz konusu birey, ortaokul veya lise öğrencisi ise, onu arzu ettiği mesleğe hazırlayacak eğitim-öğretim kurumuna yönelmek; ona, yetenek ve ilgilerini geliştirme olanaklarını tanıtmak ve yaratmak, bunlardan yararlanmasını sağlamaktır (Razon,1983). Bu bağlamda meslek lisesi öğrencilerinin kariyerlerini belirlemeleri beceri ve isteklerine uygun bir işe yönelmeleri doğrultusunda beklenmektedir. MEB Mesleki ve Teknik Eğitim Genel Müdürlüğünün 2020 Eğitim verilen meslek alanları broşürlerinde yer alan yalnızca 47 meslek alanı bulunmaktadır (<http://meslekitanitim.meb.gov.tr/>). Diğer bir söylemle, meslek liseleri öğrencileri henüz meslek lisesi sıralarına oturmadan önce 47 birbirinden farklı çalışma alanı içerisinde kendine en yakın, beceri ve isteklerine uygun bir işe yöneldiği düşünülmektedir. Yönelmiş oldukları okullar ya da bölümler arası geçişler ya da diğer ihtimallerin varlığı da hesaba katıldığı zaman elliden fazla meslek alanından biri seçilerek, kariyer hedef alanı, farkında olunmadan da olsa büyük ölçekte planlandığı görülmektedir. Kısıtlı planlama döneminde farkında olmadan kariyer hedeflerinin önemli bir kısmını planlayan meslek lisesi öğrencileri kariyer kavramından ne anlamaktadır? Kariyer kavramı nasıl anlaşılmalıdır?

### **Kariyer Kavramı**

Türk Dil Kurumu kariyer kavramını; “Bir meslekte zaman ve çalışmayla elde edilen aşama, başarı ve uzmanlık” olarak tanımlamaktadır (Türk Dil Kurumu, 2021). Türkçe’ ye daha sonradan girmiş olsa da kariyer kavramı 16. yy.’lara dayanan geçmişten gelmektedir. Çok fazla otorite tarafından birçok tanımlama yapılmıştır. Genel anlamda ise Fransızca ‘carriere’ kelimesinden yola çıkarak hayat boyu yapılan iş dizini olarak tanımlara yerleşmiş ve iş dünyasında en temel kavramlardan biri olarak yerleşmiştir.

Kariyer kavramının çok eskilere dayanan bir geçmişi vardır. Kariyer kavramı; kişinin kendisini herhangi bir “uzmanlık” alanına adanması, kişinin yaşamı boyunca edindiği tecrübeler dizisi ya da herhangi bir meslek alanının kısım kısım ve devamlı olarak ilerlemesi, tecrübe ve beceri kazanması gibi farklı tanımlar olarak kullanılmaktadır. Diğer bir deyişle asıl ifade edilmek istenen çalışanların iş hayatları sürecinde yaptıkları işlerdeki ya da iş hayatındaki gelişmeleri içeren bir kavram olarak algılanmaktadır. Yani kariyer yaşam ile ilgili seçilen iş hayatını ve bu iş hayatındaki ilerlemeler bütünü olarak düşünülmektedir.



İnsan kaynaklarındaki her geçen gün önem kazanan rekabet, günümüzde stratejik açıdan önemi fark edilmiş ve bu alandaki yönetim sistemlerince alt sistemlerinden biri olarak kabul edilen kariyer başlığına önem verme zorunluluğu ortaya çıkmıştır. Bu zorunluluk henüz alt düzeylerdeki okul çağlarına kadar inmiştir. Fakat en baskın ve belirgin dönem olarak lise çağlarında yoğunlaştığı görülmektedir.

Meslek lisesi öğrencilerinde de kariyer hedefleri ülke standartları göz önünde bulundurularak daha kısa yol olan seçenekler olarak ele alınmaktadır. En hızlı ulaşılabilen hedef kariyer kavramı olarak algılanmaktadır. Bir takım –özellikle ekonomik temelli-sıkıntılar biraz aşıldıktan sonra kariyer kavramının sözlük anlamına ya da hayattaki karşılığına daha yaklaşılmaktadır.

### **Meslek Lisesi Öğrencilerinin Kariyerini Etkileyen Faktörler**

Meslek lisesi öğrencilerinin kariyerlerini etkileyen birçok faktör bulunmaktadır. Bunlardan bazıları direkt öğrencinin öz algısı ile ilgili olsa da bazı faktörler dış etkenli başlıklar altında toplanabilir. Dış etkenler başlık sayısı çok fazla olsa da en etkili ana çatıyı oluşturan birkaç ana başlık incelenecek olsa da bunların arasında ise en etkili olan aile faktörüdür. Ailelerin, hatta aile dışındaki yakın çevrenin dahi bireylerin kariyer planlamalarına yadsınamaz etkileri bulunmaktadır. Çünkü kişiler, hem eğitildiği ilk yer olan aile hem de toplumsal hayatta kimlik kazanmaya başladıkları ilk yer kendi sosyal çevreleridir. Bu nedenle hem ebeveynler hem de ebeveyn dışında aile içindeki bireyler hem de sosyal yakın çevreye dair her kişi, bireylerin kariyer seçimlerinde söylemlerde bulunmaktadır. Bu söylemler de maruz kalınan kişiyi fazlaca etki altına almaktadır.

Meslek lisesi öğrencileri de kariyer seçimlerinde aile faktöründen etkilenmektedir. Sosyal tabakasını değiştirmeye yönelik hedefler içerisinde olunan kariyer seçimleri ön planda bulunmaktadır. Aile etkisi öğrencinin kariyer planlamasında ekonomik temelli gerekçelerden oluşmaktadır. Bu durum kimi zaman, meslek lisesi öğrencisinin üzerine eğitim aldığı meslekten farklı bir kariyer planları ortaya çıkarmaktadır. Ailelerin içinde buldukları birçok faktör öğrencilerin kariyer seçimlerini etkilemektedir. Bu faktörlerden etki seviyesi yüksek olan: ailenin sosyal profili, sosyo ekonomik yapısıdır. Meslek lisesi öğrenci ebeveynleri büyük çoğunlukla sosyo-ekonomik seviyeleri düşük aile profili olmasından kaynaklı bazen aile mesleklerine de yönlendirme bir başka aile



etkisi olarak karşımıza çıkmaktadır. Motor ustası olan babanın, motor bölümünde okuyan oğlu ya da kuaför annenin kuaförlük bölümünde okuyan kızı örneğinde olduğu gibi aile bulunduğu pozisyonu koruma kaygısından kaynaklı aşağı bir yönelmeye karşı çekimser olması sebebiyle dikey yukarı bir yönelme de hedeflenmemektedir. Bu durum da bir başka aile etkisi olarak karşımıza çıkmaktadır. Bazı durumlarda da aile yine ekonomik temelli sebeplerden ivedi bir kazanç sağlama politikası içerisinde meslek lisesi öğrencisinin kariyer hedeflerini ortadan kaldırmaktadır. Bu da aile faktörlerinin en kötüsü olarak başka bir etki olarak karşımıza çıkmaktadır.

Bir bireyin meslek seçimini etkileyen özelliklerden bir tanesinin o bireyin değer yargıları olduğu düşünüldüğünde, bu değer yargıların ailede şekillenmesi durumu ailenin çocuğun toplumla bütünleşmesinde koyduğu standartlara örnektir (Kılıç, 2019). Bu durum ise ailenin doğrudan değil de dolaylı olan etkilerinden olarak karşımıza çıkmaktadır.

Çevrenin etkisi ile çocukların sosyalleşme sürecinde kızların uysal, yumuşak, duyguları denetim altında tutma davranışları, erkek çocukların ise yarışmacı, atak ve atılgan davranışlarını pekiştirilmektedir (Kuzgun, 2014, s. 64; akt. Çaklı, 2020, s.16.). Bu bağlamda toplumsallaşma vazifelerinde kadınların daha duygularını dizginleyerek sürece dahil olma davranışları kontrol altına alınmaya çalışılarak kabul ettirilmeye çalışılırken, erkek öğrencilerin daha katılımcı daha atak daha girişken davranış yapılarını pekiştirilmesi istenmektedir. Sosyalleşme sürecinde erkek modele karşı kadın modelin daha geri plana alınması eylemi doğal olarak eğitim sürecinde akademik dünyalarında da fark edilir bir ayırım ile karşımıza çıkmaktadır. İlerleyen süreçte bu ayrımlarda kadın ile erkek öğrenciler arasında kariyer seçimlerinde de gözle görülür ayrımlara varan etkilerin sonuçları ile karşılaşmaktadır.

Kariyer seçiminde de birçok alanda olduğu gibi doğurgan olan kadının temel görevleri gibi görülen sorumluluklarından dışarı çıkması çok fazla hoş görülmemektedir. Bu olaya çift açıdan bakacak olursak: Meslek lisesi erkek öğrencilerinin kariyere yönelik planlamaya da ihtimalleri meslek lisesi kadın öğrencilere oranla çok daha fazladır. Ancak diğer bir bakış açısı olarak da kariyer planında olan kadın sayısındaki azlık, kariyer planı yapan kadınlar açısından erkeklere oranla daha şansları yüksektir. Sayısı sınırlı işlere daha yüksek oranlarda talepte bulunan erkekler bir tarafta diğer tarafta da eş sınırlı sayıda daha az oranda rakip eşliğinde talepte bulunan kadın vardır. Tüm bu durumların dışınca ayrıca cinsiyet faktöründe kadının çalışma yeri, çalışma saatleri vb. durumların zorlu koşulları



kadın cinsiyeti açısından kariyer planlamasını olumsuz ya da seçenekleri çok daha kısıtlı hale getirmektedir.

Bütün toplumlar, kadınla erkek arasındaki fizyolojik farkı gözeterek, toplumu genelde erkek ve kadın olarak iki gruba ayırmış ve her grubun da statü ve rollerini birbirinden değişik olarak tayin etmiştir (Türkkahraman, Şahin, 2010) Bu rollerin farklı olarak tayin edilmesi ve diğer tüm mevcut durumlar da kariyer planlamasında cinsiyet faktörünün keskin bir etkisi olarak karşımıza çıkmaktadır. Bu cinsiyet faktörü de meslek lisesi öğrencileri gibi daha çok orta ya da alt sosyo-ekonomik durumdaki aile yapısından gelen gruplarda daha hissedilir şekilde yaşanmaktadır. Meslek lisesi öğrencileri arasında cinsiyet faktörü de kadınlar açısından dezavantaj oluşturacak biçimde kariyer seçimlerinde etkili olmaktadır.

Bir başka etken de sosyo-ekonomik durumlardır. Sosyo-ekonomik halleri, tüm toplumlarda ekonomik yapısıyla ve eğitim seviyeleriyle ve hayat tarzları ile farklılık içerisinde olan ve toplumsal gruplara ayrılan sınıfsal yapılar oluşturmuştur. Söz konusu grupların ayrışmasındaki sebep olan etkenler içinde öncelik sırasında mesleki pozisyonlar ve ekonomik seviyeler gelmektedir. Mesleki anlamda kariyer elde etmede varılacak nokta çoğunlukla eğitim ile sağlanır. Eğitimin de sağlanması için belirli bir seviyede bir takım ekonomik güce ihtiyaç vardır. Ülkelerde, eğitim giderlerinin neredeyse tamamının devlet tarafından sağlanamaması, ihtiyaç sahibi bir ebeveynin çocuğunun eğitim imkânını ve şansını en az seviyelere indirmektedir. Fakat eğitime bağlanan değerler tek göstergesi maddi olanaklar değilse de gerekliliği yadsınamaz bir ihtiyaçtır.

Eğitim ve ekonomi ilişkisi makalesinde de çok güzel bir şekilde belirtildiği üzere; daha fazla gelir, eğitimin daha fazla tüketilmesini sağlamaktadır (Carnoy-1989) Bu bağlamda ekonomik durumu daha yüksek olan ailelerin gelirlerine oranla eğitim için harcadığı maddiyatın çok daha fazla olması ardında başarı getirmektedir. Bu durumda da bireyin maddi olanaklarla eğitime ve eğitime bakış açısı farklılaşarak kariyer planlarını doğrudan etkiler hale gelmektedir. Meslek lisesi öğrencilerinin de daha önce bahsettiğimiz gibi genel olarak düşük ekonomik seviye ailelerden oluşmasından kaynaklı hem diğer meslek lisesi öğrencilerine hem de diğer lise türünde okuyan tüm öğrencilere göre kariyer planlamaları ulaşılabildikleri eğitim oranında daha az seçenekli hali almaktadır.



Bu tür dezavantajlı durumları standart seviyelere çekmeye çalışan farkındalık düzeyleri yüksek meslek lisesi öğrencileri hem eğitim olarak hem de çalışma hayatına girerek çift görevi bir arada sürdürmeye çalışmaktadır. Bu durum meslek lisesi öğrencilerinin kariyer planlarını kısmi ölçekte de olsa daha geniş perdelere yaymasını sağlamaktadır.

Kariyer kaygısı, genel kaygı ile ilişkilendirilen ve yoğunluğa maruz kalan fiziksel hisler, düşünceler ve duyguların bir araya gelmesiyle oluşur (Okutan, Akbaş 2019, s.38). Bu bağlamda kariyer kaygısı bireyin en çok maruz kaldığı alanlardan başlayarak ortaya çıkmaktadır. Bu anlamda da, sosyal çevre bireylerdeki kariyer kaygısını etkileyen en önemli faktörlerdendir. Bu durum da en çok sınav kaygısı ile kendini göstermektedir. Kariyer kazanımında öncelikli engellerden olarak karşılıklarına çıkan üniversite giriş sınavı ve bu sınavlardaki alan seçimi gibi faktörler meslek lisesi öğrencilerinin alanlarına göre isteyebileceği bölümleri sınırlandırmaktadır. Ayrıca bu sınırlılık içerisinde sosyal kaygılar da eklenmektedir. Bu kararların sağlıklı bir şekilde verilebilmesi, onların mesleki olgunluk düzeyine ve doğru kariyer ilerleme planlarını olumlu yönde etkileyecektir.

Kuşakların ortak özellikleri olabildiği gibi, belirgin şekilde farklı özellikleri de bulunmaktadır. Bu özellikler yöneten ve yönetilen olarak yönetim tarzlarını ve liderliği etkilemektedir (Akdemir, Konakay, Demirkaya, Noyan, Demir, Ağ, Pehlivan, Özdemir, Akduman, Eregez, Öztürk, Balcı, 2013). Kuşaklar arası farklılıkların oluşma temel sebeplerinden bilişim ve internet dünyası farklı meslek kolları oluşturmuştur. Son zamanlarda her türlü mesleğin içerisinde yer alan bilişim hizmetleri, yazılım ve internet pazar dünyasındaki gelişmeler, geleneksel yollardan dışarı çıkıp farklı metotlar ile mesleği icra etme gerekliliği getirmiştir. Bu gereklilikler meslek lisesi öğrencilerindeki kariyer kavramına yeni bakış açıları getirmiştir. Mesleklerini sundukları alanlar değişirse de mesleklerini sunuş biçimlerinin ya da üretim biçimlerinin gün be gün değiştiğinin farkında olmaları seçecekleri kariyer alanlarını etkilemektedir.

## SONUÇ

Kariyer kavramı, öğrenciler açısından birbirinden farklı bakış açısıyla görülen bir olgudur. Meslek lisesi öğrencileri de bu anlamda kariyer kavramını zihinlerinde anlamlandırmaya çalışarak rotalarını çizme çabasıdadır. Bu çaba içerisinde bireysel algılarının dışında kariyer planlamalarını etkileyen dış faktörler daha yoğun bir şekilde kariyerlerini etkilemektedir. Aile faktörü ilk dış etken olmakla birlikte birden fazla biçimde meslek lisesi öğrencilerinin kariyer planlamalarını etkilemektedir. Ailenin





etkileme biçimleri çoğu kez olumlu etken olarak öğrencilerin karşısına çıksa da meslek lisesi öğrencilerinde durum pek böyle olmamaktadır. Ailenin kaygıları meslek lisesi öğrencilerinin kariyerini yanlış yönle sevk edebilecek isteklere dönüştürebilmektedir. Ekonomik etkenler de meslek lisesi öğrencilerinin kariyer planlamalarını uzun vadeye yayarak daha planlı ve sağlıklı seçimler yapılmasını olumsuz yönde etkileyerek, daha kısa yoldan daha hızlı seçimler yapılmasına doğru sürüklemektedir.

Sosyal kaygılar ve baskılar meslek lisesi öğrencileri üzerinde yine ekonomik temelli düşünceler eşliğinde düşünüldüğündeki gibi daha hızlı, kısa yoldan hata payı yüksek kariyer planlamalarına yol açmaktadır. Değişen dünya ve meslek çeşitlerine uyum sağlamak meslek lisesi öğrencileri açısından kendi kuşakları gereği çalışma alanlarını genişletmekte ve kariyer seçeneklerini artırmaktadır. Cinsiyet faktörü gözetildiğinde kadın meslek lisesi öğrencilerinin erkeklere oranla daha dezavantajlı bir zümreyi oluşturduğu fark edilmektedir. Bu bağlamda, meslek lisesi öğrencilerinin kariyer kavramını zihinlerinde anlamlı bir şema olarak oturabilmesi gerekliliği bu anlamda gerek okullar gerekse dış resmi kurumlar tarafından profesyonel destek alması ihtiyacını ortaya koymaktadır. Ayrıca, yine meslek lisesi öğrencilerinin aile faktörü, sosyal çevre faktörü ve bu faktörlerin etkileycilik gücünün büyüklüğü ve olumsuz etkileme gücü düşünüldüğünde, söz konusu profesyonel meslek seçimi desteği gerekliliği bir kez daha ihtiyaç olarak görülecektir.

Söz konusu destek, meslek lisesi öğrencileri adına karar verici nitelikte olmayıp yönlendirme ve destekleme boyutunda sağlanması gerekecektir. Meslek lisesi öğrencilerinin kariyer algıları ve kariyer planlamalarına dair her ayrıntıyı kendi öz süzgeçlerinden geçirerek dış faktörlerin gerekli etkilerini seçerek geliştirmeleri onların karşısına çıkan olası riskleri en aza indireyecektir. Mevcut durumda, meslek lisesi öğrencilerinin kariyer planlamalarının, özellikle dış, tüm etkenlerden bağımsız hareket edebilecek mesleki uygunluk düzeyinde olması beklenmemektedir. Bu beklentilerin şekillenmesi, mesleki tanıtım, kariyer görüşme günleri, bireysel mesleki destek, öz algı düzeylerinin geliştirilmesi, çağın yeniliklerinin farkındalığının artırılması ve cinsiyet faktörünün etkilerinin ortadan kaldırılması gibi yapılacak çalışmalar sonrası gerçekleşecektir. Ülkelerin en temel çalışma gruplarından bir kısmını sağlayan meslek lisesi gibi özel bir hedef kitlenin kariyer planlamalarında, öğrencilerin riske edilmeden profesyonel destek eşliğinde en doğru kariyerlere yönleneceği bilinmektedir.



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## **Successful organizational business communication and its impact on business performance: An intra and inter-organizational perspective**

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### **Abstract**

Intra-firm communication is critical for building synergy amongst internal business units of a firm, where employees from various functional departments and ranks incorporate their decision-making, understanding of organizational objectives, as well as common norms and culture for better organizational effectiveness.

This study builds on and assesses a framework of the causes and consequences of effective communication in business interactions between customer and supplier firms, and also the path for efficient communication within a firm. The proposed study's structural equation modeling (SEM) analysis based on 352 sample responses collected from firm representatives at different job positions ranging from marketing to logistics operations, reveals that, in the frame of reference of intra-organizational communication, organization characteristics and shared values, top management support and style of leadership, as well as information technology, are all significantly related to communication effectiveness. Furthermore, the frequency and variety of interactions enhance the outcome of communication, that improves a company's performance.



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The results reveal that cultural factors are significantly related to communication effectiveness, as well as the shared beliefs and goals. In terms of organizational factors, leadership style, top management support and information technology are significant determinants of effective communication. Among the contextual factors, interaction frequency and diversity are found to be priority factors. This study also tests the relationship between supplier and supplier firm performance in the context of communication effectiveness, and finds that they are closely related, when trust and commitment is built between business partners. When firms do business in other multicultural contexts, language and shared values with destination country must be considered significant elements of communication process.

**Keywords:** Intra-firm communication, inter-firm communication, business performance

## Introduction

The process of corporate globalization includes resolving barriers to good cross-cultural communications between stakeholders (Scollon & Scollon, 2001). Cross-cultural communication involves executives, salespeople, suppliers, and customers. Effective communication can involve an oral manner of presenting information to a party with the goal of enabling the passage of the points across, such as when an individual chooses to actively listen with the goal of acquiring a clear comprehension of a conversation or message communicated to them. According to the findings of the study, individual variables have a significant influence on communication performance and organizational outcomes.

According to Xu and Smith (2005), when small and medium sized enterprises (SMEs) strive to extend their operations globally, they face communication barriers with foreign



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merchants, customers, distributors, and others, resulting in misunderstanding and disagreements.

The term “business communication” relates to messages sent and received by persons for the objectives of business activities and management. Effective communication is critical to the success of any business. Business communication occurs between companies, inside organizations, and among various groups of individuals, such as owners and employees, sellers and buyers, service providers and consumers, salespeople and possibilities (Bisen & Priya, 2009).

The study revealed two types of communication strategies: internal and outward contact. Previously, little attention was paid to communicating effectively as a mediator between the primary determinants and the external factors in commercial contacts between firms and their foreign commercial partners (Bisen & Priya, 2009). We believe that bargaining is a crucial part of business communication. Because of the negotiation process, business partners share opinions, regardless of competing ideas or common interests, in order to find a successful conclusion and strengthen their collaboration. When bargaining partners from different ethnic backgrounds attempt to connect, confusion and conflict can occur (Zhu & Zhu, 2004).

According to the experts, being aware of the distinction can assist break down barriers in information dissemination. Considering the aforementioned factor that affect basic communication outcomes, the purpose of this study is to broaden its investigation and investigate the antecedents of adequate global business information exchange and their relationship to company results obtained, as well as the formation of social connections among trade agreements.



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## **Literature Review** **Effective Communication**

Communication is defined as the process of passing information or messages from one place to another or from one group to another using similarly clear symbols or semantic norms. When there is a purpose or cause to share or exchange information or messages, communication can occur (Lunenburg, 2010). According to Stiff and Mongeau (2016), companies have a defined communication framework that gives norms and regulations for workers to follow while dealing with one another or other stakeholders. Organizations have a clear communication framework in place that gives standards and regulations for workers to follow while dealing including one another or other stakeholders. A smart selection of communication structures may help a firm build the ideal culture. Some companies may permit a randomized or free communication network. This, however, may result in a less strong communication process. According to Watson (2016), every organization must develop a communication system that properly meets their demands. Effective communication methods may be explained even further by a succession of communication theories, such as critical theory, information theory, process of communication model, linear model, transactional model, and post-positive theory.

With the advent of the internet and, in particular, social media, information sharing has continued to evolve in recent years. According to Lipsman, Graham, Rich, and Bruich (2012), social media has had a profound impact on society, altering the way individuals communicate and characterize relationships. Social media encourages people to plan, create, and share information with one another. According to Leonardi, Huysman, and Steinfield (2013), social media incorporates a sophisticated system of web networks that allow the sharing of information or messages with individuals online.





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Organizations use social media platforms to communicate with their customers, which includes telling them about their products and services via marketing initiatives and campaigns. This may assist in acquiring new clients for their products or services, as well as retaining strong connections with existing ones. According to Khang et al. (2012), social media is used in enterprises to handle problems both internally and outside, such as with shareholders, stakeholders, and especially consumers, such as rectifying errors and responding customer inquiries. In this way, the organization fosters a close interaction with the general population. According to Gelms (2012), social media in organizations is helpful in conducting awareness campaign, giving organizations a competitive advantage in the market through product marketing and even brand reputation expansion.

## **Challenges and Barriers of Effective Communication**

Communication is one of the most basic mechanisms that both individuals and organizations must have in place. According to Lunenburg (2010), communication is a critical aspect that allows individuals or organizations to progress in all areas, including engaging with others.

According to Fujishin (2016), the message sent by a sender to a recipient may be less clear than intended. In this regard, the sender must always guarantee that he or she receives some type of response from the information/receiver message's in order to evaluate whether the message/information was fully comprehended. Communication difficulties or hurdles are seen at any stage of communication. According to Rogala and Biaows (2016), when there are problems or hurdles in a process of communication, the messages or information may be lost.



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According to Satapathy, Bhatt, Joshi, and Mishra (2016), a *physical barrier* in businesses includes marked-out portions, such as barrier screens, and locked office doors, which can prohibit outsiders or guests from approaching others for a dialogue or engagement.

Another type of problem that both individuals and organizations may face in their everyday operations is a *physiological barrier*. Some people have physical problems that make it difficult for them to communicate with others, such as those with impaired hearing, reading, or vision. A *perceptual barrier* is defined as a hurdle caused by the fact that some people perceive the world or things distinctively than others. According to Rogala and Biaows (2016), it is nearly impossible to communicate with someone who sees the world in a completely different way than others and reach a similar understanding.

An *emotional barrier* might enter a discourse, resulting in a skewed comprehension or perhaps a wholly twisted message. According to Fujishin (2016), some people or organizations confront situations in which emotions take over a communication process, ignoring facts and allowing subjective emotions to take over, leading to deceit, distrust, fear, or even disbelief.

*Cultural barriers* are a widespread issue in businesses as well as on an individual level. People in society regularly adopt the conduct of others with whom they socialize, even if passively (Smith & Dickson, 2016). Another prevalent difficulty in many organizations and societies is *language barriers*, in which persons unfamiliar with the language, vocabularies, or wordings used in an organization or community may feel excluded. Organizations can also face systematic hurdles, which include a scenario in



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which organizational structures are inadequate or irrelevant, such as a lack of suitable or effective informational structures or communication channels.

*Attitudinal barriers* that prevent people from communicating successfully are also widespread in companies. According to Cutler (2016), personality disorders or conflicts might produce attitudinal hurdles or challenges, resulting in a difficulty comprehending their acts or conduct.

Many businesses frequently face *psychological barriers* that limit how people exchange knowledge at both the individual and organizational levels. Smith and Dickson (2016) describe psychological obstacles as a condition in which an individual is not in their optimal mental state, either socially or intellectually, also referred as a mental illness. Even as companies attempt to enter into the digital realm of communication, the *technological barrier* is a rapidly growing issue.

## **Inter-organizational Communication Process**

Company partnership is an independent process of ongoing connection and message exchange between business partners (Holmlund, 1997). The necessity of good communication has grown tremendously because of globalization and internationalization. To get a greater grasp of the motivations of customer-supplier interactions, its features must also be studied. The major goal of this part is to enhance the basic understanding of B2B customer relationships as well as the current trend in their growth. According to Watkins and Hill (2009), the primary premise of relationship marketing is to create effective and mutually fulfilling relationships with business partners that expand through time.



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## **Intra-organizational Communication Process**

Active communication is required for it to be effective (Suzuki et al., 2018). Communication creates a common space in the context of multinational corporations (MNCs), allowing one business partner access to important knowledge stored by another party. Suzuki et al. (2018) investigated the frequency and relevance of communication in knowledge transmission in an organizational environment. It was discovered that intra-organizational communication is quite beneficial in achieving successful information exchange. Organizational culture is seen as an influential component in intra- and inter-organizational behaviour owing to its influence on the conduct of organizational members interacting internally and externally.

In terms of the long viewpoints, the company is most concerned with its security, effectiveness, and predictability, which are mostly attained through formal procedures. Chien and Wu (2006) discovered in an organizational environment that communication synchronization, resource sharing, connection maintenance, and justice recognition substantially led to marketing competence, which in turn leads to improved firm performance.

## **Systematic Review of Former Studies**

This section provides an overview of previous studies that investigated the antecedents of effective business communication in the B2B context, categorizes the factors to provide richer illustration, such as the role of cultural factors, technological factors, human factors, or others in constructing successful business communication between business parties. Figure 2 depicts the process of identifying and filtering relevant papers for the systematic review. To accomplish the systematic screening, 116 studies (89 from



scientific publications and 27 from other sources) were combined together. 86 papers were chosen for final analysis after a thorough screening procedure based on eligibility and inclusion criteria.

The systematic review technique is used to achieve this goal. Table 1 contains operational definitions for all constructions.

**Table 1. Factors that drive successful business communication**

Factor	Definition	Source
Leadership style	Persistent behavioral model and trait that is articulated in a leader's behavior	Xie et al. (2018)
Information quality	The extent that the message is considered as current, precise, meaningful, and useful	Rieh (2002)
Language	knowing as foreign language as main source of communication success, although non-native speakers of a certain language can have some proficiency in a shared language	Harzing and Feely (2008)
Frequency of interaction	The numbers of information or contacts transacted between the parties of communication	Mohr and Nevin (1990)
Diversity of interaction	the number of diverse documents or information which is exchanged between the parties	Cai et al. (2006)
Formality of interaction	The extent to which needs of communication as well as behaviors are clearly codified into rules, policies, and procedures	Jablin (1987)
Opportunistic behavior	To the extent that self-centered actions are taken contrary to the business partner's interests	Gundlach et al. (1995)
Trust	A belief of a firm that business partner will conduct actions leading to positive results, and will not take unexpected	Anderson and Narus (1990)

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	engagements leading to negative consequences	
Commitment	The longing for continuity characterized by readiness to put in resources into relationship	Gounaris (2005)
Supplier performance	Ability to supply required products and services to the buyer firm	Dobler and Burt (1996)
Buyer performance	Ability of acquiring services, materials, and equipment that are used for the functioning of the firm, and for managing supplier bases	Dumond (1991)
Perceived identification	psychological consequences through which individuals perceive themselves belonged to a group, and valued by others	Lampe et al. (2010)
Satisfaction	An entire post-purchase assessment of the last consumer verdict	Baxter (2012)

## Conceptual Model and Hypotheses

The current research proposes the following hypotheses, as in Table 2:

**Table 2. Hypotheses summary**

Hypothesis	Determinant factor	Moderator	Outcome factor
<i>H1a</i>	Organizational culture		Internal communication
<i>H1b</i>	Organizational culture		External and cross-company communication
<i>H1c</i>	Shared values		Internal communication
<i>H1d</i>	Shared values		External and cross-company communication
<i>H1e</i>	Language		Internal communication
<i>H1f</i>	Language		External and cross-company communication
<i>H2a</i>	Top management support		Internal communication
<i>H2b</i>	Top management support		External and cross-company communication
<i>H2c</i>	Information technology		Internal communication
<i>H2d</i>	Information technology		External and cross-company communication



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			communication
<i>H2e</i>	Leadership style		Internal communication
<i>H2f</i>	Leadership style		External and cross-company communication
<i>H3a</i>	Information quality		Internal communication
<i>H3b</i>	Information quality		External and cross-company communication
<i>H3c</i>	Frequency of interaction		Internal communication
<i>H3d</i>	Frequency of interaction		External and cross-company communication
<i>H3e</i>	Diversity of interaction		Internal communication
<i>H3f</i>	Diversity of interaction		External and cross-company communication
<i>H3g</i>	Formality of interaction		Internal communication
<i>H3h</i>	Formality of interaction		External and cross-company communication
<i>H3i</i>	Opportunistic behavior		Internal communication
<i>H13j</i>	Opportunistic behavior		External and cross-company communication
<i>H4a</i>	Intra-organizational communication		Supplier performance
<i>H4b</i>	Inter-organizational communication		Supplier performance
<i>H4c</i>	Intra-organizational communication		Buyer performance
<i>H4d</i>	Inter-organizational communication		Buyer performance
<i>H5a</i>	Intra-organizational communication		Perceived identification
<i>H5b</i>	Inter-organizational communication		Perceived identification
<i>H6a</i>	Intra-organizational communication		Overall satisfaction
<i>H6b</i>	Inter-organizational communication		Overall satisfaction
<i>H7a</i>	Cultural factors	<b>Trust</b>	Internal communication
<i>H7b</i>	Cultural factors	<b>Trust</b>	External and cross-company communication

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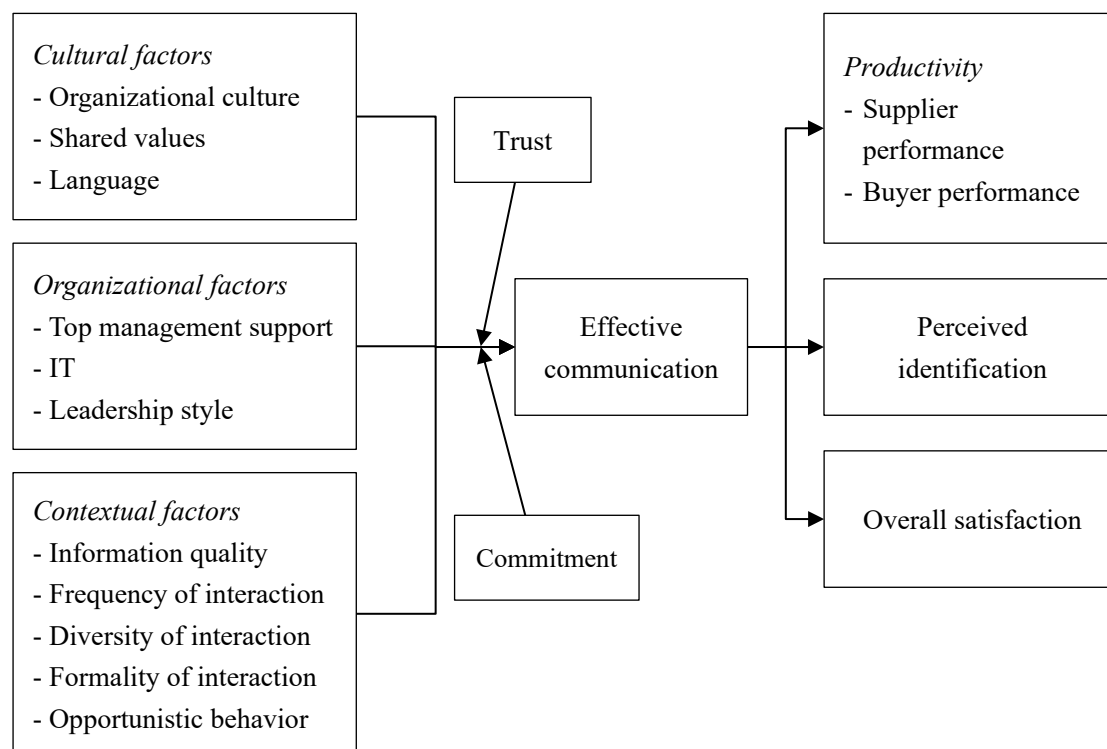


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<i>H8a</i>	Organizational factors	<b>Trust</b>	Internal communication
<i>H8b</i>	Organizational factors	<b>Trust</b>	External and cross-company communication
<i>H9a</i>	Contextual factors	<b>Trust</b>	Internal communication
<i>H9b</i>	Contextual factors	<b>Trust</b>	External and cross-company communication
<i>H10a</i>	Cultural factors	<b>Commitment</b>	Internal communication
<i>H10b</i>	Cultural factors	<b>Commitment</b>	External and cross-company communication
<i>H11a</i>	Organizational factors	<b>Commitment</b>	Internal communication
<i>H11b</i>	Organizational factors	<b>Commitment</b>	External and cross-company communication
<i>H12a</i>	Contextual factors	<b>Commitment</b>	Internal communication
<i>H12b</i>	Contextual factors	<b>Commitment</b>	External and cross-company communication

To summarize, twenty hypotheses are generated in order to thoroughly study the factors of successful communication in business processes and their impact on business outcomes such as performance, social identity, and mutual satisfaction of communication partners. Furthermore, this study distinguishes between internal and external communication to provide light on the communication process that occurs within the company (e.g., among employees, managers, leaders, and so on) and outside of the business (e.g., between buyer and supplier firms). Figure 1 depicts the proposed correlations.



**Figure 1. Proposed model**

## Research Method

To conclude, twenty hypotheses are established in order to completely investigate the elements influencing successful communication in business processes and their impact on business performance and ultimately, social identity, and mutual satisfaction of communication partners. Furthermore, this study differentiates among internal and external communication to provide light on the communication process that takes place within the organization (e.g., among employees, managers, leaders, and so on) and outside of the company (e.g., between buyer and supplier firms).



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## **Sampling**

To reach out to the target respondents, several routes and strategies are employed, such as personal contacts who work at medium and large enterprises with international operations. These contacts were also invited to distribute the survey to their local supply chain partners, and 417 workers from 38 organizations were contacted this way. For the convenience of respondents, the survey questionnaire was created in both online and offline (hard copy) formats. Second, social media sites such as LinkedIn were used to engage with SME leaders and managers.

The technique for gathering data is separated into two stages. First, a pilot survey was conducted. A pilot survey allows researchers to fine-tune small problems based on expert feedback and make necessary changes.

## **Analysis and Results**

The respondents' demographic profile was measured using eleven indicators, including gender, age, education, language skills, job position, firm size, income level, industry in which the firms operate, the type of communication that firms prefer when interacting with their business partners, communication frequency with their partners, and business scale, which refers to how many countries the firms have business partners from.

Following the demographic statistics of the respondents, descriptive statistics such as Mean scores and standard deviations (SD) were provided, which assisted in identifying the respondent firms' major preferences of the factors that significantly affect the effectiveness of business communication with their partners.



The measuring model was provided after the descriptive statistics. Measurement model testing is regarded as an important aspect of the data analysis process, as well as the backbone of hypothesis testing in SEM analysis. In order to validate the measurements in the context of an effective business communication process, measurement model testing includes indicators such as Cronbach's alpha ( $\alpha$ ), indicator factor loadings or confirmatory factor loadings (CFA), composite reliability (CR), and average variance extracted (AVE). Finally, structural model testing was used to assess the provided hypotheses between the variables, which included moderators (trust and commitment). In this part, the outcomes of the hypothesis testing were also provided and briefly discussed. The Explanation section contains a full discussion of the findings.

### **Demographics**

We were able to collect 397 questionnaires from those firms as a consequence of the survey procedure. 45 of the 397 questionnaires were discarded because some of the respondents' replies were repeated, while others' answers were incomplete, potentially increasing the bias if included in the study. In all, 352 replies (89 percent) were included in the analytic procedure.

Male respondents outnumber female responders by a wide margin (57.7%). Regarding their ages, it is found that the majority of them (27.0%) belong to the middle age (35-44) group, followed by the 25-34 age group (24.7%).

Nearly 36% of respondents have a Master's degree, while over 30% have a Bachelor's degree. We also asked the respondents how many languages they spoke. According to the statistics, 32.4% can speak two languages and 29.0% can speak three.



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34.1% work in the marketing department, namely communications and public relations personnel, marketing analysts, and 31.8% work as managers, with managers being important decision-makers in local and worldwide contacts with supplier and customer organizations. Purchasing managers, accounting managers, quality control managers, and executive assistants are the most common answers in management roles. Finally, approximately 18.2% work as sales agents with direct contact with other business partners. Firm-specific questions suggest that 36.4% of respondents' enterprises employ 50 to 100 people, with 33.2% employing 101 to 300 people.

## **Descriptive Statistics**

The descriptive statistics in the current study comprised the means and standard deviations of the variables as well as the items that represented them. Trust has the highest mean score ( $M = 3.62$ ,  $SD = 1.26$ ), followed by Transformational leadership ( $M = 3.54$ ,  $SD = 1.61$ ), Productivity ( $M = 3.53$ ,  $SD = 1.24$ ), and Perceived identity ( $M = 3.52$ ,  $SD = 0.93$ ), according to the descriptive data.

Transactional leadership has the lowest score ( $M = 2.49$ ,  $SD = 0.81$ ), indicating that in today's global corporate climate, people favour transformational leadership above transactional leadership. Furthermore, Market culture is shown to have a lower mean score ( $M = 2.50$ ,  $SD = 0.94$ ). It demonstrates that respondents are likewise concerned about their companies' internal culture. Adhocracy culture has a higher mean score ( $M = 3.43$ ,  $SD = 1.24$ ), indicating that they believe that in the modern era, firms must put more effort into transforming the inner organizational culture, which must be innovation-oriented, support individual decision-making across different business units, and provide individualized attention to each employee, all of which can lead to a strong organizational structure.





## Measurement Model

Based on the classification of the Cronbach findings of the study variables in relation to the above cut-off points, fourteen variables, namely, Shared values, Language, Information technology, Adhocracy culture, Market culture, Hierarchy culture, Top management support, Transformational leadership, Frequency of information, Diversity of interaction, Trust, Satisfaction, Perceived identification, and Productivity, demonstrated high reliability between 0.70 and 0.90. Among these factors, Adhocracy culture ( $\alpha$  - 0.89), Perceived identification ( $\alpha$  - 0.87), Transformational leadership ( $\alpha$  - 0.86), Market culture ( $\alpha$  - 0.85), and Productivity ( $\alpha$  - 0.83) shown stronger dependability when compared to others. Seven factors, namely Effective communication ( $\alpha$  - 0.69), Information quality ( $\alpha$  - 0.68), Transactional leadership ( $\alpha$  - 0.67), Commitment ( $\alpha$  - 0.66), Clan culture ( $\alpha$  - 0.66), Opportunistic conduct ( $\alpha$  - 0.63), and Formality of interaction ( $\alpha$  - 0.62), demonstrated moderate dependability.

All convergent validity test conditions have been satisfied. Three items (TRCL2, IQ5, and DI2) were removed from the CFA because they did not load on their related construct. Furthermore, CR values vary from 0.69 to 0.85, while AVE values range from 0.51 to 0.66.

## Goodness of Fit

The results show that both models meet the pre-defined criteria, showing that the model is well-fitting. Kline (2005) and McDonald and Ho (2002) recommended values for Chi square/df, also known as the degree of freedom, Tucker-Lewis Index (TLI), Comparative Fit Index (CFI), Root Mean Square Error for Approximation (RMSEA), and Standardized Root Mean Residual (SRMR), which all demonstrated acceptable



results and internal consistency of the research variables (see Table 3).

**Table 3. Goodness of fit indices**

	Chi square/d.f	CFI	TLI	RMSEA	SRMR
Accepted value	<3.00	≥0.90	≥0.90	<0.08	<0.05
Model 1	1.32	0.94	0.92	0.05	0.03
Model 2	1.28	0.92	0.94	0.04	0.02

## Structural Model

### *Intra-organizational communication*

The hypothesis findings demonstrate that among the cultural components, Organizational culture ( $\beta = 0.231^{**}$ ,  $p$  0.01) and Shared values ( $\beta = 0.244^{**}$ ,  $p$  0.01) are positively and substantially associated to Effective communication among workers, however Language ( $\beta = 0.017$ ,  $p = 0.487$ ) does not. As a result, *H1a* and *H1c* are accepted, whereas *H1e* is denied. This conclusion can be explained by the fact that language is not a key predictor of communication success in intra-firm relationships. Because employees may speak the same language, there is no language barrier between them. However, organizational culture is crucial.

Other organizational elements that influenced effective communication were top management support, information technology, and leadership style. Top management support ( $\beta = 0.227^{**}$ ,  $p$  0.01) and leadership style ( $\beta = 0.316^{***}$ ,  $p$  0.001) are shown to be favourably and substantially associated to Effective communication, but information technology ( $\beta = 0.101^*$ ,  $p$  0.05) has a marginally significant impact on Effective communication. It appears that technology instruments are not the mechanism by which communication efficacy in intra-firm interactions is determined, rather excellent leadership skills of managers and team leaders, as well as backing from higher



management, are thought to improve communication among subordinates. As a result, *H2b*, *H2c*, and *H2e* were all supported.

Among the contextual factors, it is discovered that Frequency of interaction ( $\beta = 0.174^*$ ,  $p < 0.05$ ) and Diversity of interaction ( $\beta = 0.213^*$ ,  $p < 0.05$ ) affect Effective communication slightly significantly and positively, whereas Formality of interaction ( $\beta = -0.108^*$ ,  $p < 0.05$ ) and Opportunistic behaviour ( $\beta = -0.310^{***}$ ,  $p < 0.001$ ) are negatively related to Effective communication. Furthermore, information quality ( $\beta = 0.016$ ,  $p = 0.376$ ) has no relationship with effective communication. Furthermore, *H3c*, *H3e*, *H3g*, and *H3i* are supported, however *H3a* is not.

Supplier performance ( $\beta = 0.269^{**}$ ,  $p < 0.01$ ), Buyer performance ( $\beta = 0.307^{***}$ ,  $p < 0.001$ ), Perceived identification ( $\beta = 0.246^{**}$ ,  $p < 0.01$ ), and Overall satisfaction ( $\beta = 0.259^{**}$ ,  $p < 0.01$ ) are found to be positively and substantially associated to effective communication. Finally, higher satisfaction rate will be accomplished. Hence, *H4a*, *H4c*, *H5a*, and *H6a* are supported.

Trust and Commitment were tested in internal communication process as well. Trust is found to strongly moderate the relationships of cultural factors ( $\beta = 0.423^{***}$ ,  $p < 0.001$ ) and organizational factors ( $\beta = 0.377^{***}$ ,  $p < 0.001$ ) with Effective communication, while it does not have a moderating effect on correlation between Contextual factors ( $\beta = 0.003$ ,  $p = 0.276$ ) and Effective communication. Moreover, *H7a* and *H8a* are confirmed, whereas *H9a* is rejected. In the context of commitment, it only has a moderating impact on the correlation between Organizational factors and Effective communication ( $\beta = 0.228^{**}$ ,  $p < 0.01$ ), whereas it has no moderating impact on correlation between the Cultural factors ( $\beta = -0.013$ ,  $p = 0.251$ ) and Contextual factors



( $\beta = 0.038$ ,  $p = 0.191$ ). Hence, *H11a* is supported, while *H10a* and *H12a* are rejected.

### ***Inter-organizational communication***

The findings show that organizational culture ( $\beta = 0.248^{**}$ ,  $p 0.01$ ), shared values ( $\beta = 0.221^{**}$ ,  $p 0.01$ ), and language ( $\beta = 0.316^{***}$ ,  $p 0.001$ ) all have a positive and substantial influence on effective communication. As a result, *H1b*, *H1d*, and *H1f* are supported. This conclusion can be explained by the fact that language is a crucial indication of creating successful commercial collaborations with abroad enterprises in intra-firm connections. Language may not be significant in an internal organizational context.

Organizational characteristics such as top management support, information technology, and leadership style were also investigated as potential predictors of effective communication. It is discovered that top management support ( $\beta = 0.245^{**}$ ,  $p 0.01$ ) and information technology ( $\beta = 0.281^{**}$ ,  $p 0.01$ ) are positively and substantially connected to Effective communication, however leadership style ( $\beta = 0.097$ ,  $p = 0.219$ ) has no effect. Hence, *H2b* and *H2d* are supported, while *H2f* is not supported.

Frequency of interaction ( $\beta = 0.116^*$ ,  $p < 0.05$ ), and Diversity of interaction ( $\beta = 0.183^*$ ,  $p < 0.05$ ) significantly and positively influence Effective communication, whereas Formality of interaction ( $\beta = 0.023$ ,  $p = 0.205$ ) is not related to Effective communication. In addition, and Opportunistic behavior ( $\beta = -0.243^{**}$ ,  $p < 0.01$ ) is negatively related to Effective communication. Moreover, *H3b*, *H3d*, *H3f*, and *H3j* are supported, while *H3h* is not supported.



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## Conclusion

The empirical findings supported a major number of the predicted links, allowing the proclamation of excellent communication as a focal point in global business in the realization of specific benefits for both suppliers and buyers. In terms of implementation, adopting an effective cooperative communication strategy and properly determining its determinants can have a positive and long-term impact on successful corporate partnerships (Paulraj et al., 2008). If the goal is to create a low-cost framework for intra- and inter-firm communication, the attractiveness of connections as components should be considered at the same time. To summarize, this research can assist both domestic and foreign enterprises in becoming more socially linked with their international partners and investing in building a global language spoken environment that helps their salesmen and management overcome language barriers. When business partners agree to exchange relevant and diverse information on a regular basis, have the same goals, and speak the same language, they are more likely to build successful communication that will result in positive monetary and social outcomes. A long-term partnership view is essential but not sufficient for delivering decisive advantage in supplier companies, but in buyer enterprises, developing network governance may not be adequate.

Cultural influences may result in a new type of communication process for multinational firms operating in different parts of the world. Nonetheless, because each country and its firms may be a major provider of a variety of products and services ranging from consumer electronics to large industrial products, the model developed in this study could aid future research by increasing the sample size, collecting more information from many other countries and possibly from a country's foreign trading



partners, and conducting a comparative study to distinguish cultural factors from those of their global partners.

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## Reflective Diaries of a Primary School Teacher on Reading Difficulty of a Student with Mild Intellectual Disabled, Attention Deficit and Hyperactivity Disorder

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**Abstract.** In education life, there are students who have reading, writing and learning difficulties in some classes, although not in all classes. Students with mild intellectual disabilities who have reading, writing and learning difficulties are educated in the same classroom environment with their normally developing peers. Primary school teachers prepare a separate plan for mild intellectual disabled students who are different from their peers with normal development and carry out different studies in order to realize the gains in the plan. It is useful for the teacher to keep reflective diaries in order to see the usefulness of his work for mild intellectual disabled students. Thanks to the reflective diaries, the teacher sees the useful or deficient aspects of his work in the classroom. Re-apply useful studies in similar situations. He develops himself in the works that he lacks. Thus, it both supports its own professional development and guides other teachers who have learning difficulties in their classrooms. The aim of this study is to examine a third grade, ten years old student's with mental disability at low level, attention deficit hyperactivity disorder self evaluation on reading disability. For this purpose, the action research method was used which is frequently used in the qualitative research approach. The sample of this study is composed of a third grade primary school selected by means of critical case sampling. The data were obtained from the reflective diaries prepared by the primary school teacher for 8 weeks and the obtained data were analyzed by constant comparative analysis. As a result of the analyses, it was determined that the student had difficulty reading and attention deficit and that the motivation for reading was low. It has been observed that the method of neurological influence for reading difficulties, dialogic reading for reading motivation, and the activities prepared for attention deficit showed positive results. Throughout the resource room process, it has been revealed that the teacher cooperates continuously with the family. Furthermore, the primary school teacher has experienced that students' reading motivation and the physical specialities of books to be read (the type style, type size and images of the books) are significant.



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**Keywords:** Reflective practice, resource room, reading difficulty

### **Introduction**

Resource room is the environment created for the education services offered to students with special education needs, who continue their education in the same class with their peers who do not have disabilities, within the scope of inclusive/integration education practices, by diversifying the programs and enriching the practices for individualization, and by extension practices.. (Ministry of National Education [MEB], 2016: 2). In these rooms, studies are also carried out for students who have reading difficulties in the classroom environment. These students who have reading difficulties; Misreading by mixing letters, inability to match the shape of the letter with its sound, having difficulty in spelling and separating words, making reversals and repetitions, making mistakes in reading aloud, moving to another line by losing their place during reading, falling behind their peers in terms of speed and correct reading, spelling and exhibit inadequacies in comprehension, difficulty in understanding what they read, and not being able to follow the instructions given in the classroom (Akyol, 2003; Cain, 2010; Dağ, 2010; Koçer, 2018; Sidekli & Fire, 2005; Yılmaz, 2008). These deficiencies; genetic factors (İkinci, 2011), readiness to start school, visual discrimination (vision disorders), auditory discrimination (hearing disabilities), verbal language development / delayed language skills, attention deficit, emotional maturation, emotional maturity level, home environment, school environment Physiological reasons, neurological reasons, parents in the separation phase, bilingual speaking, socio-economic level (Akyol, 2001).

### **Methods Used For Reading Difficulties**

It is seen that many methods are used in the literature in order to find solutions to the reading difficulties experienced by students. At the end of the 24-week individualized reading program for primary school sophomores with reading difficulties, the anxiety level reading skill of the student improved to the free level (Dinç, 2017). As a result of the reverberant reading program conducted with a student studying in the 4th grade of primary school, the student's reading aloud errors decreased by 57%; It was determined that the percentage of word recognition increased from 90% to 98%, and the level of comprehension increased from 15% to 85%. In addition, significant improvements were observed in reading aloud skills (Duran & Sezgin, 2012). As a result of the 3P





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method carried out to improve the word recognition and reading skills of the 1st grade secondary school students, the anxiety level reading skill of the student developed towards the instructional level (Dag, 2010). As a result of the 30-day word repetition technique, which was carried out to eliminate a student's reading difficulty, it was successful in overcoming the student's reading difficulty (Ekiz, Erdogan & Uzuner, 2012). As a result of the 90-day chorus, repeated and assisted reading program conducted with 6 students with reading difficulties, there was a significant difference between the percentage of word recognition in informative texts, the number of wrongly read words, the number of words they read per minute, and the percentages of reading comprehension; In narrative texts, it was determined that there was a significant difference between the percentage of word recognition, the number of words that were read incorrectly, and the percentages of reading comprehension (Akyol & Kodan, 2016; Uzunkol, 2013). As a result of the 13-hour paired reading program carried out to solve the reading difficulty experienced by a primary school 4th grade student, it was observed that the student's reading and reading comprehension problems decreased (Kardaş İşler & Şahin, 2016). As a result of the neurological influencing method, which was carried out with 9 students attending the 4th grade of primary school, there was an increase in the fluent reading skills (reading speed, correct reading and prosodic reading) and reading comprehension success, as well as on students with reading difficulties as well as students with intermediate and high level reading skills. It has been found to be effective (Baştuğ & Kaman, 2013).

In this study, neurological influence method and word repetition method were used for the reading difficulty of the student; In order to increase reading motivation, an interactive book reading activity was carried out. Neurological influence method; It is a method that lasts for 15 minutes with reading texts appropriate for the level of the student (Rasinski, Padak & Fawcett, 2010), which the teacher follows with the finger so that the student does not lose while reading together with the student, but ends when the student becomes an independent reader (Richek, Caldwell, Jennings & Lerner, 2002). In the word repetition method; After the teacher has the student read a text, he writes all the words that the student misread on a card. Write the words that the student misread and present them to the student by writing them on the cards one by one. The teacher reads the word, the student repeats the word, and each word that is read correctly is removed from the table. The teacher repeats the operations until the misread words are read correctly. (Rosenberg, 1986). In dialogic reading; The roles of the teacher reading the story and the children listening to the story change over time, eventually the teacher becomes an active listener and a questioner. During the reading of the story, the teacher often gives children opportunities to speak, asks questions, explains the unknown words, and helps them learn by repeating the new words learned during the



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reading activity (Justice & Pullen, 2003; Whitehurst et al., 1994). It may be necessary for the teacher to evaluate himself while applying both activities and activities in order to see how well the activities such as neurological influence, word repetition method, dialogic reading and such study.

### **Reflective Practice**

Reflective practice contributes to the teacher thinking about past events and then increasing their future learning situations (Gibson & Purdy, 2012). While doing this, it takes values, assumptions and expectations into account (Larivee, 2008), tries to learn through inquiry and develop an understanding (Smyth, 1992). He develops this understanding through professional exercises and maintains his professional competence in this way (Day, 1999). This assessment, which is called reflection and used in fields such as nursing, medicine, dentistry, community service, and education (Atkinsand & Murphy, 1993; Loughran, 2002; Mamede & Schmidt, 2004; Pollard, 2008; Somerville & Keeling, 2004), reveals thinking. a state of confusion, mental difficulty, hesitation, hesitation or doubt and a research or examination process carried out to find facts and materials to overcome them (Dewey, 1998, p.12). Reflection, explained by Dewey (1933) and later interpreted in detail by Schön (1983), takes into account the time of the action, "reflection-in-action", "reflection on-action" and "reflection on action". Reflection-for-action in action is the ability of an individual to respond immediately and intuitively and produce a solution when an unexpected situation is encountered while an action is going on. In order for reflection in action to take place, the individual must have characteristics such as being conscious, critical thinking and acting quickly. Reflecting on action is going back and evaluating and rethinking actions after the action is over. Reflection for action (Grushka, Hinde-McLeod & Reynold, 2005), which distinguishes between reflection in action and reflection on action in the field of education, is the use of reflection in action and afterward to guide further actions and reconstruct actions (Schön, 1987).

Reflection, which is a part of lifelong learning (Finlay, 2008), is a very useful tool for learning, as it provides an opportunity for in-depth analysis of useful and useless dimensions of experiences (Uline, Wilson & Cordry, 2004). This tool used in teaching has three levels. These are the technical level, the basic step of reflective practice, which is used by less experienced teachers, focusing on the achievement of the determined objectives of the lessons by choosing the appropriate lessons; contextual level that allows teachers to evaluate beliefs, actions, meanings and outcomes, including reflections on uncovering and elaborating what underlies assumptions and practicing in the classroom using a set of strategies; It is a critical reflection that includes the actions



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of questioning moral and ethical issues directly or indirectly with teaching practices, and designs all works related to the planning and implementation process of teachers' teaching (Taggart & Wilson, 1998:2-3). In fact, although the terms "critical reflection", "reflective practice" and "reflection" are related, they are not the same. Because while reflection involves telling and explaining as well as remembering what happened, critical thinking requires evaluating it to a higher level and making changes in concrete evidence (Welsh Government, 2015).

Reflective practice is seen as a synthesis of reflection, self-awareness and critical thinking (Eby, 2000). Because in reflective practice, there is a high-level thinking skill that includes forming hypotheses, working on and testing hypotheses, collecting data by induction and reaching results with a deductive approach (Bigge & Shermis, 1999). This higher-order thinking skill goes through the stages of attention (Loughran, 2002), remembering (re-applying one's experiences depending on the situation), reasoning (associating one's experiences with one's experiences), and reflection (using one's experiences for personal change and future development) (Lee, 2005). . At these stages, the individual participates actively by planning his responsibility (Gelter, 2003). Teachers participating in these stages both develop their own thoughts and improve their students' knowledge (Scheffler, 1968). Within this, they should collect systematic information about what is happening in their classroom at regular intervals, then analyze and evaluate this information in order to compare it with their assumptions and beliefs (Farrell, 2007; practice 2). However, Shoffner (2008: 123) states that "despite teachers' ability to support teaching and learning, reflection is not a common professional behavior". However, teachers reflect their thoughts; By constantly evaluating the teaching process, reviewing the methods and tools they use, they can improve it by making appropriate decisions. In addition, teachers are open to criticisms of their own views and classroom practices, they think about the criticisms and produce alternative solutions. In fact, he will devote himself to the mental, emotional and physical problems of the students and make an effort to solve the problems. In addition, it takes into account all the consequences of the decisions taken in the short or long term, and makes its plans accordingly. He also motivates himself with his reflections and is happy about it. Finally, they prepare their students for the outside world and they can see the future enough to make them see the future (Norton, 1996). In short, reflective teachers do not simply seek solutions and act the same every day, unaware of the sources and effects of their activities. In addition, they try to produce new meanings by using different teaching techniques in their practices (Rodgers, 2002). Teachers, who cannot develop their reflection practice by not doing these, are stuck between undecided decisions, interpretations, assumptions and expectations (Larivee, 2000). Teachers who think reflectively can contribute to their students in social, affective and cognitive areas



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as well as improving themselves. For example, by providing supportive education to a student who has reading difficulties, he can complete what he lacks in any field, and even gain himself proficiency in that field.

### **Purpose of the Research**

The aim of the study is to examine the self-assessment of a student with mild intellectual disability, attention deficit and hyperactivity disorder, through a primary school teacher's reflective diaries. In this study, the teacher examined his own reflective practices under the following themes. For this purpose, answers to the following questions were sought in the study:

1. What difficulties did the primary school teacher encounter while working on the reading difficulty of a student with mild intellectual disability, attention deficit and hyperactivity disorder, and what kind of work did he do to combat the difficulties he faced?
2. Who and where did the primary school teacher get help to deal with the difficulties faced by a student with mild intellectual disability, attention deficit and hyperactivity disorder while working on reading difficulties, what are the emotions he experienced during this process, and what skills did the student gain at the end of the process?
3. What are the experiences of the primary school teacher while working on the reading difficulty of a student with mild intellectual disability, attention deficit and hyperactivity disorder?

### **Importance of Research**

Looking at the literature, it is seen that reflective practice studies are mostly conducted on pre-service teachers. Pre-service teachers' perceptions of how much their personal and professional characteristics overlap with their teacher's characteristics, their assessment of their attitudes and performances towards the profession, their entrepreneurship, the teaching methods and techniques they use in lessons, social and cultural activities, psychological counseling and guidance services, and the development of basic thinking skills. Reflective practice studies were conducted on their practical experiences in lessons, how they see their friends next to themselves in their experiences, their problem solving skills, how reflective practice tendencies are reflected in their demographic characteristics, and their diary writing experiences



(Alkan & Gözal, 2012; Baki, Aydın-Güç & Özmen, 2012; Dervent, 2015; Duban & Yanpar Yelken, 2010; Ekiz, 2006; Gedik, Akhan & Kılıçoğlu, 2014; Köstekçi, 2016; Şahin & Güvercin Çetinoğlu, 2016; Tok, 2008; Turan & Arslan, 2016; Yüksel & Tuncel, 2017, Zeki, 2012 ), All these studies were carried out by the teacher candidates. It is done to support their professional development (Berg, Woody & Bauer, 2002). In addition to pre-service teachers, studies have been conducted to determine the obstacles that school administrators encounter in practice regarding reflective practice, the effects of administrators on facilitating the reflective practice of prospective teachers, and how they affect the professional development of faculty members at the university (Bakioğlu & Dalgıç, 2013; Foong, Nor & Nolan, 2018; Gobena, 2017; İlin, 2014), for teachers, how the demographic characteristics of teachers affect their reflective thoughts, how the current program develops the reflective practice of students, its usability in the learning and teaching process (Alp & Taşkın, 2012), how they can provide a quality environment of trust, how the activities done in the lessons affect the students' attitudes. Reflective practice studies have been carried out to reveal the effect of 2014; Solakumur, Kul, Ünlü & Mülhim, 2017). However, when the studies on reflective practice are examined, it is seen that there is no study that evaluates the self-evaluation of primary school teachers as practitioners. In this study, it is important to see how the work of a primary school teacher for a mildly mentally retarded student, who is always likely to see him in his classroom, and who needs support education, reflects on the child, to determine the teacher's sufficient and deficient aspects and to determine what he does in order to improve himself.

## Method

Action research, which is one of the qualitative research methods, was used in the research. Action research is a systematic research that is carried out both for the teacher to systematically advance his own learning and to solve the problems he encounters, to improve the learning of the students and to improve their own teaching (Ekiz, 2009). The researcher-teacher determines which subjects the student in the resource room has deficiencies in, determines what kind of emotions the researcher experiences in these situations, reflects what kind of interventions he makes in these situations, determines how well these interventions work, and sees what else he does in situations that do not work, and how he increases his own experience. Action research was preferred in order to realize the difference and to see how much it contributed to the development of the student.

## Sample



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The study group of the research was selected through critical case sampling, one of the purposive sampling methods. Critical case sampling is the inclusion of an extraordinary group or people in the research when they occur (Ekiz, 2009). Critical case sampling was used because the student had features such as mild intellectual disability, hyperactivity and attention deficit. Before starting the study, the family of the student was invited to the school and informed about the studies to be carried out with the student, and written permission was obtained that there was no obstacle to the publication of the studies. In order to keep the student's identity confidential, the student was given the nickname Cesur.

Cesur, who is in the 3rd grade of primary school, is 10 years old and is the third child of a family of three siblings. Although the mother and father are high school graduates; mother is a housewife, father is self-employed. He was diagnosed with hyperactivity and attention deficit, as well as being mildly mentally retarded, by the Guidance Research Center. In the interviews with his teacher, it was concluded that Cesur could not even read syllables properly, skipped lines, was ridiculed by his friends when he read the words over and over, so he never participated in reading activities in the classroom environment, and the teacher was not given the opportunity to read after a while. In the interview with the family, it was learned by the family that Cesur had difficulty in reading since the 1st grade and even had difficulties in gaining reading skills, that he could learn the letters after his friends, but that he had difficulty in reading even syllables, and that he did not forget the letters with the support of his mother at home. Problems such as misreading by mixing letters, not being able to match the shape of the letter with its sound, having difficulty in spelling and separating words, making reversals and repetitions, making mistakes in reading aloud, moving to another line by losing its place during reading, experiencing inadequacies in spelling and comprehension, and difficulties in understanding what they read. observed to be alive. Cesur, who was constantly distracted while reading, preferred to play games instead of constantly reading because he felt inadequate about reading. Cesur's attention was drawn to the fact that he was prone to playing games, that could be played, that could be made into reading theaters, that could be played, and that animations and games were played during reading. After a while, he stopped talking about his preference for reading books and playing games.

### **Data Collection Tool**

In the research, after each lesson, what happened in the lesson was transferred to reflective diaries. Reflective diaries are a private record of experiences and are important because they include feelings and thoughts rather than just the day's events





(Allin & Turnock, 2007). In the process of analyzing the written reflective diaries, “constant comparative analysis”, which is frequently used in qualitative research methods, was used (Glaser & Strauss, 1967). In this process, similar data were classified and categories were obtained by examining the data obtained from the reflective diaries and making continuous comparisons. These obtained categories are presented in tables, and the data in the tables are directly quoted from the expressions indicating the feelings and thoughts of the teacher participating in the research.

### **Data Collection and Analysis**

According to the individualized education plan prepared by the primary school teacher, school counselor, school administration and the teacher who will provide support education; In order to eliminate the problems experienced in the Turkish lesson, it was decided that the student should study for a total of 8 hours a week, 4 days a week and 2 hours a day, in the resource room. The neurological effect method was used for the reading difficulty of the student, and after this method, the word repetition technique was used to correct the wrong words that he read in his independent readings. In cases where the student was distracted while reading, activities were carried out to find lost items and draw the symmetry of the items. In cases where reading motivation is low, interactive book reading study was conducted to increase motivation. For interactive book reading, the opinions of two subject field experts were taken beforehand, and activities for a total of sixteen books were prepared and the opinions of two subject field experts were consulted about the suitability of these activities. Necessary additions and deletions were made in line with the opinions of the experts in the subject area and it was made ready for application. In cases where the student had low motivation sixteen times throughout the process, dialogic reading, one of the repeated reading techniques, was applied. In dialogic reading, studies were conducted with the students on shared readings, reading choruses, animations, asking questions about the book, and guessing the rest at certain points in the story.

Reflective diaries were kept of all these studies. The literature on how to keep reflective diaries was searched, the examples in the literature were examined, and the help of a subject matter expert was sought. Reflective diaries kept by the teacher and “constant comparative analysis”, which is frequently used in the analysis of qualitative research methods, were used (Glaser & Strauss, 1967). In this process, similar data were classified and categories were obtained by examining the data obtained from the reflective diaries and making continuous comparisons. The data analyzed by the researcher were also analyzed by a subject area expert. The reliability of the two encodings was calculated with the formula Miles and Huberman (1994). According to



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Miles & Huberman (1994), reliability; it is obtained as a result of dividing the common results by the sum of the results that do not fit with the common results and multiplying by one hundred (Miles and Huberman, 1994: 64). As a result of the reliability study, it was seen that the agreement between coding was 90%. The data were presented in tables and the data in the tables were supported by direct quotations from the diaries of the teacher who carried out the study, expressing his feelings and thoughts.

### **Findings**

In this part of the study, the difficulties encountered in the resource room, the studies carried out for the difficulties encountered, the places where help was received during the preparation and implementation of the studies, the feelings experienced by the teacher in this process, the skills gained by the student at the end of the process and the teacher's experiences throughout the process will be included.

### **Difficulties Encountered in the Resource room and Studies to Eliminate These Difficulties**

It was understood that the student saw himself as inadequate in reading because he could not recognize the letters exactly when he started the literacy process in the first grade, and as a result, he made erroneous readings. Being ridiculed by his friends while he was reading caused the student's reading motivation to decrease, and therefore to a lack of self-confidence in reading.

*“Before the lesson started, I saw Cesur watching outside the window, when she came in, she said to me that she will not read.” (26.03.2018).*

*“I asked him to read the first page of the book. West to his pictures, he did not read the writings. I let him examine the pictures to let his curiosity go. He was constantly examining the picture, not making any effort to read it, just as he was about to read it, he was looking at the pictures again.” (28.03.2018).*

In order to increase reading motivation, I primarily preferred books with plenty of pictures, less writing, and written on quality paper, and I had these books read visually, I increased reading motivation by doing dialogic reading together. In order to increase reading motivation, I also encouraged the premack principle to improve reading self-confidence and made positive reinforcements after the reading activity.



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*“Before you go to the brave class, bring some dialogic reading books today, I love them very much.” (26.04.2018).*

*“The glossy book would have a positive effect on this kid, who had trouble finishing a text before, because he read the one hundred and fourteen-word book in eight minutes and twenty seconds, making fifteen mistakes.” (28.03.2018).*

It was observed that the student with hyperactivity had difficulties in reading the words because of the difficulties in focusing on the reading texts.

*“He wanted to read the book by himself. I let him read, but he was stuck on the words. He was reading one word and waiting for minutes before reading the other word.” (30.04.2018).*

To eliminate the student's lack of attention, I did the lost and found puzzle, drawing the symmetry of objects and shapes, and played table tennis with a glass.

*“Shall we play table tennis with a cup? I asked and we started playing. Although he had difficulty in catching the ball with a glass in the game, which lasted for five minutes, he started to catch the ball towards the end of the game. Then I increased my throwing speed and he was still able to catch the ball. Seeing that he was able to focus on the ball, I felt that he was focused, and I was happy to see that my activity was correct.” (29.03.2018).*

As a result of lack of attention, low motivation to read; It was observed that the student made mistakes such as spelling, misreading words, completing words incorrectly, changing the place of syllables.

*“In reading the wrong word, he read the first or first two syllables of the word and completed the rest to the first word that came to his mind. For example, he read the word in it as drinks.”*

In order to eliminate the student's reading difficulty, the neurological effect method was applied, and after the application of the method, the wrong words read were read over and over again until the words written on 3\*5 cm paper were read correctly. Correctly read words were eliminated, and the activity continued until the incorrectly read words were read correctly. Finally, I reduced the reading errors by having the student read the



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text again.

*“... I said that we would read together with the neurological influencing method. After reading three times, I let him read on his own and noted the words he misread and used the word repetition technique. We continued until we read all the words correctly” (29.03.2018).*

Since the student was at a mild level, he had difficulties in understanding what he read. I asked Wh. questions to find the correct answer at a simple level about the text in order to ensure that he understood what he had read.

*“Then I was able to get answers to the questions I asked about the text at the level of comprehension.”(29.03.2018).*

### **Places to Get Help During Preparation and Implementation of Studies, Skills Acquired by the Student at the End of the Process, Emotions Experienced by the Teacher During the Process**

In order to eliminate the students' reading motivation and reading difficulties, I got the neurological effect method and the word repetition technique, which were made for students with the same characteristics and positive results, from the articles in educational journals.

*“He was reading the first syllable of long words he had not encountered before, adding to the end. For this, we read it three times with the neurological effect I read from the articles.”(27.03.2018).*

I took the activity of finding lost things and drawing the symmetry of things, which I did for the lack of attention of the student, from the websites where educational activities are included and the comments section were used by teachers before and positive results were obtained.

In order to support the student after school, I kept in touch with the family and gave them the necessary warnings about how they should practice their children at home, and helped them to support me in overcoming their children's reading difficulties.

*“At the check-out, her mother asked about her performance and I mentioned that she read well. I asked him to use the word repetition technique, the neurological influence method, which he should do at*



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home.”(07.05.2018).

*“On the way out, I told Cesur that receiving pigeons had a negative effect on her and reduced her motivation. She said she would talk to her child about it. I should do something to help him overcome this obsession.”(02.05.2018).*

As a result of the studies conducted with the student on attention deficit, low reading motivation, and reading difficulties, I saw that the student's self-confidence in reading improved, reading errors decreased, reading speed increased, therefore reading motivation increased.

His mother said, *“My teacher, brave can read fluently now, thanks to you, thank you.”(10.05.2018).* *“Cesur, who could not recognize letters but could read them before, can now read, thank you very much,”* he said (05.04.2018).

*“He looked at the pictures on the pages and commented on them and said, running his fingers over the glossy paper, I love touching these books. Then he wanted to read the book by himself.”(30.04.2018).*

*“When I met with the teacher before coming to the class; He said that he had never had Cesur read in the classroom before, because he could never read, but now he had him read aloud while sharing in the classroom environment, now he can read and I helped him, with thanks.”(05.04.2018).*

Although the student who has constant attention deficit, low reading motivation and reading difficulties cannot make progress in the lessons from time to time, shows stagnation, not being able to reach the desired position of the student, first of all, negative emotions such as anxiety and anger cause me to develop in the long term due to my determined attitude. It made me happy and proud.

*“... it was proud to see that reading has improved, but I still worry if he will make mistakes when he encounters other texts and whether he can read in this time.”(04.04.2017).*

*“...then he wanted to read the book alone and I gave him the opportunity. Cesur, who took a break from texts consisting of sixty words 2-3 times by making various excuses, finished this book in eleven minutes with eleven wrong words without any distraction. This was very gratifying for me.*



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*Because when we first started working, Cesur, who did not know the desire, attention or letters, was now willing and able to finish a book without being distracted. I am happy that I have achieved my goal” (18.04.2018).*

### **Teacher's Experiences During the Process**

Even though I have learned and seen in my student life and in the education books, it is not necessary to work in the same place all the time in order to increase the reading motivation of the students who have mild mental disabilities and hyperactivity and attention deficit, that the continuous course of the lessons while working with these students, even the holidays affect the process negatively, I learned that the physical characteristics of the book (small number of pages, printed on quality paper, plenty of illustrations, appropriate vocabulary) should be good, and most importantly, the student should be given opportunities to see his own progress.

*“He had difficulty reading the book written in a different writing style.”(28.03.2018).*

*“... I saw that taking a break from the lesson for two days affected him negatively”(16.04.2018).*

*“After the sixty-word reading text I took off the internet said, "This is not good, bring it from good books, let me read it," I brought the parrot Oscar, which was looking for its voice from dialogic reading books. We examined the cover of the book, he touched the reliefs on the cover with his hand, he liked the slipperiness. He said I love these books very much” (18.04.2018).*

### **Discussion and Conclusion**

In education life, there are students who have reading, writing and learning difficulties in some classes, although not in all classes. Students with mild intellectual disabilities who have reading, writing and learning difficulties are educated in the same classroom environment with their normally developing peers. Primary school teachers prepare a separate plan for mild intellectual disabled students who are different from their peers with normal development and carry out different studies in order to realize the gains in the plan. It is useful for the teacher to keep reflective diaries in order to see the usefulness of his work for mild intellectual disabled students. Thanks to the reflective diaries, the teacher sees the useful or deficient aspects of his work in the classroom. Re-apply useful studies in similar situations. He develops himself in the works that he lacks.





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Thus, it both supports its own professional development and guides other teachers who have learning difficulties in their classrooms.

Previously, Baştuğ and Kaman, (2013) have shown that the neurological influencing method, which has a positive effect on the reading fluency and reading comprehension skills of the student with reading difficulties, contributes to the skills such as reducing the reading comprehension and reading errors of the mildly mentally retarded student, and increasing the reading speed. Because the neurological influencing method sees how to read automatically and prosodically with the correct pronunciation of words and word groups, it takes the better reader as an example for the places where he has difficulty in reading and can prevent the reader's reading anxiety (Baştuğ & Kaman, 2013).

Dialogic reading was used to increase the reading motivation of the student who developed a negative attitude towards reading and had low motivation due to having negative experiences with reading. Dialogic reading, which is effective in the development of reading attitude (Kotaman, 2008; LaCour, McDonald, Tissington & Thomason, 2013; Lever & Senechal, 2011; Sperling & Head, 2002), is fun such as talking about the story and asking questions in a conversational atmosphere. It has been seen that doing it as a game (Laboo, 2005) increases the student's desire and motivation to read (DeBruin-Parecki & Gear, 2013: cited in Beschorner & Hoffman, 2016).

The student's reading motivation has been increased with the neurological influence method and dialogic reading exercises. Although the aim of the lessons is to overcome the reading difficulties, thanks to the fun reading activities, this purpose is not made to be felt by the students, and as a result of reading by sharing and sometimes by chatting during reading, the student's self-confidence in reading has begun to be gained. Seeing that the student's reading errors have decreased, an increase in reading speed, and comprehension of what he read; It has resulted in an increase in the self-confidence of the student, the success of the applications made by the teacher, and therefore the teacher's happiness.

Attention deficit and hyperactivity disorders are less common in entertaining environments and in environments where the teacher communicates with the student one-on-one (Kaynak-Özmen, 2010). Thanks to the constant communication with the student who had the opportunity to learn one-on-one with the teacher in the resource room, playing games, and entertaining activities that required the student to find the lost item among many items that needed to give attention to one point, the distraction of the student during the lesson was prevented.



One of the resources that will help teachers to follow the innovations in the field of education is the articles in educational journals. In the research, the applications made to increase the reading motivation of the students and to overcome the reading difficulties were taken from the articles in which the positive results were obtained before. It shows that the teacher in the research supports his development by finding useful applications in the field of education from articles. It is also seen that the family is effective in acquiring reading skills at an early age (Sukhram & Hsu, 2012). The fact that the teacher in the study receives support from the family in overcoming the reading difficulty of the student may be an indicator of the importance of the family in reading. In addition, when families spend time with their children, activities such as dialogic reading, shared reading, and reading theaters can create reading sympathy in children.

In order for the child to be willing to read books, the books should have features related to the external structure-form, internal structure-content (Kıbrıs, 2000). The outer cover of the book should be attractive, the pictures in the books should be decorative and explanatory about the text, and they should be written in fonts suitable for their age (Sever, 2003). In the research, especially when dialogic reading was being done, the selection of books with these features attracted the attention of the student, thus allowing him to read visually, prevented him from having difficulty while reading and made him enjoy reading. It can be thought that the fact that the external features of the books are more attractive can be beneficial for such students who experience distraction.

Conducting reading activities that use more than one method such as dialogic reading, shared reading, reading theaters for students with mild intellectual disabilities, attention deficit and hyperactivity problems may be more beneficial in helping such students gain self-confidence, motivation and attitude to reading and understand what they read.

Enriched and differentiated course activities for listening, speaking and writing skills can be planned and trainings can be given in resource rooms for students with mild intellectual disabilities, attention deficit and hyperactivity.

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