



**PATRICIAN COLLEGE OF ARTS AND SCIENCE**

Affiliated to University of Madras  
Chennai



**KONGU ARTS AND SCIENCE COLLEGE**

An Autonomous Institution, Affiliated to Bharathiar University  
Erode

# International Conference on Integrating SDGs into Business Strategies for Sustainability (Hybrid Mode)

Organized by

Department of Accounting & Finance & Corporate Secretaryship,  
PCAS

&

Department of Corporate Secretaryship with CA & Professional  
Accounting,  
KASC

on

20th September, 2024



**Dr. BGR**  
Publications



[drbgrpublications@gmail.com](mailto:drbgrpublications@gmail.com)

Verso Page

Publishing House	Dr. BGR Publications Tuticorin – 05 WhatsApp: 9003494749 E-mail: <a href="mailto:drbgrpublications@gmail.com">drbgrpublications@gmail.com</a> URL: <a href="https://drbgrpublications.in/">https://drbgrpublications.in/</a>
Journal	<i>International Journal of Business and Economics Research</i> (IJBER) e-ISSN: 2455-3921
Title	Proceedings International Conference on Integrating SDGs into Business Strategies for Sustainability (Hybrid Mode)
Organizer	Department of Accounting & Finance & Corporate Secretaryship, Patrician College of Arts and Science, Chennai & Department of Corporate Secretaryship with CA and Professional Accounting, Kongu Arts and Science College (Autonomous), Erode
Edition	First
Year	2024
Pages	436
Product Form	Digital download and Online
Language	English
Country of Publication	India
Access Type	Open Access (OA)
Copyright	Dr. BGR Publications
Edited and typeset by	Dr. BGR Publications
Cover design by	Dr. B.Govindarajan

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## Preface

The 3rd International Conference on Integrating SDGs into Business Strategies for Sustainability brought together scholars, industry leaders, and policymakers from around the world to explore how businesses can effectively align their strategies with the United Nations' Sustainable Development Goals (SDGs). The proceedings of this conference encapsulate a diverse array of research papers, case studies, and discussions that highlight innovative approaches and best practices for embedding sustainability into core business operations.

As we navigate through a rapidly changing global landscape marked by environmental, social, and economic challenges, the role of businesses in fostering sustainable development has never been more crucial. This conference served as a platform for sharing insights on how organizations can contribute to sustainable growth while achieving their own strategic objectives. The presented works reflect a comprehensive understanding of the complexities involved in balancing profitability with sustainability and underscore the importance of collaborative efforts in achieving the SDGs.

This volume aims to provide readers with valuable insights into the latest trends and research findings on sustainable business practices. It is our hope that these proceedings will inspire further academic inquiry and encourage businesses to take proactive steps toward integrating sustainability into their strategies. We extend our sincere gratitude to all the contributors and participants who made this conference a success, and we look forward to continued dialogue and collaboration in our shared quest for a sustainable future.

We hope that this collection of works will serve as a valuable resource for academics, practitioners, and anyone interested in the intersection of business strategy and sustainable development.

- **Editorial Board**

## Acknowledgment

We express our deepest gratitude to the individuals and institutions whose unwavering support and dedication made the 3rd International Conference on Integrating SDGs into Business Strategies for Sustainability a resounding success.

We are profoundly grateful to **Bro. Naveen F, Director & Secretary, PCAS**, for his visionary leadership and continuous encouragement. His guidance was instrumental in shaping the conference's direction and ensuring its alignment with our shared goals of promoting sustainable business practices. We extend our heartfelt appreciation to **Dr. Fatima Vasanth, Academic Director, PCAS**, for her exceptional academic guidance and contribution to the conference's academic integrity. Her insights and leadership were key to the success of this gathering. A special acknowledgment goes to **Dr. Arokiamary Geetha Rufus, Principal, PCAS**, whose dedication and hard work were crucial in the seamless organization and execution of this conference. Her efforts have greatly contributed to the dissemination of knowledge on sustainable development.

Our sincere thanks to **Thiru. P.D. Thangavel, Correspondent, KASC (Autonomous)**, for his invaluable support and commitment to academic excellence, which provided a solid foundation for this event. We are also grateful to **Dr. H. Vasudevan, Principal, KASC (Autonomous)**, for his support and cooperation, which greatly facilitated the collaboration between the institutions and the smooth running of the conference.

Our deepest thanks to the distinguished speakers who shared their expertise and insights, enriching the conference with diverse perspectives:

- **Dr. Sangeetha R, Associate Professor, Christ University, Bangalore**
- **Dr. R. Karaunakaran, Associate Professor, Hawassa University, Ethiopia**
- **Dr. Varalakshmi S, Assistant Professor, Mazoon College, Sultanate of Oman, College of Business & Economics**
- **Dr. Dhanalakshmi B, Assistant Professor, PG and Research Department of Commerce (Aided), Ethiraj College for Women (Autonomous), Chennai**

Your contributions have significantly enhanced the quality and impact of this conference, and we are truly grateful for your participation.

We are honored to have had **Dr. Sultan Ahmed Ismail, M.Sc., M.Phil., Ph.D., D.Sc., Dip.Hr.Edn, Member, State Planning Commission, Government of Tamil Nadu**, as our Chief Guest. His presence and insightful address added immense value to the event, inspiring us all to further our efforts toward sustainability.

We also thank the members of the organizing committee, the editorial team, and all participants for their dedication and hard work, which have made this conference a remarkable success.

To everyone who contributed to this event, we offer our heartfelt thanks. Your collective efforts have made this conference a platform for meaningful dialogue and a catalyst for change in integrating SDGs into business strategies for sustainability.

# Principal's Message



**Dr.H.VASUDEVAN**  
**PRINCIPAL**  
**Kongu Arts and Science College**  
**(Autonomous), Erode.**

A warm and happy greetings to all. I am immensely happy that the Department of Corporate Secretaryship with CA and Professional Accounting of our College and the Department of Corporate Secretaryship and Accounting & Finance of Patrician College of Arts and Science Chennai have jointly organized a hybrid mode of International Conference on “3rd International Conference on Integrating SDGs into Business Strategies for Sustainability” on 20<sup>th</sup> September 2024. It is going to present a collection of research papers on multidimensional ideologies emerging in Humanities in the contemporary rational era.

Humanities is an aggregate study which is divergent from all other domains of learning as studying humanities means studying about everything which concern humans, starting from acknowledging the past, pondering over the present and envisioning the future. Twenty First century is a futuristic era which is facing a very rapid advancement in almost all the aspects in humanities.

Under the able guidance of our Management and tireless efforts of our Faculty members the International Conference continues to march on the way of success with confidence. The precise vision and prophetic decision making powers of our Management has benefited our College to remain competitive and cooperative at the same time.

The dedicated HODs, dynamic Faculty members and disciplined students are the significant features of our College. The role of students in building a nation cannot be overlooked and we are marching our College towards making better humans and capable scholars. On this occasion I would like to wish the academicians, research scholars and students all the very best.

I also congratulate the HODs, Faculty members, research scholars and the students of the Department of Corporate Secretaryship with CA and Professional Accounting, Participants from our and other colleges for their efforts in organizing and participating in this Conference and wish the Conference all the success.



# Correspondent's Message



**Thiru. P.D. THANGAVEL**

**CORRESPONDENT**

**Kongu Arts and Science College**

**(Autonomous), Erode.**

It's a pride that the Department of Corporate Secretaryship with CA and Professional Accounting of our College has organized a hybrid mode of International Conference on “*3rd International Conference on Integrating SDGs into Business Strategies for Sustainability*” on 20<sup>th</sup> September 2024 in association with the Department of Corporate Secretaryship and Accounting & Finance of Patrician College of Arts and Science, Chennai.

**"The Arts and Humanities teach us who we are and what we can be.  
They lie at the very core of the culture of which we're a part"**

says Ronald Wilson Reagan, the former President of United States. In that case, I see this conference as a confederation that aims at exhibiting the ultimate potential of innovative thinking in humans and introspecting our race as a whole. This conference is a resplendent effort whose noble aim is to instill the hope that a resourceful revolution has always been welcomed by the world.

Moreover I feel quite pleased that this stupendous event serves as a saluting platform for numerous academicians, research scholars and students for expressing their own revolutionary interpretations on all the specializations in humanities.

I earnestly congratulate the Faculty members from both the Colleges for such an ingenious step and I view this as a productive outcome of the Management's constant support.

I wish success to everyone who strives for this Conference's success. I wish all the best for all the participants for their willingness in demonstrating ideas in this arena.

# Director & Secretary Message



**BRO. NAVEEN F**  
**DIRECTOR & SECRETARY**  
**Patrician College of Arts and Science**

It is with great pleasure that I present the proceedings of the 3rd International Conference on Integrating SDGs into Business Strategies for Sustainability, organized by the Departments of Corporate Secretaryship and Accounting & Finance at Patrician College of Arts and Science and Kongu Arts and Science College. This conference marks a significant milestone in our shared commitment to fostering sustainable business practices through education and research.

The theme of this conference reflects the growing recognition of the vital role that businesses play in achieving the United Nations Sustainable Development Goals (SDGs). Over the past few days, we have witnessed enriching discussions, innovative research presentations, and insightful panel discussions that explored how businesses can effectively integrate sustainability into their core strategies.

The collaborative efforts of the organizing departments have provided a platform for academics, industry experts, and students to engage in meaningful dialogue and share best practices. The diverse range of topics covered, from sustainable finance to corporate governance and social responsibility, highlights the importance of a multi-disciplinary approach to sustainability.

These proceedings are a testament to the dedication and hard work of all participants and contributors. They encapsulate the wealth of knowledge shared during the conference and serve as a valuable resource for those striving to align business practices with global sustainability goals.

I would like to express my heartfelt appreciation to the organizing committees of Patrician College of Arts and Science and Kongu Arts and Science College for their commitment to this cause. Their efforts have made this conference a resounding success. I am confident that the insights and ideas generated here will inspire positive change and drive the sustainable development agenda forward.

Thank you for your participation and support. Together, let us continue to work towards a more sustainable and equitable future.

# Academic Director's Message



**DR.FATIMA VASANTH**

**ACADEMIC DIRECTOR**

**Patrician College of Arts and Science**

I am happy to know that the Department of Corporate Secretaryship and Accounting and Finance of Patrician College of Arts and Science in collaboration with Kongu Arts and Science College, Erode is organizing an International Conference on “*3rd International Conference on Integrating SDGs into Business Strategies for Sustainability*” on 20<sup>th</sup> September 2024. I am glad that the proceedings of the international conference are published. On this occasion of the release of the journal I am privileged to be part of the program and I congratulate the organizers for selecting this theme for the International conference and organizing it in collaboration with other partners.

In the present context, SDGs has become the watchword in the development sector. Many development initiatives have found natural death due to the absence of proper planning, execution, and monitoring. Economic Development initiatives can be surveyed only when systematic field research is done on the need for the project and a blueprint with definite goals and outcomes.

I am sure that this conference will address the challenges involved in ensuring sustainability and the continuation of the various development initiatives. I congratulate the paper presenters for looking into the multi-dimensional aspects of the theme.

I congratulate the organizers and wish them the success of the International Conference.

# Principal's Message



**DR. AROKIAMARY GEETHA DOSS**

**PRINCIPAL**

**Patrician College of Arts and Science**

Greetings!

It gives me immense pleasure to express my appreciation to the faculty members of the Departments of Corporate Secretaryship and Accounting & Finance of Patrician College and Kongu College of Arts and Science College for initiating this International Conference on the topic “3rd International Conference on Integrating SDGs into Business Strategies for Sustainability” on 20<sup>th</sup> September 2024.

Key themes included sustainable business models, corporate responsibility, and the role of businesses in driving sustainable development. The event facilitated meaningful dialogue on the challenges and opportunities of aligning business strategies with global sustainability goals. It aimed to inspire collaborative efforts toward achieving a sustainable future.

The Conference aims to provide a platform for Researchers and all other stakeholders to come under one roof to exchange ideologies to gain fresh perspectives on the theme of the Conference. It will also provide an opportunity for mediating with Global Partners on the diverse areas of Research and Innovative Practices for future collaborations.

I Congratulate the Editorial Board, Conveners, and the Organizing team for the meticulous effort to make this Conference a successful one.

# Vice Principal's Message



**DR. ANANDAPRIYA B**

**VICE PRINCIPAL (SHIFT I)**

**Patrician College of Arts and Science**

I extend my sincere appreciation to the Departments of Corporate Secretaryship and Accounting & Finance at Patrician College of Arts and Science and Kongu College of Arts and Science for spearheading the International Conference on “3rd International Conference on Integrating SDGs into Business Strategies for Sustainability” on 20<sup>th</sup> September 2024.

The International Conference focused on exploring innovative approaches for embedding the United Nations' Sustainable Development Goals (SDGs) into business practices. Bringing together scholars, industry leaders, and policymakers, the conference provided a platform for sharing research, best practices, and strategic insights.

My best wishes to the Heads of Departments, dedicated faculty, and enthusiastic students for a successful and enlightening event. Your efforts contribute significantly to the academic excellence of our institutions.

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# Cross-Sectoral Partnerships for Advancing Global SDGs: A Review of Best Practices and Future Directions

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## Abstract

*Cross-sectoral partnerships are pivotal in achieving the Sustainable Development Goals (SDGs) set by the United Nations. This paper reviews best practices, examines current challenges, and provides recommendations for enhancing the effectiveness of these partnerships. By analyzing successful case studies and identifying common obstacles, the study highlights how diverse sectors—government, private industry, and civil society—can collaboratively address global challenges. Despite significant progress, challenges such as resource disparities and misaligned objectives persist. The findings suggest that fostering transparent communication, aligning goals, and building mutual trust are essential for advancing SDGs through cross-sectoral partnerships.*

*Keywords: Partnerships, SDG, Sustainable Development Goals, Collaborative Solutions*

## Introduction

The 2030 Agenda for Sustainable Development represents a global commitment to addressing pressing challenges such as poverty, inequality, and climate change. Cross-sectoral partnerships, involving governments, businesses, and non-governmental organizations, are crucial for implementing the SDGs effectively. These collaborations leverage diverse expertise and resources, enabling more comprehensive and scalable solutions. This paper explores the current landscape of such partnerships, evaluates their effectiveness, and identifies best practices and future directions for enhancing their impact.

## Need for Studies

Understanding the dynamics of cross-sectoral partnerships is critical for advancing the SDGs, as these collaborations often drive innovation and resource mobilization. Studies are

needed to evaluate the effectiveness of these partnerships in different contexts, assess their impact on specific SDGs, and identify strategies for overcoming common challenges.

### Limitations of Studies

Existing research often lacks comprehensive data on long-term outcomes and the effectiveness of partnerships across diverse regions. Methodological limitations and variability in partner engagement can affect the reliability of findings. Additionally, there is a need for more case studies that capture the complexity of cross-sectoral collaborations.

### Objectives

1. To evaluate the role and impact of cross-sectoral partnerships in achieving the SDGs.
2. To identify and analyze best practices in successful cross-sectoral collaborations.
3. To assess the challenges and limitations faced by these partnerships and their impact on effectiveness.
4. To provide recommendations for improving the design and implementation of cross-sectoral partnerships.

### Objective Descriptions

1. Objective 1: Evaluating the role and impact of cross-sectoral partnerships involves analyzing various case studies where partnerships have successfully advanced SDGs. This includes examining the roles of each partner, the processes involved, and the outcomes achieved.
2. Identifying best practices requires a detailed review of successful partnerships, focusing on elements such as governance structures, stakeholder engagement, and the alignment of objectives.
3. Assessing challenges involves exploring common issues faced by partnerships, such as conflicting goals, power imbalances, and resource constraints, and how these impact their effectiveness.
4. Recommendations for improving partnerships include strategies for better alignment of objectives, enhancing communication, and leveraging technology. Practical examples and proposed solutions will be discussed.

## Tables

SDG	Title	Relevance to Cross-Sectoral Partnerships
1	No Poverty	Partnerships can coordinate efforts to address poverty through resource pooling and combined expertise.
2	Zero Hunger	Collaboration among governments, NGOs, and private sectors can enhance food security and agricultural sustainability.
3	Good Health and Well-being	Health partnerships can leverage diverse resources to improve healthcare access and outcomes.
4	Quality Education	Educational partnerships can drive innovation in teaching and expand access to quality education.
5	Gender Equality	Cross-sectoral efforts can address gender disparities and promote equality through shared initiatives and policies.
6	Clean Water and Sanitation	Partnerships can improve water infrastructure and sanitation systems through joint investments and expertise.
7	Affordable and Clean Energy	Collaboration can accelerate the transition to renewable energy and improve energy access.
8	Decent Work and Economic Growth	Joint efforts can create job opportunities and stimulate economic growth through inclusive policies.
9	Industry, Innovation, and Infrastructure	Partnerships can drive technological innovation and infrastructure development through shared investments.
10	Reduced Inequality	Cross-sectoral initiatives can target social and economic inequalities through coordinated actions.
11	Sustainable Cities and Communities	Collaborations can enhance urban planning and create sustainable communities through integrated approaches.
12	Responsible Consumption and Production	Partnerships can promote sustainable practices and reduce waste through combined efforts.
13	Climate Action	Cross-sectoral actions can address climate change through joint mitigation and adaptation strategies.
14	Life Below Water	Collaboration can support marine conservation and sustainable ocean use through shared resources and expertise.
15	Life on Land	Partnerships can contribute to the protection of terrestrial ecosystems and biodiversity through joint conservation efforts.
16	Peace, Justice, and Strong Institutions	Cross-sectoral partnerships can promote effective governance and peace-building initiatives.
17	Partnerships for the Goals	Directly related to fostering partnerships and collaborations to achieve all other SDGs.

## Findings

1. Cross-sectoral partnerships enhance resource mobilization and innovation.
2. Successful partnerships often feature clear, shared goals and effective governance structures.
3. Effective communication and mutual trust are crucial for partnership success.
4. Challenges include power imbalances, resource constraints, and misaligned objectives.
5. Transparent reporting and accountability mechanisms improve partnership outcomes.
6. Technology facilitates better coordination and data sharing among partners.
7. Involvement of local communities enhances the relevance and impact of partnerships.
8. Long-term commitment and flexibility are key to sustaining partnerships.
9. Evaluating partnership outcomes requires robust and standardized metrics.
10. Cross-sectoral partnerships often face difficulties in scaling their impact.

## Suggestions

1. Develop standardized frameworks for partnership governance and evaluation.
2. Promote transparency and accountability in partnership operations.
3. Encourage inclusive stakeholder engagement, particularly involving local communities.
4. Leverage technology for improved collaboration and data sharing.
5. Foster long-term commitment through clear, shared objectives.
6. Address power imbalances by ensuring equitable resource distribution.
7. Implement regular monitoring and feedback mechanisms.
8. Facilitate training and capacity-building for partners.
9. Explore innovative financing models to support partnership initiatives.
10. Share best practices and lessons learned across sectors to enhance collaboration.

## Conclusion

Cross-sectoral partnerships are essential for achieving the SDGs, offering innovative solutions and mobilizing resources across diverse sectors. The effectiveness of these partnerships depends on several factors, including clear objectives, strong governance structures, and effective communication. Despite significant progress, challenges such as resource constraints and power imbalances persist, impacting the overall impact of these collaborations. Addressing these issues requires a commitment to transparency, inclusive engagement, and flexible management. By embracing best practices and addressing common

obstacles, cross-sectoral partnerships can significantly advance global sustainability efforts and contribute to the realization of the SDGs.

### Scope for Future Research

Future research should focus on evaluating the long-term impacts of cross-sectoral partnerships on the SDGs, with an emphasis on diverse geographical contexts and sectors. There is a need for more detailed case studies that capture the complexities of partnerships and their outcomes. Additionally, research should explore innovative approaches to overcoming common challenges, such as power imbalances and resource disparities. Investigating the role of emerging technologies and their potential to enhance partnership effectiveness could also provide valuable insights. Collaborative research efforts involving multiple stakeholders can further advance understanding and support the development of more effective partnership models.

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# A Study on Classroom Behaviour of Higher Secondary School Students after Covid-19 with Special Reference to Coimbatore City

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## Abstract

*The COVID-19 pandemic has significantly impacted the educational landscape, particularly in higher secondary schools. The main objective of the study is to study the classroom behaviour of higher secondary school students after Covid-19 and to explore the correlation between academic performance and classroom behaviour of higher secondary school students after covid-19. This study investigates the classroom behaviour of higher secondary school students in Coimbatore City after the pandemic. The research method for the study will be empirical research where both primary and secondary data has been collected. The primary data for the study has been collected through a well-structured questionnaire and the secondary data has been collected through previous studies. The research tool used in the study is percentage analysis. 25 will be the approximate sample size by following convenience sampling. The results revealed significant changes in student behaviour, including increased introversion, decreased attention span, and heightened anxiety.*

*Keywords: COVID-19, classroom behaviour, higher secondary, school students*

## Introduction

The COVID-19 epidemic has disturbed global education systems, resulting in an abrupt transition from traditional classroom settings to virtual learning. Teachers observed notable shifts in the behaviour of their students as classes progressively resumed. Good classroom behaviour is essential for effective learning. Socialization, and a positive school experience. Classroom behaviour encompasses the actions, attitudes, and interactions of students and teachers within an educational setting. Effective classroom behaviour management is crucial for creating a positive learning environment, promoting social skills, and ensuring academic success. School students, ranging from elementary to higher secondary school, exhibits diverse

behaviours, needs, and characteristics, being a school student involves a mix of academic responsibilities, extracurricular activities, social interactions, and personal development.

Higher Secondary School Students are navigating a crucial phase of their educational and personal development. This period often includes significant academic, social, and extracurricular experiences that shape their future. During high school, students' daily activities are shaped by the teachers and the curriculum, which can strongly influence their achievement, motivation, views of education, and life ambitions. They may also begin to develop a heightened sense of agency, and explore their multiple identities in ways that enable a varied and nuanced sense of self.

### Review of Literature

Daniel J, (2020) noted that although educational institutions that usually conduct face to face teaching in classrooms or campuses will resume this form of learning to a certain extent, the special measures they have taken during the COVID 19. The crisis will leave an indelible mark. At acceleration, schools will organize more systematically to track those aspects of technology-based learning that they find most useful.

Kecojevic A, Basch C.H, Sullivan M, Davi N.K (2020) concluded that the Covid -19 pandemic has had a chief terrible effect on the intellectual fitness of students. There is a need to actively help the students.

Radwan E; Radwan A; Radwan W (2020) noted that restricting movement, closing schools, and staying at home during the COVID-19 pandemic may lead to increased levels of domestic violence, loneliness, depression, anxiety, panic and drug abuse among students.

Owusu -Fordjour. C, Koomson C.K, Handson .D (2020) noted that pandemic has harmed learning as many students are not used to learning effectively by themselves. E-learning platform seems to be a challenge for most students due to limited access to the internet and no technical knowledge of devices used.

Khan, A.H *et al* (2020) noted that there is fear of infection, economic insecurity, malnutrition, sedentary lifestyle, and limited or no recreational activities are significantly associated with stress, anxiety, depression and post-traumatic symptoms among home quarantined students



## Objectives

1. To study the classroom behaviour of higher secondary school students after Covid-19.
2. To explore the correlation between academic performance and classroom behaviour of higher secondary school students after covid-19.

## Research Methodology

The research method for the study will be empirical research and only primary data will be collected. The primary data for the study will be collected through a well-structured questionnaire. 25 will be the approximate sample size by following convenience sampling. In first stage the study will choose top 5 government schools and top 5 private schools based on the highest number of student's strength. Collected data will be analysed through the research tool like simple percentage analysis.

## Statement of the Problem

The pandemic's impact on mental health, social skills, and learning routines has created an environment where traditional strategies for managing classroom behaviour may be less effective. These challenges are manifesting in various forms, including increased classroom disruptions, difficulties in adhering to social norms and academic expectations, and variations in students' engagement and motivation levels. Coimbatore is recommended district for doing school and higher education. Most of the people coming from other districts and states to do their education in this district. Hence the researcher has chosen this study area for effective results that can be implemented for school education system of Tamilnadu.

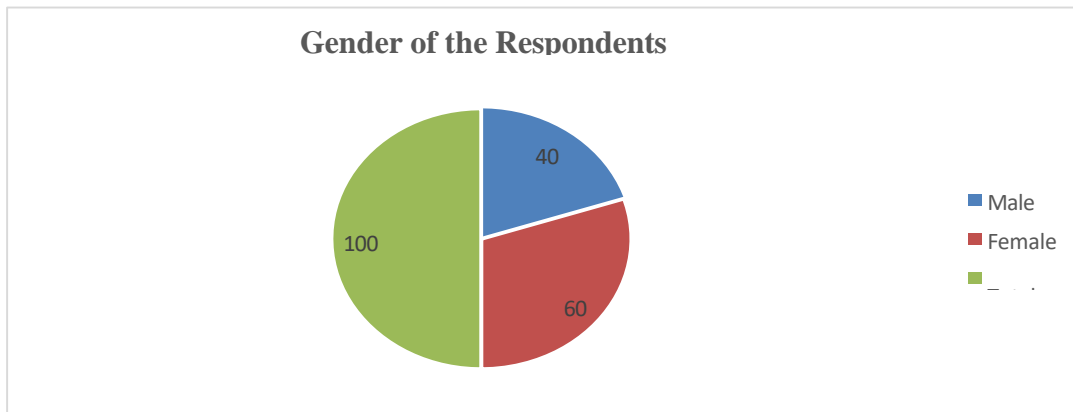
## Research Gap

While global and national studies address post-pandemic educational challenges, there is a lack of localized research focusing specifically on Coimbatore City. Most existing studies generalize findings without accounting for regional cultural, social, and economic factors that may influence classroom behaviour. The connection between mental health issues exacerbated by the pandemic and classroom behaviour in Coimbatore higher secondary schools is under researched. Investigating the relationship between mental health challenges and classroom behaviour in Coimbatore can provide insights into the support needed for students.

## Analysis

### Gender of the Respondents

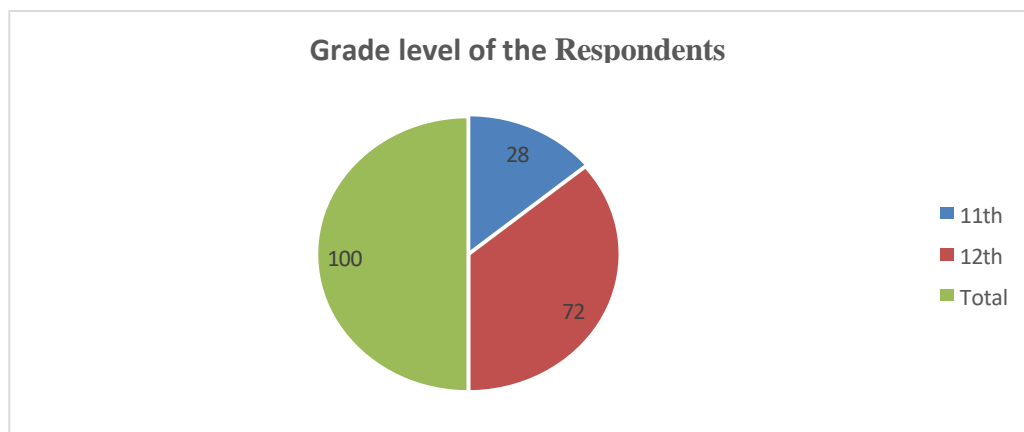
Gender	No. of Respondents	Percentage
Male	10	40
Female	15	60
<b>Total</b>	<b>25</b>	<b>100</b>



**Interpretation:** From the table it is inferred that majority 60% of the respondents are female.

### Grade Level of the respondents

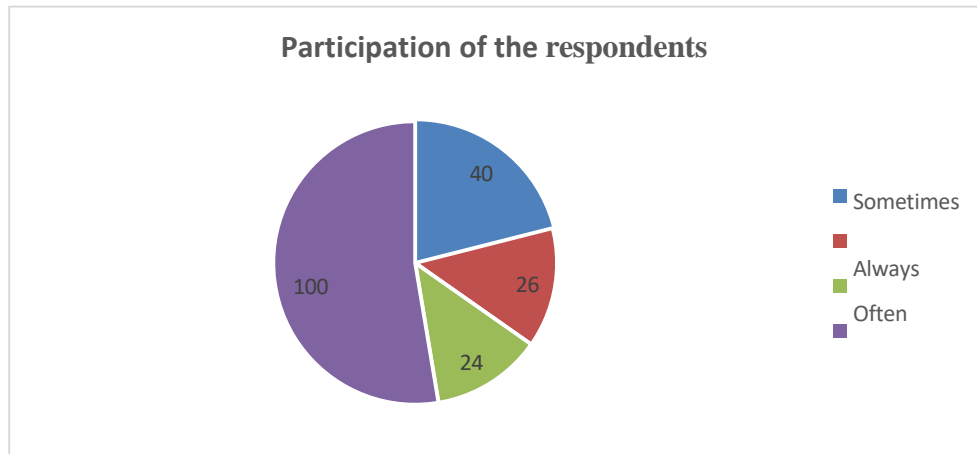
Grade level	No. of Respondents	Percentage
11th	7	28
12 <sup>th</sup>	18	72
<b>Total</b>	<b>25</b>	<b>100</b>



**Interpretation:** From the above table it is inferred that majority 72% of the respondents belongs to 12<sup>th</sup> grade.

**Participation of the respondents in class discussions after covid-19**

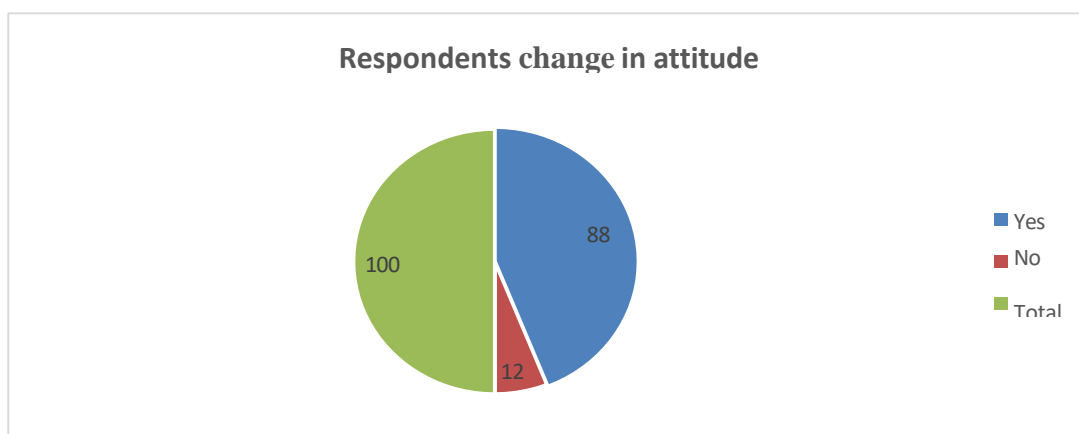
Parameter	No. of Respondents	Percentage
Sometimes	10	40
Always	9	26
Often	6	24
<b>Total</b>	<b>25</b>	<b>100</b>



**Interpretation:** From the above table it is inferred that majority 40 % of the respondents sometimes participate in class discussions after covid-19.

**Respondents changes in behaviour or attitude in class after covid-19**

Parameter	No . of Respondents	Percentage
Yes	22	88
No	3	12
<b>Total</b>	<b>25</b>	<b>100</b>

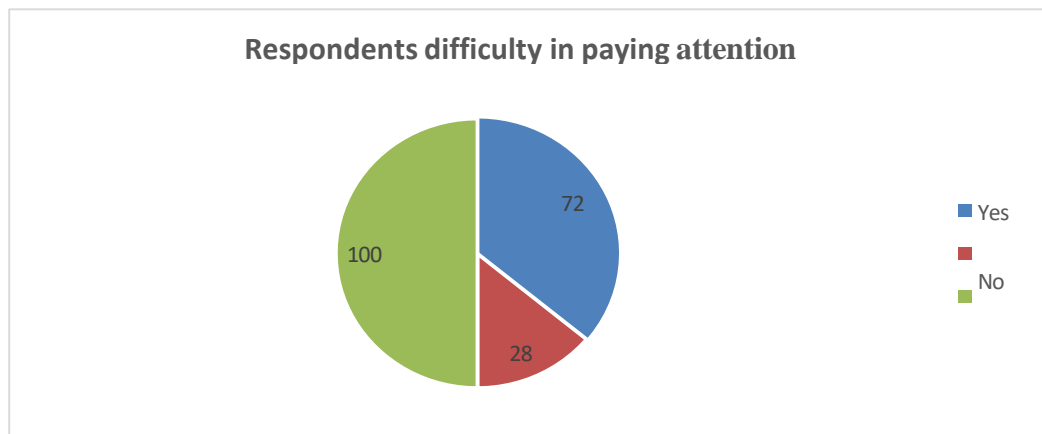


**Interpretation:** From the above table it is inferred that majority 88 % of the respondents face changes in behaviour or attitude in class after covid-19.

**Respondents agreeability towards difficulty in paying attention in class after covid-19**

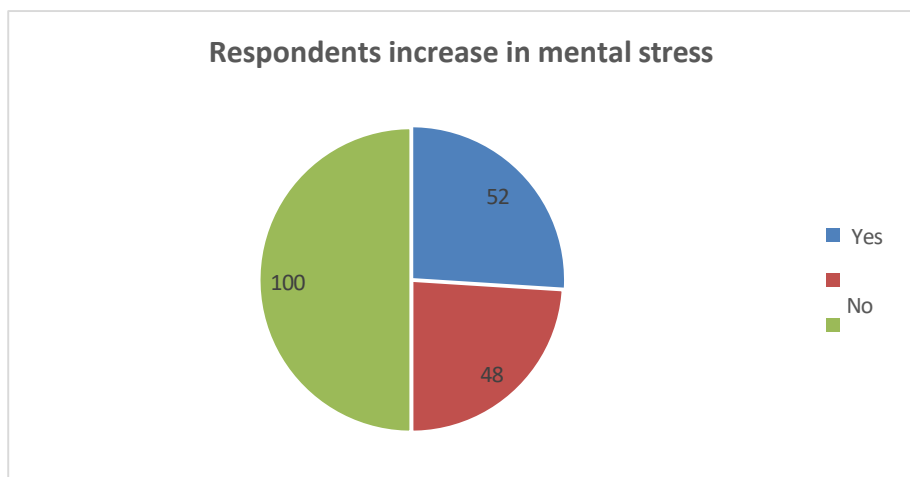
Parameter	No. of Respondents	Percentage
Yes	18	72
No	7	28
<b>Total</b>	<b>25</b>	<b>100</b>

**Interpretation:** From the above table it is inferred that majority 72 % of the respondents feel harder to focus or pay attention in class after covid-19.



**Respondents agreeability towards difficulty in increasing mental stress in classroom after covid-19**

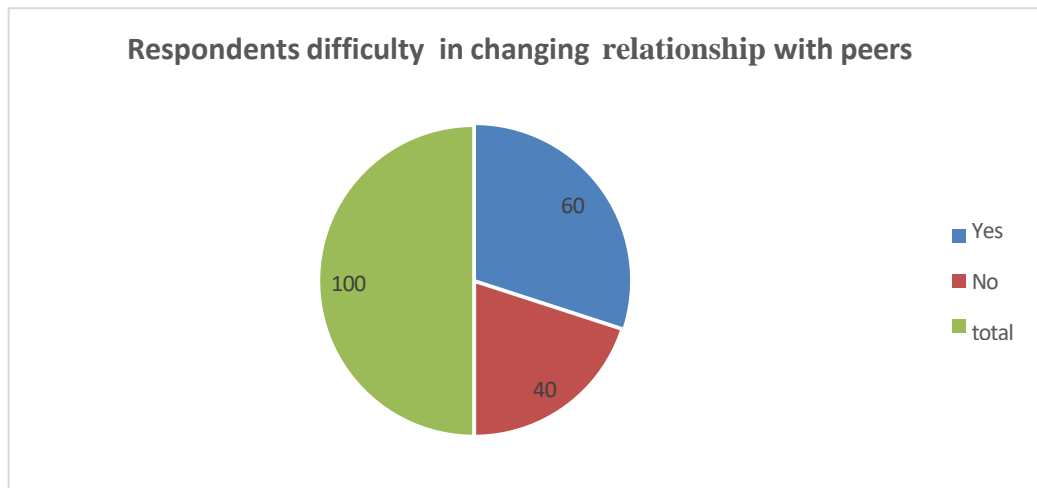
Parameter	No. of Respondents	Percentage
Yes	13	52
No	12	48
<b>Total</b>	<b>25</b>	<b>100</b>



**Interpretation:** From the above table it is inferred that majority 52 % of the respondents face increased anxiety or stress in classroom after covid-19.

**Respondents agreeability towards difficulty in changing relationship with peers after covid-19**

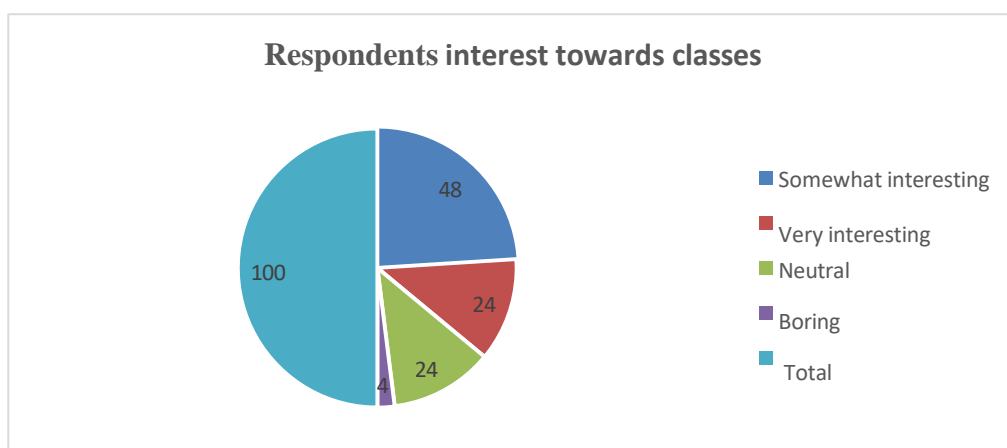
Parameter	No. of Respondents	Percentage
Yes	15	60
No	10	40
<b>Total</b>	<b>25</b>	<b>100</b>



**Interpretation:** From the above table it is inferred that majority 60 % of the respondents have changes in social dynamics or relationship with peers after covid-19.

**Respondents interest towards classes after covid-19?**

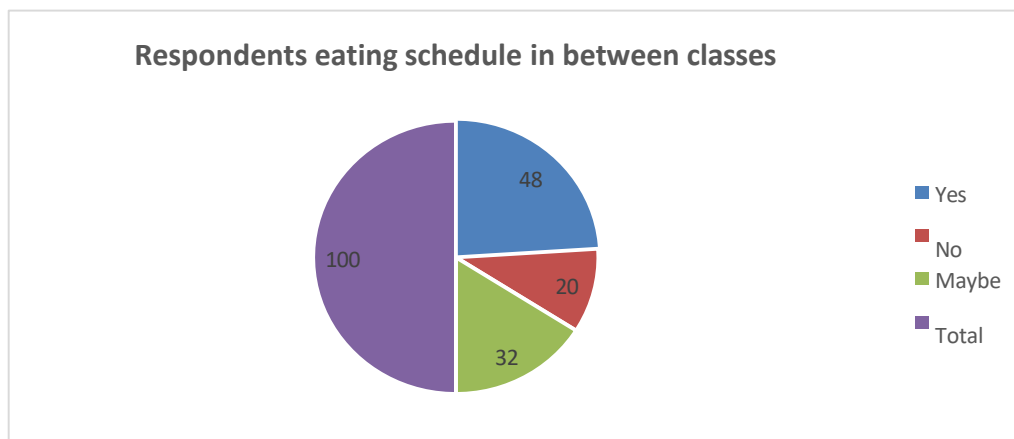
Parameter	No. of Respondents	Percentage
Somewhat interesting	12	48
Very interesting	6	24
Neutral	6	24
Boring	1	4
<b>Total</b>	<b>25</b>	<b>100</b>



**Interpretation:** From the above table it is inferred that majority 48 % of the respondents find the classes somewhat interesting after covid-19.

**Eating schedule of the respondents in between the classes after covid-19**

Parameter	No. of Respondents	Percentage
Yes	12	48
No	5	20
Maybe	8	32
<b>Total</b>	<b>25</b>	<b>100</b>



**Interpretation:** From the above table it is inferred that majority 48 % of the respondents have changes in eating schedule in between classes after covid-19.

**Conclusion**

The findings underscore the need for educators and policymakers to adapt teaching methods and create a supportive learning environment. Recommendations from the above study are Integrating mental health support and wellness programs, Encouraging student participation and interactive learning, Providing training for teachers to address post-pandemic challenges, Fostering a positive school climate through peer support programs.

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# Perceptions of Female Leadership and Its Influence on Student Aspirations: Insights from Coimbatore's Educational Institutions

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## Abstract

*This study explores the perceptions of female leadership in educational institutions and its influence on student aspirations. Drawing on qualitative and quantitative data from both school and college students, the research examines how female leadership is viewed across different educational settings and the impact of these perceptions on students' academic and career goals. The study highlights the challenges and opportunities faced by female leaders in education, considering cultural and societal factors. Findings indicate that positive perceptions of female leadership foster higher aspirations among students, particularly female students, inspiring them to pursue leadership roles and higher education. However, gender biases and stereotypes continue to affect the overall perception of women in leadership positions. The research emphasizes the need for policy reforms and gender-sensitive programs to further promote equality in educational leadership. This research investigates how female administrators affect the goals, drive, and academic performance of their students. According to our data, female leaders improve student results, especially for female students. We look at the impact of inclusive practices, communication tactics, and leadership styles. The report emphasizes how crucial female leadership is to advancing gender parity, raising student confidence, and enhancing educational results. There includes discussion of the implications for gender-sensitive leadership, education policy, and leadership development.*

**Keywords:** *Female leadership, Student aspiration, Stereotypes, Student confidence, Inclusive practices.*



## Introduction

The presence of women in leadership roles are increasing globally, though gender inequities continue, particularly in educational institutions. Women are still not enough in leadership positions despite campaigns to advance gender equality. There are many educational institutions such as schools, colleges, and universities in Coimbatore, Tamil Nadu, India. There are still not enough women in positions of power and influence inside these organizations, making it difficult for women to be represented as leaders. This discrepancy highlights important issues about how students view female leadership and how it affects their goals. According to the research, students, especially girls can be motivated and inspired to pursue leadership roles and build a feeling of self-confidence by being exposed to female leaders. In addition to being change mentors, and role models, female leaders may foster an inclusive and fair learning environment. There are a number of reasons for the underrepresentation of female leaders in Coimbatore's educational institutions, including discrimination, gender bias, and stereotype. The purpose of this study is to investigate how administrators, teachers, and students in Coimbatore's educational institutions view female leadership. It also looks at how these perspectives affect students' goals and proposes solutions for creating a more welcoming and encouraging environment for the growth of female leadership.

## Statement of the Problem

Despite the growing importance of women in leadership roles, educational institutions face a significant gap in fostering female leadership aspirations among students. Although there are notable examples of women taking on leadership roles, many still struggle to break free from societal expectations and are constrained by a lack of structural support. In many cases, women in rural regions face substantial challenges such as lack of access to resources, cultural barriers, and discrimination, which prevent them from fully exercising their leadership potential or achieving success in their roles. As a result, students are often influenced by these gender biases, which shape their views on what constitutes effective leadership and who is capable of holding such positions. This study seeks to explore how these perceptions of female leadership are formed among students and how they, in turn, affect the students' own aspirations for leadership, especially in contexts where women are severely underrepresented and face multiple challenges.

## Objectives

1. To examine students' perceptions of female leadership in educational institutions in Coimbatore
2. To analyze the role of female leadership in creating an inclusive and supportive educational environment.
3. To identify any challenges or barriers faced by female leaders in educational institutions and how these may affect student perceptions and aspirations.

## Review of the Literature

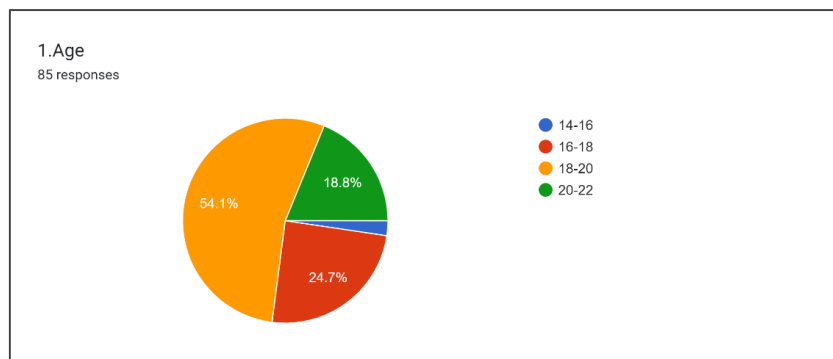
1. **Eagly & Karau (2002)** “Role Congruity and Gender Norms”, which explains how societal gender norms create biases against female leaders. These biases influence how students perceive female leadership, often discouraging them from aspiring to leadership roles.
2. **Hoyt & Simon (2011)** “Impact of Female Leadership Models on Student Aspirations”, this study found that female leaders challenge prevailing gender stereotypes and serve as role models for students. Increased exposure to female leaders boosts leadership and career aspirations in young women.
3. **Kessler & Seifert (2013)** “Gender Equality and Leadership Perception”, explains the visibility of female leaders helps foster gender equality in student perceptions. The study revealed that both male and female students are positively influenced by female leaders, which enhances aspirations to leadership roles across genders.
4. **Wright & Thomas (2015)** “Transformational Leadership and Mentorship”, explains how female leaders who adopt transformational leadership styles—mentoring and empowering students—play a key role in shaping students' leadership aspirations. Their approach, emphasizing empathy and inclusivity, especially inspires students to pursue leadership opportunities.
5. **Sánchez-Moreno *et al* (2020)** “Promoting Gender Equality through Female Leadership” highlights the role of female leadership in promoting gender equality within educational settings. Female leaders contribute to creating environments that support academic and career aspirations, particularly for female students, by challenging existing gender biases and encouraging leadership ambitions.

## Research Methodology

The researcher methodology for this study on Perceptions of Female Leadership and Its Influence on Student Aspirations: Insights from Coimbatore’s Educational Institutions involves a mixed method approach utilising both primary and secondary data. A structured questionnaire was prepared for primary data with a sample size of 85 high school and university students using convenience sampling method with a goal of obtaining quantitative and qualitative trends pertaining to the impact of female leadership. Secondary data are gathered from reports, academic literature, and earlier studies on female leadership. This method works well for comprehending both the statistical patterns and in-depth opinions about female leadership and how it affects students' goals.

## Result and Discussion

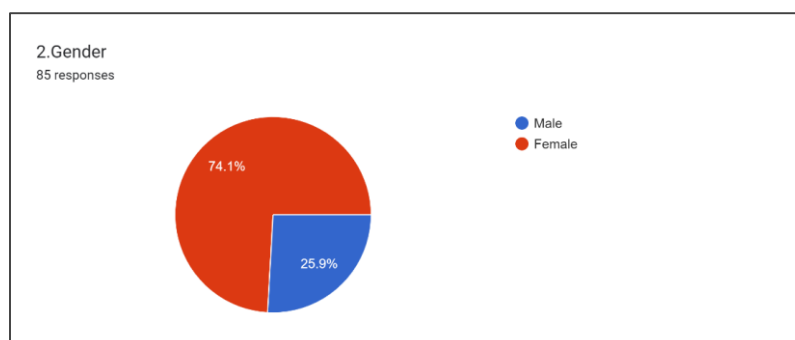
**Chart No 1- Age of the respondents**



The majority of respondents to the study on "Perception of Female Leadership and Its Influence on Student Aspirations" are under the age of 18-20(54.1%), followed by 16-18 (24.7%), 20-22 (18.8%), and a small majority of 1.2% between the ages of 14-18.

*Source: Primary data*

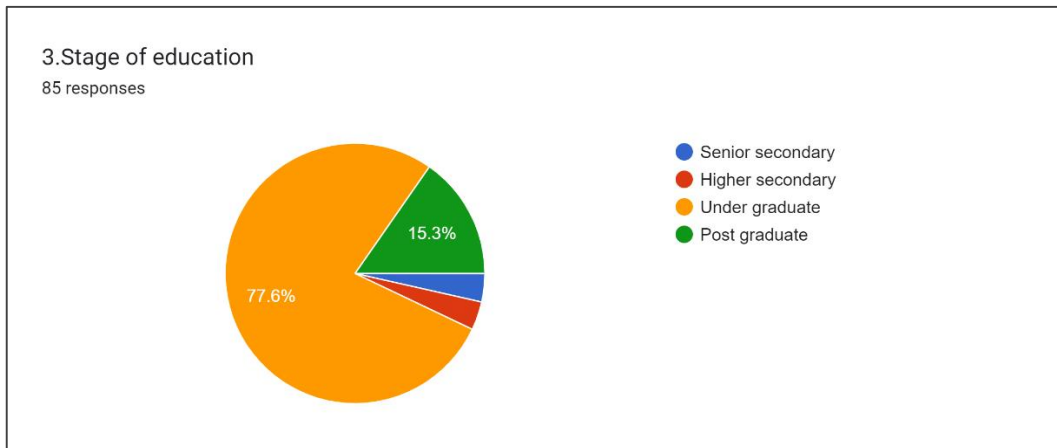
**Chart No 2- Gender of the respondents**



The majority of the respondents are female (74.1%) while male with (25.9%). This indicates higher participation of female in this research.

Source: Primary data

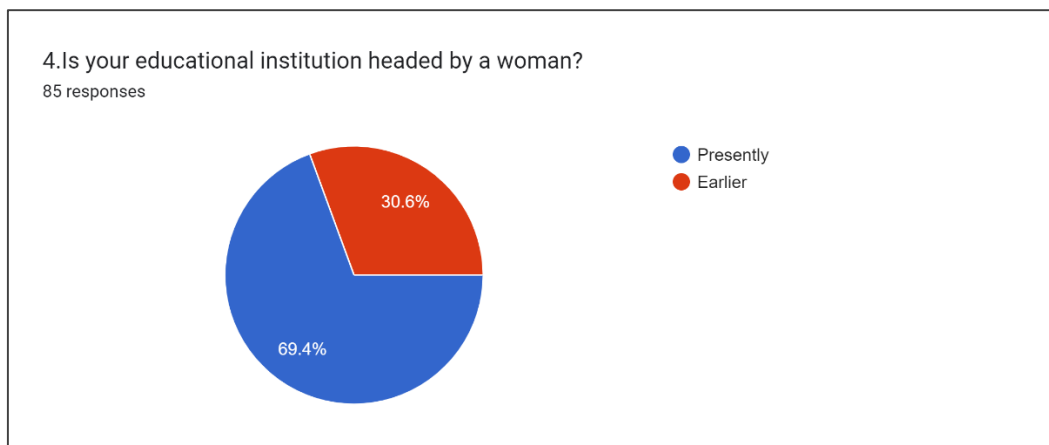
**Chart No 3- Stage of education**



The majority of the students are undergraduate students (77.6%) followed by post graduate students with (15.3%), the least majority of respondents are from senior secondary and higher secondary.

Source: Primary data

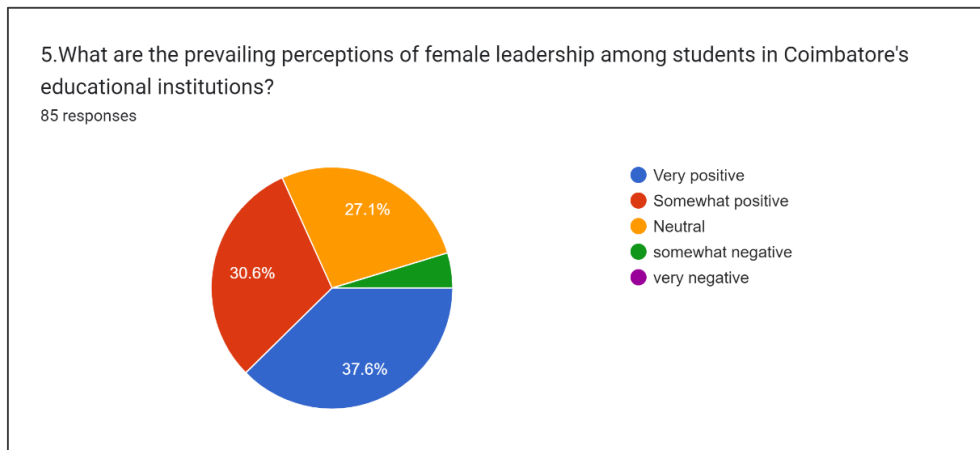
**Chart No.4- Is your institution headed by a women?**



According to the research on the topic “perception of female leadership and its influence on student aspiration” most of the educational institutions are currently headed by female (69.4%) while other institutions were earlier headed by female (30.6%).

Source: Primary data

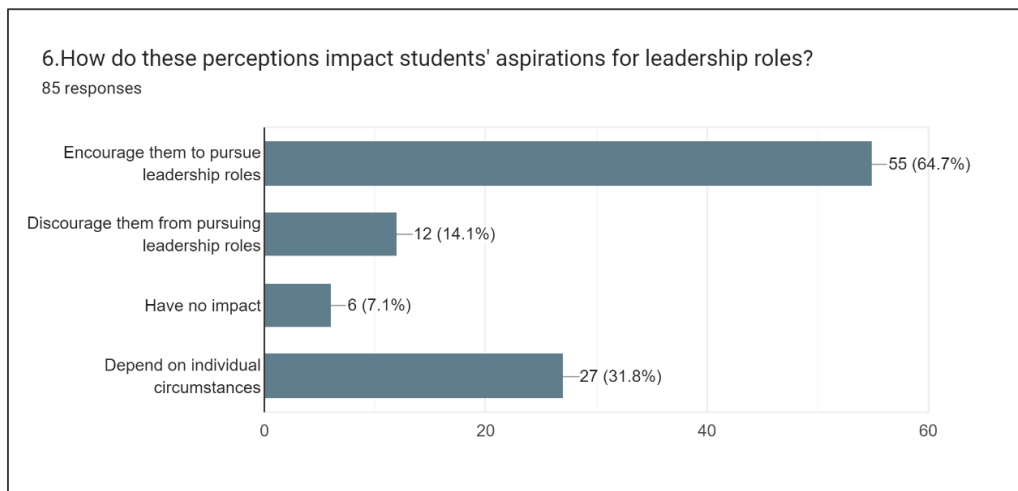
**Chart No .5- Prevailing perceptions of female leadership**



According to the study, the prevailing perceptions of female leadership among students in Coimbatore educational institutions show diverse opinions. A significant portion, 37.6%, hold a very positive view, while 30.6% are somewhat positive. Meanwhile, 27.1% of respondents remain neutral. Despite these largely favorable attitudes, some participants expressed somewhat negative views, highlighting a range of perspectives on the topic.

Source: Primary data

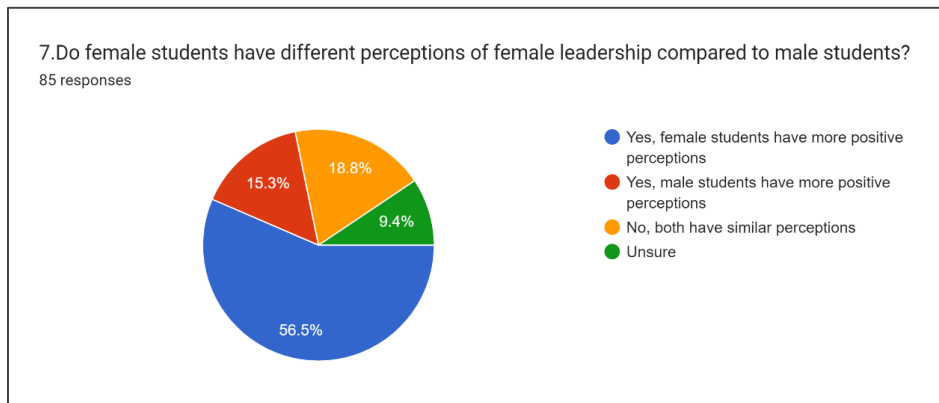
**Chart No 6- Perceptions impacting student's leadership aspirations**



According to the survey, 64.7% of respondents believe that female leadership roles encourage students to pursue more leadership positions. However, 31.8% feel that the impact depends on individual circumstances. A smaller portion, 14.1%, think these roles discourage leadership aspirations, while 7.1% believe they have no impact at all.

Source: Primary data

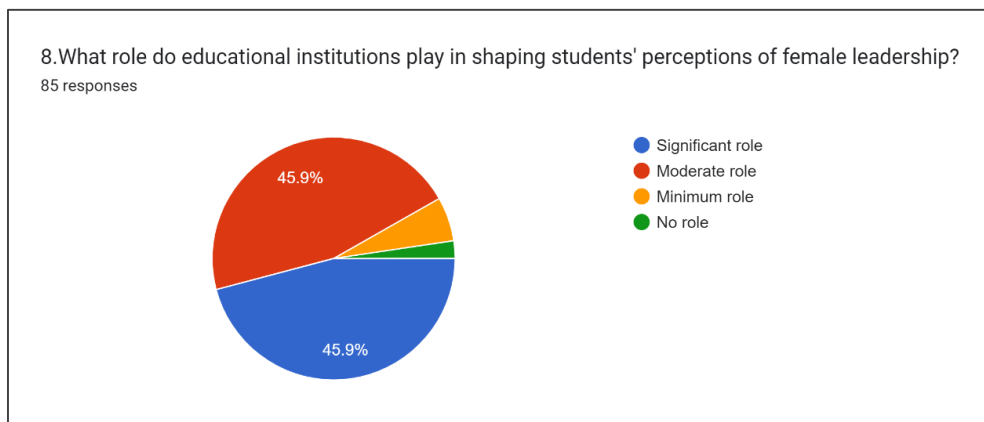
**Chart No 7- Different perception of female and male students**



In response to whether female students have different perceptions of female leadership compared to male students, 56.5% believe that female students have more positive perceptions. Meanwhile, only 15.3% think male students hold more positive views. Notably, 18.8% feel that both genders have similar perceptions and 9.4% are unsure.

Source: Primary data

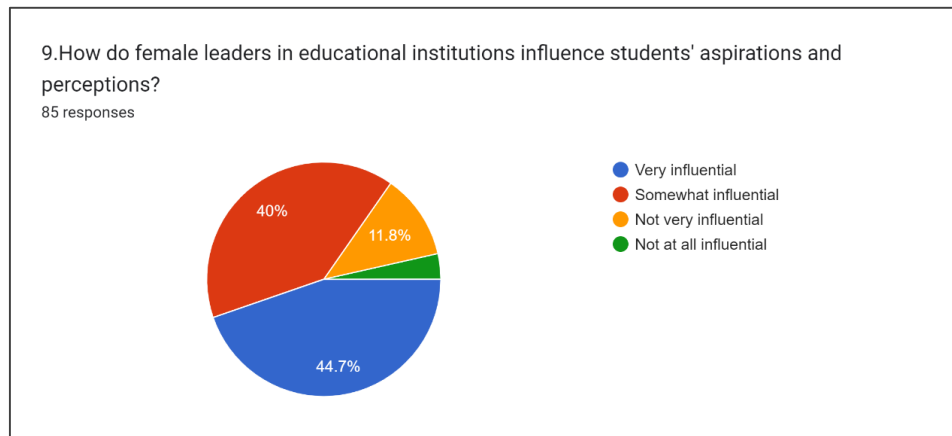
**Chart No 8- Role of educational institution**



According to the survey, 45.9% of respondents believe that educational institutions play a significant role in shaping students' perceptions of female leadership, while 45.9% think institutions play a moderate role. Only 2.4% feel there is no role, and 5.9% believe there is a minimal role in influencing these perceptions.

Source: Primary data

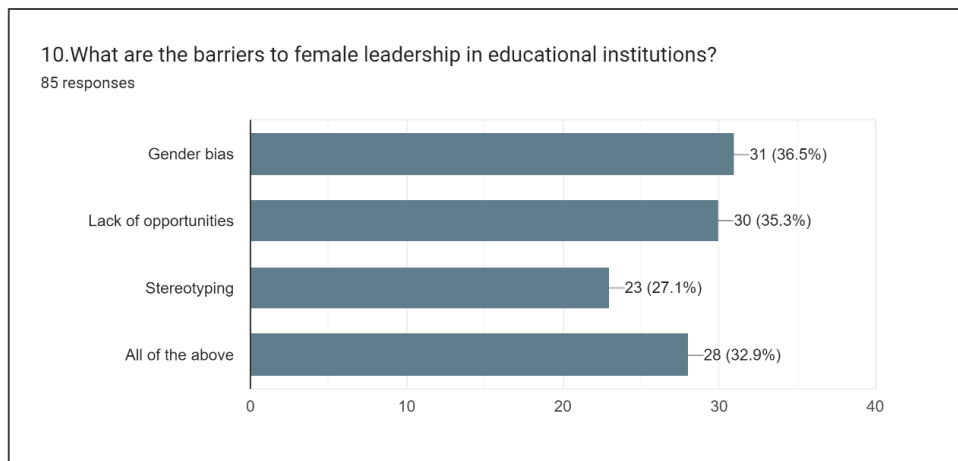
**Chart No 9-Impact of female leadership on students**



According to the survey, 44.7% of respondents believe that educational institutions are very influential in shaping students' aspirations and perceptions, while 40% think they are somewhat influential. Meanwhile, 11.8% feel that institutions are not very influential, and only 2.4% believe they have no influence at all.

Source: Primary data

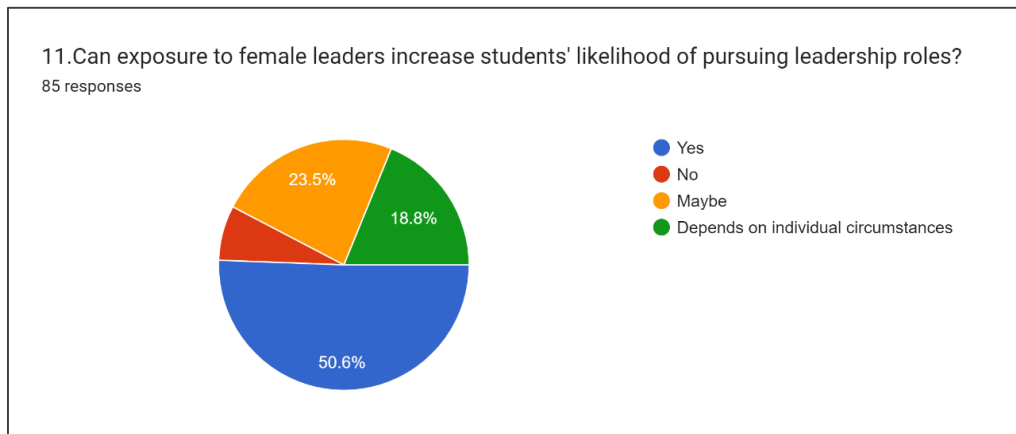
**Chart No 10- Barriers of female leadership**



According to the survey, the major barriers to female leadership in educational institutions are seen as gender bias (36.5%), a lack of opportunities for women (35.3%), and stereotyping (27.1%). Additionally (32.9%) of respondents believe that all of these factors combined affect female leadership.

Source: Primary data

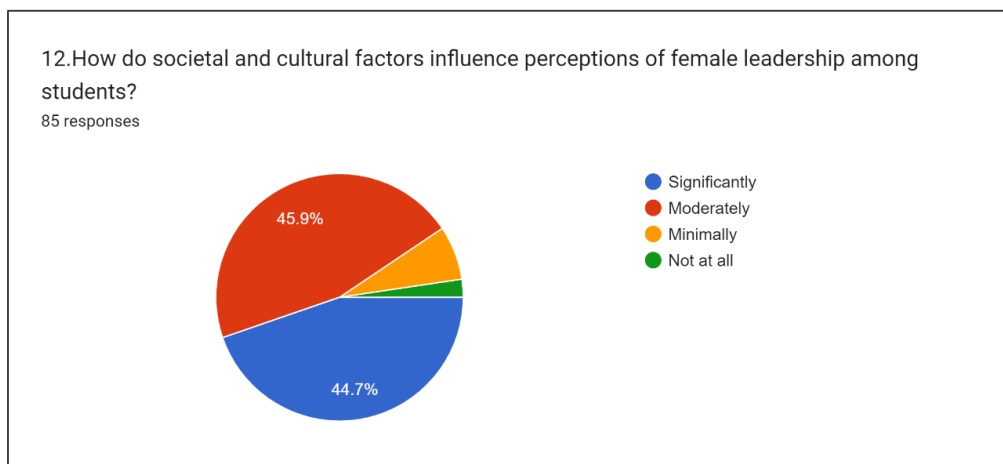
**Chart No 11-Exposure to female leadership**



From the pie chart, we can conclude that 50.6% of respondents believe female leaders increase students' likelihood of pursuing leadership roles. Meanwhile, 7.1% think they do not, 23.5% are unsure, and 18.8% feel it depends on individual circumstances.

Source: Primary data

**Chart No 12- Influence of societal and cultural factors**

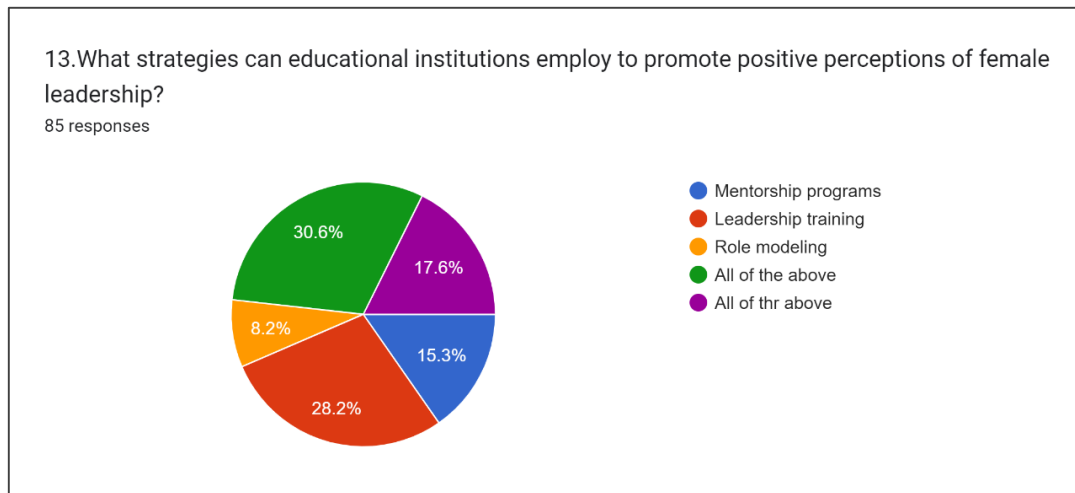


From the survey, 45.9% of respondents believe that societal and cultural factors moderately influence students' perceptions of female leadership, while 44.7% think these factors significantly influence perceptions. Additionally, 7.1% feel they have minimal influence, and 2.4% believe they do not influence students' perceptions at all.

Source: Primary data



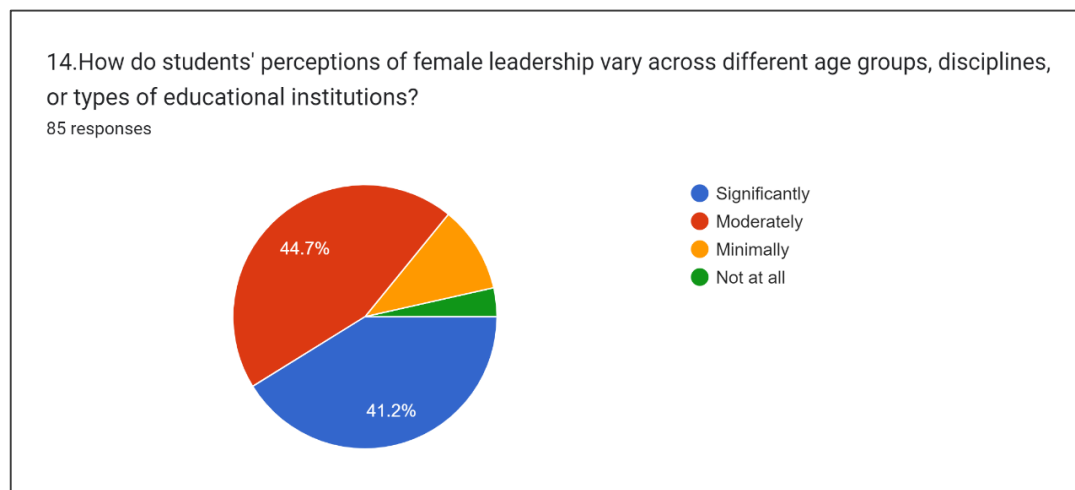
**Chart No 13-Strategies of educational institutions**



According to the survey, when asked what strategies educational institutions can employ to promote positive perceptions of female leadership, 28.2% of respondents believed leadership training could help, 15.3% favoured mentorship programs, and 8.2% supported role modeling. Additionally, 30.6% felt that all of these strategies combined could be implemented to promote positive perceptions.

Source: Primary data

**Chart No 14-Variations in perceptions of students**



According to the survey, 44.7% of respondents believe that student perceptions of female leadership moderately vary across different age groups, disciplines, or types of educational

institutions. Meanwhile, 41.2% think these perceptions significantly vary, 10.6% believe they minimally vary, and 2.4% feel they do not vary at all.

Source: Primary data

### Recommendation of the Study

1. Introduce Leadership Development Programs Focused on Women
2. Integrate Gender Sensitivity into the Curriculum
3. Promote Role Models and Case Studies of Female Leaders
4. Address Rural and Cultural Challenges with Community Involvement
5. Provide Resources for Overcoming Discrimination and Bias

### Conclusion

This study reveals that female leadership has a profoundly positive impact on student aspirations in Coimbatore's educational institutions. The presence of female leaders inspires students, particularly girls, to pursue higher education and career goals. Female leaders serve as role models, mentors, and sources of encouragement, helping students develop confidence, self-efficacy, and a growth mindset. The findings suggest that female leadership is crucial for promoting gender equality, challenging stereotypes, and fostering inclusive learning environments. Educational institutions can benefit from increasing female representation in leadership positions, providing training and development opportunities, and creating supportive networks for female leaders. Ultimately, this research highlights the transformative power of female leadership in shaping student aspirations and empowering future generations. By embracing and amplifying female leadership, we can unlock the full potential of students, communities, and society. This summarizes the main findings, emphasizes the importance of female leadership, and provides recommendations for educational institutions to promote gender equality and empower students.

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# Harnessing Renewable Energy Solutions: Strategic Integration of SDG 13 for Sustainable Practices in Coimbatore

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## Abstract

*This study focuses on the strategic integration of renewable energy solutions in Coimbatore, aligning with Sustainable Development Goal (SDG) 13, which emphasizes climate action. As global attention shifts towards sustainable development, Coimbatore's businesses and communities increasingly recognize the importance of adopting renewable energy to reduce carbon emissions, achieve energy independence, and improve long-term economic resilience. The research explores key drivers of renewable energy adoption, including environmental concerns, cost savings, compliance with government regulations, and the aspiration to enhance corporate social responsibility. Despite these motivating factors, significant challenges hinder widespread adoption, such as high initial investment costs, a lack of technical expertise, and inadequate government incentives. Findings indicate that businesses and individuals who have embraced renewable energy solutions in Coimbatore experience tangible benefits, such as reduced energy bills, improved energy reliability, and a lower carbon footprint. However, the study highlights the need for stronger support systems, including financial incentives, available technical support and comprehensive information on the benefits of renewable energy.*

**Keywords:** *Renewable Energy Adoption, Sustainable Development Goal (SDG13), Climate Action, Carbon Emissions Reduction.*

## Introduction

Renewable energy (or green energy) is energy from renewable natural resources that can be replenished over time. Types of renewable energy include solar power, wind power and hydropower. Bioelectricity and thermal energy are also important in some countries. Some

consider nuclear power a renewable energy source, although this is controversial. New energy installations are large or small, suitable for both urban and rural areas. Renewable energy is often used with more electricity. This has many advantages: electricity can transport heat and vehicles will be efficient and clean when consumed. Alternative renewable energy sources are those that vary from the environment, such as wind energy and solar energy. Alternatively, renewable energy sources that can be controlled are hydroelectricity, bioelectricity, or geothermal energy.

Limiting and adapting to climate change is the thirteenth Sustainable Development Goal, often known as Global Goal 13. The United Nations General Assembly created 17 Sustainable Development Goals in 2015. “Take urgent action to combat climate change and its impacts” is the official mission statement for this aim. Regarding clean energy, SDG 7 and SDG 13 are complementary and tightly linked.

This renewable energy closely relates to SDG 13 because these could be contributing towards a proper source for mitigation of climate change-the leading source of greenhouse gases is fossil fuels. In using renewable sources, such as solar, wind, and hydropower, nations can make drastic carbon emissions cuts and find their way to sustainable energy systems. In addition to paving for energy independence and long-term economic stability, this change contributes to the fight against global warming. Renewable energy integration also promotes actions concerning climate change, raises environmental sustainability, and increases resilience towards the risks of climate change-all of which fall within the aims of SDG 13.

### **Statement of the Problem**

Environmental issues mount as industry and economic activities increase in Coimbatore, including increasing energy and carbon emissions. Renewable energy solutions thus present a positive pathway, though institutional as well as individual understanding and acceptance of these technologies are quite poor. This research seeks to fill in the knowledge gap related to how renewable energy can be tapped and strategically utilized to achieve Sustainable Development Goal 13, on climate action. The challenge is to identify the barriers to the massive use of renewable energy and then figure out how Coimbatore can position its operations to align with international sustainability goals so as to reduce the impacts of climate change.

## Review of the Literature

**Favour Oluwadamilare *et al.*, (2024)** in the article “The integration of renewable energy solutions within the manufacturing industry: Challenges and opportunities”, the author has pointed out the integration process involving renewable energy solutions within the manufacturing industry in view of both challenges and opportunities which arise in this context. According to the paper, renewable technologies such as solar, wind, and biomass need to be adopted to achieve sustainability while reducing carbon emissions in energy-intensive industries. However, the main challenges are high initial costs, technological limitations, and a shortage of skilled persons for integration. Its strengths include benefits of cutting costs and an enhanced corporate reputation. Policy frameworks, financial incentives, and technological advances will then be discussed as part of the review according to their influence on the overcoming process of the above barriers. By strategic planning and continuous cooperative efforts, the manufacturing sector will be able to make a huge contribution to global sustainability.

**Krishna Kumar Jaiswal *et al.*, (2022)** in the paper "Renewable and Sustainable Clean Energy Development and Impact on Social, Economic, and Environmental Health", discuss the scenario where the world will shift from fossil fuels to renewable energy sources. The paper brings out the urgent requirement of clean energy for mitigating the effects of global warming, improving health, and also promoting economic growth. From the reviews, diverse literature on renewable energy technologies such as biofuels, solar, wind, and geothermal energy, the benefits of these renewable energies have been brought out alongside their challenges in implementation. It also points to the significance of policy intervention from the government sector, technological innovation, and socio-economic impact on renewable energy that promotes sustainable development.

**Mahdi Pouresmaieli *et al.*, (2023)** in the paper “Renewable energy integration and sustainable development with strategic planning in the mining industry” discusses the opportunities as well as potential challenges that would be incurred by the introduction of renewable energy sources in the mining operations. A literature review identifies three big lines of research: integration of renewable energies into remote mines; focusing on specific renewable technologies such as solar and wind; and opportunities and challenges in specific countries. It underlines that the renewable energy can contribute to lowering the environmental impact, new jobs created, and reinforcing sustainable development of mining. However, hindrances in the shape of high

initial cost, unawareness, and technical challenges will have to be acknowledged. The study recommended that a SWOT analysis might be used to come up with appropriate strategies about how to effectively integrate renewable energy in the mining sector.

**Abhishek N *et al.*, (2024)** in the paper “Renewable Energy Initiatives by Corporates and Sustainable Development – A Mediation Analysis,” evidently underlines that how renewable energy initiatives (REIs) by corporations affect the process of sustainable development. It unveiled the fact that earlier research mostly focused on green business practices, social responsibility, and that reap the direct benefits from REIs. However, on mediating environmental, social, and economic aspects in the relationship between corporate REIs and sustainable development, this study is different from other studies. This analysis depicts the perception of stakeholders that the effect of REIs on sustainable development is perceived positively because mediation effects are positive which confirms that environmental, social, and economic aspects do play a very important role in such a relationship. This is research that could fill gaps in the comprehensively multifaceted relationships between corporate actions and sustainability goals, thus forming a basis for further work and policy development.

### Objectives of the Study

1. To identify the obstacles preventing the broad use of renewable energy sources.
2. To identify the integration of renewable energy among the common public and businesses and their benefits on its adoption.

### Research Methodology

The research is prepared with solely considering primary data. In order to acquire an idea of how consumers may feel regarding renewable energy solutions which can strategically be integrated for the achievement of SDG 13, in Coimbatore, a structured questionnaire would be used to get primary data from 50 respondents who have been randomly selected in this study including residents, business owners, etc. The themes of the questionnaires will be perceived benefits, obstacles to taking up the technology, preparedness of society to adopt renewable energy, and level of knowledge about renewable energy sources. Data gathering on public perceptions and preparedness for the use of renewable energy will help explain how SDG 13 may be applied regionally. This source will, therefore, assist in giving robust roots to schemes designed for the development of the usage of renewable energy within the Coimbatore region.

## Analysis and Interpretation

**Table 1: Demographic profile**

Factor	Values	Frequency	Percentage
Gender	Male	26	50
	Female	26	50
Age	18-24	48	92.3
	25-34	1	1.9
	35-44	2	3.8
	45-54	1	1.9
	55 and above	0	0
Occupation	Student	46	88.5
	Professional	3	5.8
	Business owner	2	3.8
	Home maker	1	1.9
	Retired	0	0
Monthly income	Below 20000	43	82.7
	20000-40000	3	5.8
	40000-60000	3	5.8
	60000 and above	1	1.9

*Source: calculated data*

**Table 2: Chi-Square test for testing the relationship between familiarity and demographics**

To test the relationship between familiarity with Sustainable Development Goal (SDG) 13, which focuses on climate action, and demographic factors, we propose the following hypotheses:

**Null Hypothesis:** There is no significant relationship between individuals' familiarity with Sustainable Development Goal (SDG) 13 and their demographic characteristics.

**Alternate Hypothesis:** There is a significant relationship between individuals' familiarity with Sustainable Development Goal (SDG) 13 and their demographic characteristics.



Factor	Chi-square value	DF	P value	Significant	Interpretation
Age	4.952 <sup>a</sup>	6	.550	Not significant	The Chi-square value (4.952) and p-value (.550) suggest no significant relationship between age and familiarity with SDG 13. This indicates that age does not influence how familiar respondents are with climate action goals.
Gender	1.371 <sup>a</sup>	2	.504	Not significant	The Chi-square value (1.371) and p-value (.504) show no significant relationship between gender and familiarity with SDG 13. Thus, gender does not play a role in determining awareness of climate action.
Occupation	3.994 <sup>a</sup>	6	.677	Not significant	The Chi-square value (3.994) and p-value (.677) imply no significant relationship between occupation and familiarity with SDG 13. Therefore, occupation does not significantly affect knowledge of climate action initiatives.

Source: calculated data

**Table 3: motivations on renewable energy solutions**

Particulars	Mean value	Rank
Environmental concerns	6.00	1
Cost savings/ Reducing operational costs	5.26	2
Government incentives	4.37	9
Energy independence	4.93	5
Recommendations from others	4.91	6
Achieving sustainability goals (SDG 13)	4.96	4
Enhancing brand reputation	4.80	7
Complying with government regulations	4.71	8
Improving energy security	5.05	3

Source: calculated data

The data shows that environmental concerns (mean value of 6.00) are the top motivator for considering renewable energy solutions, indicating that businesses and individuals are driven by the desire to protect the environment. Cost savings (5.26) rank second, suggesting that reducing operational expenses is also a key factor. Improving energy security (5.05) is ranked third, highlighting the importance of stable energy access. Achieving sustainability goals (4.96) and energy independence (4.93) follow, showing that aligning with SDG 13 and reducing reliance on external energy sources are also significant. Interestingly, government incentives (4.37) rank lowest, indicating they are not as strong a motivator compared to environmental and financial factors.

**Table 4: Challenges faced while implementing renewable energy solutions. (Rank 1 indicates highest priority and Rank 5 indicates lowest priority)**

Particulars	Mean value	Rank
High initial costs	3.99	1
Lack of technical expertise	3.19	6
Limited government support	3.36	4
Insufficient information	3.30	5
Regulatory and Permitting Issues	3.56	3
Inflation and fluctuations in pricing	3.61	2

*Source: calculated data*

The data indicates that high initial costs (mean value of 3.99) are the biggest challenge in implementing renewable energy solutions, making affordability a key concern. Inflation and price fluctuations (3.61) rank second, reflecting uncertainty in energy prices as a significant barrier. Regulatory and permitting issues (3.56) are the third challenge, suggesting difficulties in navigating legal frameworks. Lower-ranked challenges include limited government support (3.36), insufficient information (3.30), and lack of technical expertise (3.19), indicating these factors, while important, are perceived as less critical.

**Table 5: Benefits experienced from using renewable energy solutions. (Rank 1 indicates highest priority and Rank 5 indicates lowest priority)**

Particulars	Mean value	Ranks
Reduced energy bills	3.51	1
Lower carbon footprint	2.74	4
Increased energy reliability	2.83	3
Positive environmental impact	3.39	2
Increased property value	2.53	5

*Source: calculated data*

The table shows that reduced energy bills (mean value of 3.51) are the top benefit experienced from using renewable energy solutions, indicating significant financial savings. Positive environmental impact (3.39) ranks second, emphasizing the environmental benefits of renewable energy. Increased energy reliability (2.83) is ranked third, highlighting improved consistency in energy supply. A lower carbon footprint (2.74) and increased property value (2.53) rank lower, indicating these are perceived as secondary benefits compared to cost savings and environmental outcomes.

**Table 6: Chi-Square test for testing the relationship between overall renewable energy solutions adopted and the demographics.**

To test the relationship between overall renewable energy solutions that have been adopted and the demographics.

Null Hypothesis: There is no significant relationship between overall renewable energy solutions that have been adopted and the demographics.

Alternate Hypothesis: There is a significant relationship between overall renewable energy solutions that have been adopted and the demographics.

Factor	Chi-square value	DF	P value	Significant	Interpretation
Age	9.405 <sup>a</sup>	6	.152	Not significant	The Chi-square value (9.405) and p-value (.152) suggest no significant relationship between age and the adoption of renewable energy solutions. Age does not significantly influence the likelihood of adopting these solutions.
gender	1.906 <sup>a</sup>	2	.386	Not significant	The Chi-square value (1.906) and p-value (.386) show no significant relationship between gender and renewable energy adoption. Gender does not play a major role in determining the adoption of these solutions.
Occupation	4.519 <sup>a</sup>	6	.607	Not significant	The Chi-square value (4.519) and p-value (.607) indicate no significant relationship between occupation and the adoption of renewable energy solutions, meaning occupation does not significantly affect adoption rates.

*Source: calculated data*

**Table 7: Chi-Square test for testing the relationship between additional support or information needed for further integrate renewable energy solutions and the demographics.**

To test the relationship between additional support or information needed for further integrate renewable energy solutions and the demographics.

Null Hypothesis: There is no significant relationship between the additional support or information needed to further integrate renewable energy solutions and the demographics of individuals.

Alternate Hypothesis: There is a significant relationship between the additional support or information needed to further integrate renewable energy solutions and the demographics of individuals.

Factor	Chi-square value	DF	P value	Significant	Interpretation
Age	11.204 <sup>a</sup>	12	.511	Not significant	The Chi-square value (11.204) and p-value (.511) indicate no significant relationship between age and the need for additional support or information for integrating renewable energy solutions. Age does not significantly influence the type of support required.
gender	1.577 <sup>a</sup>	4	.813	Not significant	The Chi-square value (1.577) and p-value (.813) show no significant relationship between gender and the need for additional support. Gender does not affect the specific information or resources needed for renewable energy integration.
Occupation	14.053 <sup>a</sup>	12	.297	Not significant	The Chi-square value (14.053) and p-value (.297) suggest no significant relationship between occupation

					and the need for additional support. Occupation does not play a significant role in determining what kind of support is needed to integrate renewable energy solutions
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*Source: calculated data*

### Practical Implementations

On the basis of our findings, it's suggested that Coimbatore aim to adopt renewable energy options with a focus on addressing high upfront costs and improving access to financial incentives as these could be significant barriers. Supporting educational interventions to strengthen technical expertise and empower citizens with thorough information on benefits of renewable energy options and integration would be ideal. To encourage uptake, it would be advantageous to structure interventions that emphasize cost savings and environmental impact as such factors really fueled motivation. Facilitating connections across businesses, government, and schools may strengthen approaches to bridging knowledge and streamlining regulatory processes that may undermine environments transitioning to renewable energy. Utilizing these approaches will align energy practices with SDG 13 and contribute to the sustainable development goals.

### Conclusion

Integration of renewable energy solutions within Coimbatore along with SDG 13 marks the step towards combating climate change in support of sustainable development. The definite advantages of renewable energy include lower costs of energy, low carbon emissions, and enhanced security of energy. However, such widespread consumption still remains a moot subject with significant barriers standing in its way, ranging from high capital costs to little governmental support and lack of technical know-how in most of the regions concerned. To break such barriers, there is an increased need for strong financial incentives as well as education and technical assistance. Coimbatore can enhance the take-up of renewable energy through collaboration among business, government, and schools, creating a more resilient and sustainable energy system. Such effort, therefore, supports climate actions while also

promoting sustainable long-term economic and environmental stability, making Coimbatore the flagship in practice of sustainable development.

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# OTT as a Disruptive Technology and Its Impact on the Entertainment Industry

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## Abstract

*Disruptive technology is an innovation that significantly alters the way that consumers, industries, or businesses operate by disrupting the regular flow of business with technology that has attributes which are recognizably superior. In recent years, several disruptive technology trends have been gaining momentum in various industries. One such innovation which has emerged as a formidable disruptive technology is the “Over-the-top” platform. This has significantly altered the way the entertainment industry works. This paper examines the transformative impact of OTT platforms on traditional media industries, focusing on the technological advancements, market dynamics, and consumer behaviour shifts driving this change.*

*Keywords: Entertainment Industry, OTT Platform, Disruptive Technology*

## Introduction

Over the years, Technological development has revolutionised industries and disrupted the flow of various businesses significantly. One such Industry is the Entertainment Industry. It has undergone significant evolution, driven by technological advancements and changing consumer preferences. The Evolution of the Entertainment Industry due to technology can be summarised as follows. According to the timeline, Early 20th Century - Radio (music, news and serials/drama); Cinema (Silent films with synchronised sound); Mid 20th century - Televisions (brought visual entertainment into households); Late 20th century - DVDs (films and shows on demand) Cable TV (expanded viewing options, enhancing content variety), Recent development - OTT (Over the top) Platforms which has been a transformative disruptive technology.

OTT has disrupted the traditional flow of business in the Entertainment Industry by offering a technologically superior alternative to traditional methods like Cable TV and DVDs. They have replaced the need for relying on set-top boxes, stable dish TV connections, and

subscriptions to numerous channels. Previously, audiences were constrained to watching content at specific times, such as during the IPL season when cricket enthusiasts, ranging from professionals to students, hurried home before matches began. However, OTT platforms now allow people the flexibility to enjoy their favourite shows and movies anytime, anywhere, and on any device through a single application.

OTT platforms have been effective in breaking down language barriers within India and Worldwide. They cater to India's diverse linguistic landscape by offering content in various regional languages, preserving cultural heritage while ensuring accessibility through subtitles and dubbed versions. This accessibility extends beyond borders, allowing international audiences to engage with content from different linguistic backgrounds and cultures. For example, the Korean series "Squid Games" on the OTT platform "Netflix" which made it globally available and provided subtitles and dubbed versions for the global audience. This exposure not only enriches cultural understanding but also offers insights into different lifestyles and perspectives across the globe. This has also helped make entertainment content PAN India and PAN world.

### Objectives of the study

- Examining OTT platforms as a disruptive technology and its impact on dismantling of language barriers and connecting diverse audiences.
- To explore the substantial impact of OTT platforms on shifting consumer preferences from traditional TV networks to streaming platforms.

### Review of Literature

#### **"The Impact of Over-the-Top (OTT) Services on Television Consumption" by Patrick Barwise and Leo Watkins (2018)**

This study examines how OTT services like Netflix and Amazon Prime Video are changing traditional television viewing habits and the broader implications for the television industry. It highlights the shift in consumer preferences towards on-demand content and the decline in linear TV viewership.

#### **"The Economics of OTT: How Streaming Services are Redefining Revenue Models in the Entertainment Industry" by David Craig and Stuart Cunningham (2021)**

This paper examines the economic implications of the rise of OTT platforms, particularly their impact on revenue models within the entertainment industry. Craig and Cunningham discuss the shift from traditional advertising and subscription models to new monetization strategies, such as content bundling and direct-to-consumer offerings.

**"OTT Platforms and the Democratisation of Content Creation in India" by Ananya Banerjee and Rahul Desai (2020)**

Banerjee and Desai explore how OTT platforms are democratising content creation in India. The study highlights the opportunities for independent filmmakers, content creators, and niche storytellers to produce and distribute their work without traditional gatekeepers. It also gives us insight on how OTT platforms help to remove entry level barriers.

**"The Role of OTT Platforms in Promoting Multilingualism in Indian Media" by Maya Menon and Vikas Kapoor (2019)**

Menon and Kapoor discuss how OTT platforms are promoting multilingualism by offering content in various Indian languages. The paper explores the cultural significance of this trend and its potential to enhance linguistic diversity in the Indian media landscape. This has helped to make entertainment content Pan Indian and Pan world by effectively removing language barriers.

### **Research Methodology**

Descriptive research has been conducted by distributing questionnaires to the general public to gather primary data. The objective is to analyse the significant impact OTT platforms have had on consumer preferences for watching movies.

Sampling Technique & Size: Convenient Sampling technique; 157 respondents.

Data collection: Primary data collected through structured questionnaires and secondary data are through various sources like books, internet journals, articles, magazines, etc.

**The statistical tool used:** Percentage analysis

## Theoretical Framework

OTT platforms are a disruptive technology, particularly in breaking down language barriers in the entertainment industry. In a culturally diverse country like India, where people speak different languages but share a love for movies and TV shows, language barriers once limited access to films in other languages. OTT platforms have solved this issue, leading to the following impacts:

### *Subtitles and Dubbing*

- OTT platforms provide subtitles, dubbing, and audio options in multiple languages, allowing viewers worldwide to access content originally produced in different languages.
- For example, the advent of OTT platforms has expanded the audience for Malayalam movies from primarily regional viewers to a global fanbase, establishing Malayalam cinema as a significant player in the international film industry. Similarly, dubbing international content into regional languages has broadened access, enhancing inclusivity for viewers with visual impairments or literacy challenges.

### *Content Diversity*

- A key feature of OTT platforms is their content diversity, offering a wide range of genres, languages, and cultures. With global content libraries and original productions in multiple languages, OTT platforms provide insight into diverse lifestyles and boost local film industries.
- For instance, from Bollywood films and K-drama to Spanish thriller series and Japanese Anime, OTT platforms have given us access to diverse content across the world. This gives us global exposure ranging from “Koffee with karan” to “The late late show with James Corden”.

### *Cultural Diplomacy*

- OTT platforms act as a tool for cultural diplomacy by spreading a country's culture, values, and way of life through entertainment. This soft power can lead to better international relations and understanding. Exposure to diverse content helps break stereotypes and prejudices, fostering a more inclusive and empathetic global community.

### *Research and Development*

- OTT platforms invest in research to understand viewing habits and preferences across different linguistic groups. This data helps in creating and curating content that resonates with diverse audiences.
- Delivering a high-quality streaming experience across devices and network conditions is crucial for OTT. To achieve this, OTT invests in R&D to improve video compression, reduce buffering, and enable adaptive streaming, ensuring a smooth viewing experience on any device or internet speed.

### *Content Customization and Personalization*

- Viewers can customise their language preferences for subtitles, audio tracks, and interface language, making the platform more user-friendly and accessible.
- Adaptive streaming technology ensures that content is delivered in the best possible quality based on the viewer's internet connection and device capabilities, enhancing the viewing experience regardless of language.
- OTT platforms use sophisticated algorithms to recommend content based on viewers' preferences, regardless of language.

### *Cross-Cultural Collaborations*

- OTT services frequently engage in co-productions with creators from different countries, resulting in content that blends multiple cultural elements and languages. This not only broadens the appeal of the content but also showcases diverse perspectives.
- International collaborations involving actors, directors, and writers from different linguistic backgrounds create a rich, multicultural tapestry of storytelling that appeals to a global audience.

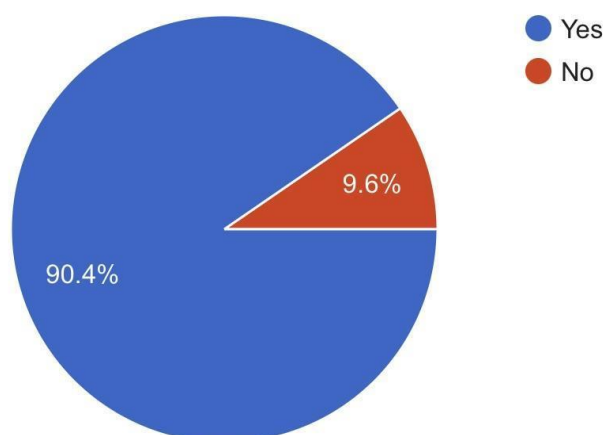
## **Analysis and Interpretation of Data**

In this research paper, we have conducted a survey as a means of gathering primary data which we have used to obtain findings relating to the objectives of our study. The data collected from the survey had been analysed and interpreted in the table and graphical form.

**Table 1 Demographic Data**

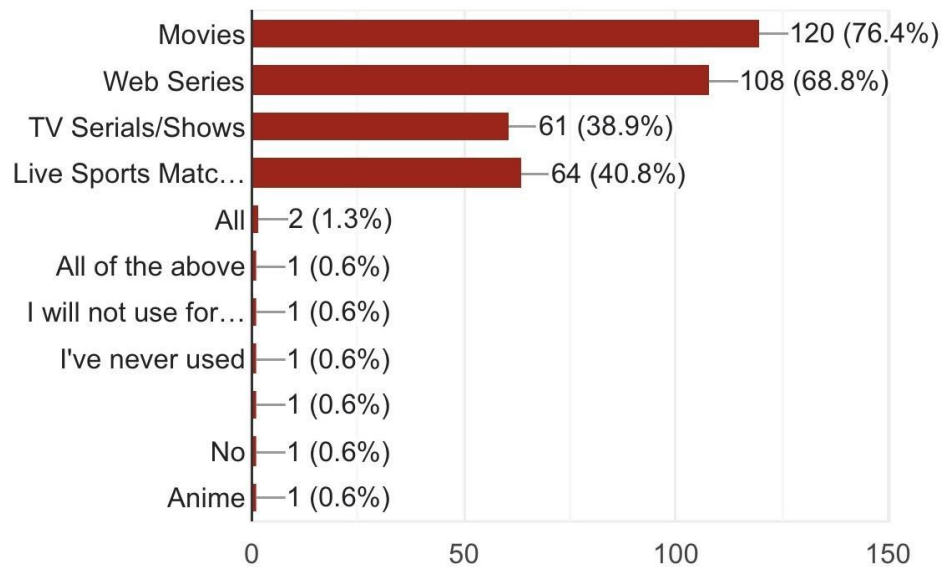
Particulars	Variance	No of Respondents	Percentage
Age	Under 18	4	2.5%
	18 – 20	109	69.4%
	20 – 30	24	15.3%
	30 – 40	7	4.5%
	40-50	7	4.5%
	50-60	3	1.9%
	60 and Above	3	1.9%
	<b>Total</b>		<b>157</b>
<b>Gender</b>	Male	58	36.9%
	Female	96	61.1%
	Prefer not to say	3	1.9%
	<b>Total</b>	<b>157</b>	<b>100</b>

**Chart 1: Do you use OTT platforms like Netflix, Amazon Prime, HotStar, Jio Cinema etc.?**



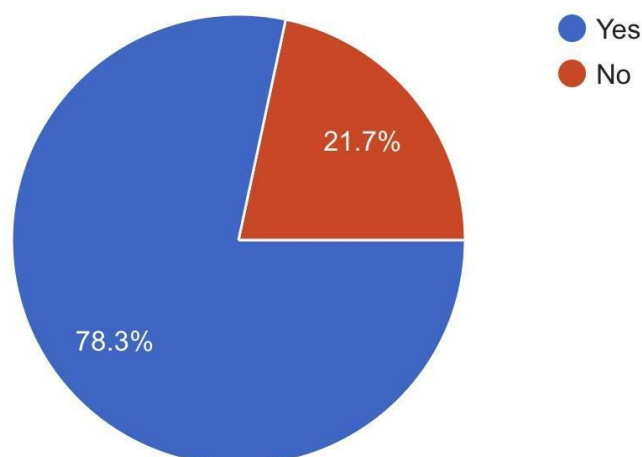
This data shows that most consumers (90.4%) use OTT platforms like Netflix, Amazon Prime, Hotstar, and Jio Cinema. It highlights current consumer preferences and consumption patterns leaning towards the use of OTT platforms.

**Chart 2: For what purpose do you use OTT platforms?**



It can be observed that most consumers prefer using OTT platforms for movies and series because they are offered a wide variety of options in the comfort of their own space, although TV shows and live sports matches also have a considerably large audience.

**Chart 3: Do you consider OTT platforms to be better value for money compared to traditional TV?**



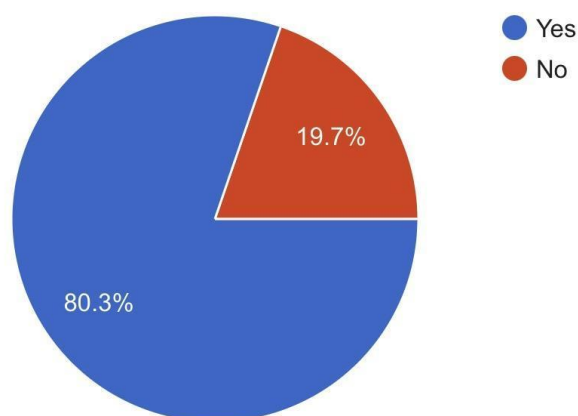
The above pie chart indicates that the majority (78.3%) of consumers believe OTT platforms offer better value for money than traditional TV. This is because audience can access

a wide variety of shows, movies, and series by simply subscribing to a platform, giving them more choices. A comparison of

Set top box services and prices	Ott platforms services and prices
TATA SKY - Subscription cost, annual service for the first year	Netflix - No commitments, cancel anytime. Everything on Netflix for one price. No ads and no extra fees.
Tata Play Rs 1199 for standard definition; 1299 for High Definition; 2499 - High Definition Hybrid Android; 4999 High Definition PVR + additional costs per channel as applicable per year	200 per month basic plan - 2400 per year , 500 per month standard plan- 6000 per year, 650 per month premier plan - 7800 per year
600+ channels available on the set top box, subscribe and watch what you like.	Total 17000 movies as of 2022 6,621 movies, series, and specials, including 3,657 Netflix Originals - in 2024 60+ video games on the app.

Source: <https://www.netflix.com/signup>; <https://www.tataplay.com/cms-assets/inline-files/sale-STB-Scheme-03-08-2023.pdf>

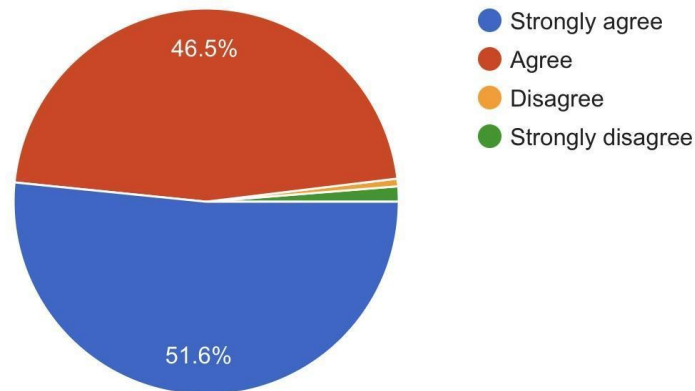
**Chart 4: Did the COVID-19 lockdown influence your choice to watch content on OTT platforms?**



The COVID-19 lockdown had a significant impact on the entertainment industry. With visits to theatres no longer possible, people turned to an alternative approach. This shift also influenced consumers' viewing habits, as there were no longer any limitations on the amount of content they could watch.

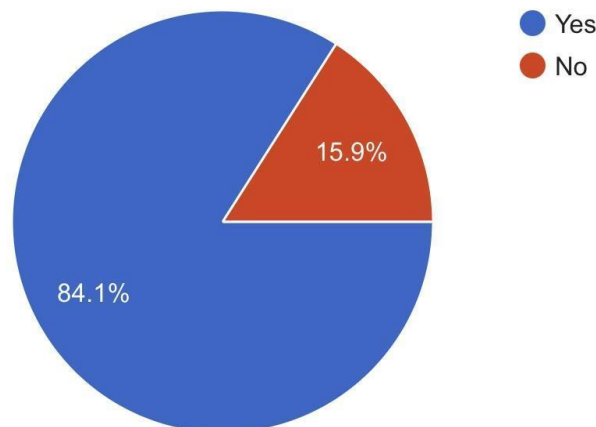


**Chart 5: “Studies indicate that with the increasing popularity of OTT platforms, viewers now enjoy movies and shows in multiple languages, effectively dismantling language barriers in the entertainment sector.” Do you agree with this statement?**



OTT platforms offer a wide variety of content to viewers, regardless of language, enabling people to enjoy shows and movies from around the world. As a result, viewers are increasingly exploring and watching content in multiple languages. The convenience of subtitles and dubbing options also makes it easier for audiences to access and appreciate diverse content, broadening their entertainment choices and preferences.

**Chart 6: Has the convenience provided by OTT platforms—allowing you to watch content at your convenience, on any device, and from anywhere—altered aspects of your daily life?**



OTT platforms offer a major benefit by allowing you to watch any movie, show, or series on any device whenever and wherever you like. It means you no longer have to rely on TV programming schedules or be physically present in front of a Television. Whether you're travelling, or simply relaxing at home, OTT services let you access a variety of content on your smartphone, laptop, smart TV etc. This flexibility empowers viewers to customise their viewing experiences to fit their lifestyles, making entertainment more accessible than ever.

## Findings

- Respondents prefer Netflix, followed by Hotstar and Amazon Prime for OTT viewing
- OTT recommendations help users discover new content and customise viewing, leading to industry globalisation and PAN India and global content
- People prefer theatres over OTT platforms for new releases due to the larger screen, superior audio quality, exclusive theatre experience, and the thrill of a first day, first show.
- However, OTT platforms also offer OTT exclusive content, which provides a platform for small producers and emerging artists to gain recognition and enter the industry with ease.
- The majority of respondents agree that OTT platforms offer significant flexibility, allowing users to watch content at their own convenience.
- The convenience of OTT platforms has led to increased isolation, as watching content anytime and anywhere can cause people to spend more time alone, leading to a disconnect from family, friends, and local communities.

## Suggestions

- OTT platforms should enhance their focus on providing multiple regional language subtitles. This facilitates content accessibility, overcoming language barriers and broadening content reach, making media available to a more inclusive audience.
- OTT platforms should offer 24/7 customer support to enhance user experience and satisfaction. With global subscribers in various time zones, this service builds trust, loyalty, and helps users navigate the platform effectively.
- OTT platforms should add a watch party feature to let multiple people watch content together, replicating a shared viewing experience even from afar. This communal aspect enhances user engagement and satisfaction.

- OTT platforms should implement a prompt for previews with mature content to prevent families from being caught off guard. This feature allows viewers to control their experience and protects younger audiences from inappropriate material.

## Conclusion

From this research paper we can draw the conclusion that OTT is indeed a Disruptive technology which has impacted the Entertainment Industry on a Global scale. It has replaced the traditional TV by providing advantages such as flexibility of watching from anywhere and on any device, convenience of watching content in our own time and giving us regional and global exposure through effective dismantling of language barriers in entertainment. OTT's ability to cater to diverse audience preferences, deliver personalised content recommendations, and provide on-demand viewing has not only democratised entertainment but also fostered a global audience for regional content. This technological shift has forced traditional players to adapt or risk becoming obsolete. From the study, we can also infer that users also face some challenges with OTT platforms, such as the accumulating costs of subscribing to multiple services, making it expensive. Additionally, the limited availability of regional content on global platforms is another issue, as users often find it difficult to access local shows and movies that are not widely available outside their native countries.

Furthermore, OTT platforms rely heavily on a stable internet connection, which can be a barrier for viewers in areas with unreliable or slow internet services. This dependency can affect the viewing experience and limit access to content, making it difficult for some users to enjoy the seamless streaming experience that OTT platforms promise. However OTT platforms continue to innovate and adapt to these limitations. As OTT continues to expand its reach, its impact on the entertainment industry will likely continue to be profound, influencing content creation, distribution strategies, and audience engagement in the years to come.

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# Interpreting Miss Muriel Stacy's character from *Anne of Green Gables* by L.M.Montgomery, as an icon of the emergence of self-empowered women in the late 19th century

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## Abstract

*Miss Muriel Stacy, Avonlea's school teacher, represents a new generation of women who pursued careers and independence in an era which can be marked as the beginning of the ideologies of self-empowerment and self-reliance in the lives of women. Avonlea, being a place far isolated from the advancements of an urban life, initially resists Stacy's innovative teaching methods and her autonomous way of life. But later, the village acknowledges and accolades her when they gradually realize the need for a progressive and promising future for their children. The acceptance of Stacy's state of the art mode of teaching and her reformative attitude by the primitive community of Avonlea is just a foretelling of the world's fate to hold empowering women as one of its predominant goals.*

*Keywords: Miss Muriel Stacy, women, empowerment*

## Introduction

Women's empowerment was introduced as a notion in the United Nations (UN) in the year 1985. Later, it became one of the 17 Sustainable Development Goals framed by the UN at the beginning of the twenty-first century. However, that only marks the concept's political record. The women writers started writing works with title characters and protagonists as women who are self-empowered and independent right from the beginning of the nineteenth century. Charlotte Bronte's *Jane Eyre*, Louisa May Alcott's *Little Women* and Lucy Maud Montgomery's *Anne of Green Gables* are some of the instances of the practice of women's empowerment concepts in literature in the middle and late nineteenth centuries. L.M. Montgomery's 'Anne of Green Gables' is a coming-of-age novel that portrays a eleven year old girl, Anne, who, through the flow of fate, gathers heartwarming experiences and involves herself in numerous adventures in the aisle of life and, without any assistance from the high and chauvinistic society, empowers herself through the guidance of another self-empowered, free-willed woman, Miss Muriel Stacy, her mentor.

### **Miss Muriel Stacy**

Miss Muriel Stacy is a pivotal character in the novel *Anne of Green Gables*, who comes to the village of Avonlea as a replacement for its school teacher, Mr. Reginald Phillips. Miss Stacy is introduced in the novel and to the conventional people of Avonlea as a hard surprise. Unlike Mr. Phillips, Stacy adopts a new and progressive way of teaching that amuses and inspires the pupils, but at the same time it leaves the local people startled, including the famous newscaster of Avonlea, Mrs. Rachel Lynde. Ms. Stacy's replacement of Mr. Phillips can be seen as a certain anticipation of the victory of self-empowered women over the chauvinistic society.

The flawed character of Mr. Phillips serves as an aspect from which Ms. Stacy's immaculate character can be perfectly contrasted. Mr. Phillips is so orthodox in his teaching and was very partial and unsympathetic with his students. He had no concern about the future of students and did not implement any reformative ideas for taking the students ahead. He did not even hesitate to maintain a relationship with one of his students, Prissy Andrews, explicitly.

It must be noted that Phillips's condemnable relationship with Prissy is not as exaggerated or accused as the Avonlea people accused Ms. Stacy for her pragmatic way of teaching. Evidently, this is an outcome of the collective mindset of the people (including women) that men are more suitable to do certain jobs than women and most of their decisions are correct. This is also a reflection of the narrow-minded society's overlooking behaviour towards the faults of men and attentive behaviour towards the simplest errors of women.

Ms. Stacy, being a young widow during a period when the word 'self-empowerment' is not at ease in society, is expected to stay at home and mourn for the demise of her husband for the rest of her life. But Ms. Stacy never abided herself beneath the retrograde norms put forth by society. Instead, she becomes an independent and self-reliant woman who empowered herself to be a flawless teacher. Her independence is not just financial; she is also an emotionally independent woman who is much clarified in governing her emotions. She is also a straight-forward person who is courageous enough to put forth her thoughts boldly without fearing the consequences, even if it comes to the local bullies or the school trustees. She has her own moral values to which she firmly commits herself and never lets anyone who resisted her trailblazing way of life or teaching shake her principles.

Anne Shirley, the protagonist of the novel, refers to Stacy as a role model for her career as a school teacher. She is one of Anne's 'kindred spirits' who encouraged and fuelled her imagination when most of the people ridiculed her for being dramatic. "Only he says we must first make sure that it is a worthy purpose. I would call it a Worthy purpose to want to be a teacher like Miss Stacy, wouldn't you, Marilla? I think it's a very noble profession" (L.M. Montgomery 337). Stacy is a cordial mentor not only for Anne but for all the students of Avonlea's school. Stacy's selfless and sympathetic character becomes evident when she offers to take free Sunday classes for her students who dream to get admitted to the prestigious teachers' college, Queen's Academy.

Stacy's teaching methodologies are not narrowed down to academic activities alone. Her mentoring ideas seem so contemporary when she takes her pupils for 'field afternoon' in order to get a better understanding about nature. She even insists her students do physical culture exercises every day for being physically fit. These avant-garde methods are initially condemned by Rachel Lynde and Marilla Cuthbert, Anne's guardian. But they could not stop themselves from accepting them when they realized the evident progression in the intellectuality of the young generation of Avonlea. Marilla even begins to respect Stacy after realizing the nurturing influence she is making in the life of Anne.

Miss Stacy's perfection as a teacher can be seen as an outcome of her self-reliant and forward-thinking nature. She would not have made herself an inspiration for her students if she remained a typical woman who buried all her dreams under the convictions of the narrow-minded community. Being a single woman in a society that often limited women's opportunities, she empowered herself, which ultimately led her to guide her students to chase their dreams.

"New worlds of thought, feeling, and ambition, fresh, fascinating fields of unexplored knowledge seemed to be opening out before Anne's eager eyes. . . . Much of all this was due to Miss Stacy's tactful, careful, broad-minded guidance. She led her class to think and explore and discover for themselves and encouraged straying from the old beaten paths to a degree that quite shocked Mrs Lynde and the school trustees, who viewed all innovations on established methods rather dubiously" (L.M.Montgomery 351-352)

Miss Stacy is an exemplar from the beginning period of the women's empowerment movements. She is a trendsetter from the pages of the late nineteenth century whose integrity suits even for the contemporary generation of single working women who are going to live in a world in which self-sustainability is inevitable when they can't trust or rely on any male members of their family. The increasing trust issues in the present society are an outcome of the parallel increase in sexual and emotional abuses faced by the vast women's community. Miss Stacy is a perfect icon from a more challenging period who gives hope and confidence for any woman who, without any encouragement, struggles to cope with the complicated ways of life.

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# Peoples Satisfaction Level Regards Cashless Transactions in Chennai District

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## Abstract

*The purpose of the study has to examine peoples satisfaction level regards cashless transactions in Namakkal District. The main objectives of the study has to analyze the people's satisfaction level regards benefits of cashless transactions and secondary objective were to know the problems faced by the peoples while using cashless transaction. The sample size is 100 and Simple Random Sampling Method is adopted for this study. The major findings of the study has the Chi-Square results proved that there is a significant relationship between age and satisfaction level regards the benefits of using cashless transaction and the Weighted average method are proved that the major problem faced by the peoples is 'Struck at the time of using cards'. Finally this study concluded that in the poor penetration of facilities, it is not possible for everyone to get used to cashless transactions. So Govt. should take necessary steps to encourage using cards or e-wallets by giving tax benefit to customers as well as peoples. This would help to our nation to travel a successful journey in the Cashless economy path.*

*Keywords: Peoples Satisfaction, Cashless, Transactions*

## Introduction

The Indian retail industry is one of the most dynamic and fast-paced industries due to the entry of several new players. India is the world's fifth-largest global destination in the retail space. It accounts for over 10 per cent of the country's Gross Domestic Product (GDP) and around 8 per cent of the employment. The retail industry is classified into organized and unorganized retailing. The organized retailing includes trading activities undertaken by licensed retailers, i.e. those who are registered for sales tax, income tax, etc. This includes hypermarkets, retail chains and large retail businesses.

The increase in usage of smart phone, expanding Internet access and rising digital media consumption will have a profound impact on the future of Indian retail. However,

demonetization has created a financial crunch for the retailers. The industry generates a lot of cash transactions, therefore, a reduction in sales will continue in the short-term. This impact is being felt largely by small traders and the unorganised retailing segment prevalent on many high streets across the country.

### Need of the Study

Cashless transaction is an outstanding step in the Indian History to restrict the black money and counterfeiting of Indian currency. This step is also an outbreak for the promotion of organized retailing and the Digital India Campaign. This study will identify the impact of cashless transaction on people with specific to retailing. The study is covering 100 peoples from Chennai District.

### Statement of the Problem

The step of central government aims to eliminate black money and also it will promote the sustainable and inclusive economic development. It will surely bring the clear view of every transaction within the country and promote cashless transaction. This step will affect general people and also retailers to some extent but for the benefit of future generation such decisions are inevitable. Even though the cashless transaction process affect the retailers in small and large scale those who are providing essential goods and service to the people. This study helps to know the people satisfaction level regards benefits and also problem are analysed in the cashless transaction.

### Objectives of the Study

- To analyze the people's satisfaction level regards benefits of cashless transactions.
- To know the problems faced by the people while using cashless transaction.
- To give suggestions for overcome the problems of peoples.

### Review of Literature

**Andy Fred wali, Len Tiu Wright and Paul Reynolds (2014)** examined cashless policy user's perception and retail marketing performance. The main objective of their study was the impact of cashless system on user perception and retail marketing performance in Nigeria retail sector. The sample size is 500. Quantitative descriptive statistics was adopted to analyse the data. In their study found that the measures of cashless system have positive influence on the measures of retail marketing performance and another finding while consumers perceived that the new system will be disadvantageous to them in short run but beneficial in the long

run. Finally they concluded that the cashless system is in line with international banking best practices as it will reduce the high cost of business operations for a retail business in terms of learned employees, provision of security and will boost retail investments opportunities in Nigeria.

**Geetha Rani (2016)** examined effects of demonetization on retail outlets. The main objective of her study was to know the trends and behaviour change in consumers and shopkeepers buying. In her study was analytical nature and used convenience sampling method. The major finding of her study shopkeepers started paytm and cheque facilities for consumer. Finally she concluded that also instigate the shopkeepers and consumers to adopt cashless means such as paytm, debit card and internet banking to buy goods.

**Kokila V and Dr. R.Ushadevi (2017)** examined the impact of demonetization on retailing an analysis. The main objective of their study was to know impact the demonetization process on retailing. The study was based on descriptive nature. The sample size is 80 from various retailers in karaikal district. Simple random sampling method was used. They analysis are found that most of the retailers accepted the demonetization activity for national interest. Finally they concluded that are forms of retailers are affected in various ways due to demonetization process although most of the retailers were supported and adjusted themselves for demonetization activity because of our national interest.

### **Research Methodology**

The analysis is based on survey method nature both primary and secondary source of data were used. The primary sources of data were collected through self constructed questionnaire. Samples of 100 peoples from Chennai District were taken for the study by using Simple random sampling method. The statistical tools were used as Percentage analysis, Weighted Average Rank method and Chi-square test.

### **Limitation of the Study**

The study was confined only in Chennai District and the results of the study cannot be generalized. Due to the time limit of the study are cannot be generalized for impact of cashless economy among peoples.

## Analysis and Interpretation

### Demographic Profile

Variables	Classification	Frequency	Percentage
Gender	Male	75	75.0
	Female	25	25.0
	<b>Total</b>	<b>100</b>	<b>100.0</b>
Age (in years)	Below 20	10	10.0
	20-30	60	60.0
	30-40	15	15.0
	Above 40	15	15.0
	<b>Total</b>	<b>100</b>	<b>100.0</b>
Educational Qualification	Illiterate	10	10.0
	Up to school level	30	30.0
	UG / PG	45	45.0
	Professionals	15	15.0
	<b>Total</b>	<b>100</b>	<b>100.0</b>
Monthly Income	Below Rs.10000	5	5.00
	Rs.10000-Rs.15000	0	0.00
	Rs.15001-Rs.20000	25	25.0
	Above Rs.20000	70	70.0
	<b>Total</b>	<b>100</b>	<b>100.0</b>
Marital Status	Married	60	60.0
	Unmarried	40	40.0
	<b>Total</b>	<b>100</b>	<b>100.0</b>
Type of Retailer	Mobile shop	15	15.0
	Textile	30	30.0
	Hotel	20	20.0
	General Stores	35	35.0
	<b>Total</b>	<b>100</b>	<b>100.0</b>
Frequent Payment Method	Debit card	50	50.0
	Credit card	0	0.0
	E-Wallet	0	0.0
	All the Above	50	50.0
	<b>Total</b>	<b>100</b>	<b>100.0</b>

Source: Primary Data

From the above table reveals that 75% of the respondents are male and they (60%) belongs to the age group of 20-30 years. 45% of the respondents were studied up to college level (UG & PG) and their (70%) monthly income is above 20,000 rupees. The majority of the respondents are (60%) are married and they are (35%) are general stores retailers. 50% of the retailer's frequently using payment method is debit cards and another 50% of the respondents are using all the above like Debit card, Credit card, E-wallet.

**Chi-Square Test**

**Cross Tabulation**

**Table No 2 Age and Satisfaction Level regards the Benefits of using Cashless Transaction**

Age	HS	S	M	DS	HDS	Total
Below 20	5 (50.0%)	0 (0.0%)	5 (50.0%)	0 (0.0%)	0 (0.0%)	10 (100.0%)
20-30	15 (25.0%)	10 (16.7%)	25 (41.7%)	10 (16.7%)	0 (0.0%)	60 (100.0%)
31-40	5 (33.3%)	0 (0.0%)	0 (0.0%)	5 (33.3%)	5 (33.3%)	15 (100.0%)
Above 40	0 (0.0%)	10 (66.7%)	5 (33.3%)	0 (0.0%)	0 (0.0%)	20 (100.0%)
Total	25 (25.0%)	20 (20.0%)	35 (35.0%)	15 (15.0%)	5 (5.0%)	100 (100.0%)

Source: Primary Data

From the above table reveals that among the total respondents 10% of the respondents whose age is below 20 years are highly satisfied while using cashless transaction, 60 % of the respondents having 20-30 years are mostly using the moderate level of while using cashless transaction, 15 % of respondents who are in the age are between 31 – 40 years are using dissatisfied while using cashless transaction and 20% of the respondents are above 40 age groups are satisfied while using the cashless transaction. Hence the majority of the respondents in the age group 20-30 years are mostly satisfied the benefits of while using the cashless transaction.

**Table No 3 Chi Square Test**

**Hypothesis**

*H0: There is no significant association between age and satisfaction level regards the benefits of using cashless transaction*

*H1: There is significant association between age and satisfaction level the benefits of using cashless transaction*

**Age and Satisfaction Level regards the Benefits of using Cashless Transaction**

FACTOR	Chi-Square	Degree of Freedom	P Value	Remark
Pearson Chi-Square	70.556 <sup>a</sup>	12	.000	Significant

Source: Primary Data

The above table reveals that P value (0.00) is less than Significant Value (0.05). Hence the null hypothesis is rejected. So there is a significant relationship between age and satisfaction level regards the benefits of using cashless transaction.

**Table No 4 Weighted Average Method**

Problems	Mean Score	Rank
Not acceptability of some cards	2.70	2
Struck at the time of using cards	3.00	1
Less awareness of advanced technology	2.30	3
Customers hesitation regards insecurity while using cards	2.00	4

*Source: Primary Data*

From the above table reveals that the major problems faced by the peoples ‘Struck at the time of using cards’ is got first rank, ‘Not acceptability of some cards’ is listed as second problem, ‘Less awareness of advanced technology’ is listed as third problem and finally ‘Customers hesitation regards insecurity while using cards’ is got least rank in the problems list. Hence the major problem faced by the peoples is ‘Struck at the time of using cards’.

## Findings

- From the above table reveals that 75% of the respondents are male and they (60%) belongs to the age group of 20-30 years.
- 45% of the respondents were studied up to college level (UG &PG) and their (70%) monthly income is above 20,000 rupees.
- The majority of the respondents are (60%) are married and they are (35%) are general stores retailers.
- 50% of the retailer’s frequently using payment method is debit cards and another 50% of the respondents are using all the above like Debit card, Credit card, E-wallet.
- The Chi-Square cross tabulation results shows that the majority of the respondents in the age group 20-30 years are mostly satisfied the benefits of using cashless transaction.
- The Chi-Square test proved that there is a significant relationship between age and satisfaction level regards the benefits of using cashless transaction.
- The Weighted average method are expose that the major problem faced by the peoples ‘Struck at the time of using cards’ is got first rank.

## Suggestions

The cashless economic activity had a great and brave step to enhance the transparent economic development. The activity will give the benefit after some years although during that process it has impact on all the sectors particularly the retailing. Therefore the following suggestions will help to improve our retail sectors. The government should initiate and take step for digital payment system in all the retail outlets with proper training for using cashless transaction and awareness about E-wallet. The banks should provide swiping machines to all the retailers with free of cost and exempt from service tax.

## Conclusion

The adopting the cashless means economy will be sound in coming time and Indian Economy will get benefits of early and hassle free transactions. The government has initiated a war against corruption, black money and eliminating fake currency through the cashless activity. Due to the demonetization activity there are several implications that have to be faced by the all types of retailer and wholesaler, service renders and the economy as a whole. All forms of retailers are affected in various ways due to demonetization process although most of the retailers were supported and adjusted themselves for demonetization activity because of our national interest. The benefits of this move have now started trickling in with more and more people switching to digital modes of receiving and making payment. The whole country is undergoing the process of modernization in money transactions, with various cashless transaction and e-payment services gaining unprecedented momentum. Finally this study concluded in the poor penetration of such facilities, it is not possible for everyone to get used to cashless transactions. So Govt. should take necessary steps to encourage using cards or e-wallets by giving tax benefit to customers as well as retailers. This would help to our nation to travel a successful journey in the Cashless economy path.

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# A Study on the Impact of Offer Price and Time of Delivery on Online Purchase Decision

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## Abstract

*The electronic form of commerce has gained much importance in the recent past. Applications are developed enabling customers to access various products on one go. In the current scenario, the usage of online shopping has grown multi-fold. People are scared to go out and make purchases. The offer prices on products and fast delivery have often influenced many customers to make online purchases. This study analyzes the extent of influence these factors have on online purchases. Responses have been collected from 70 respondents for analysis.*

*Keywords: Online purchase, Offer price, Time of delivery, purchase decision*

## Introduction

Digitalization was a dream a decade ago. But now after the pandemic, lockdowns, and physical distancing, it has become the order of the day. People choose online shopping as their mode of purchase based on the following reasons - hectic schedule, availability of products, offers, etc. More than all these, the environment outside is not that conducive for the customer to move around amongst the crowd to make their purchases. Nowadays, groceries, fruits, vegetables, food, milk, and even medicines are available online. Just on a click of a button, customers can choose among varieties and make their purchases. Many offers are provided by the sellers to attract customers. The latest trend is early delivery. The time is less, more people are attracted. Quick delivery of essential commodities has made more people use online purchases. Online purchase decisions are influenced by many factors viz., availability of varieties, comfortable timings of purchase, no contact delivery, offer prices, delivery time etc. Many stores have opened website to cater to the needs of online buyers.

## Review of literature

1. This study shows the impact of digital marketing on behavioral prospect of consumers. Modern day marketing has been going through a radical change. Fast moving marketing trends based on the growth and innovation of new technologies as well as portable communication devices influencing the customer behavior significantly.
2. The main objective of this study is to identify the factors responsible for the purchasing decisions of consumers in online shopping. In the study, the independent variables considered were Trust, Return Policy, Cash on Delivery, Cash Back Facilities, Service, and Reputation, and the effect of these variables on the dependent variable Purchasing Decision is found.
3. The recent growth of e-commerce and the consumer's increasing interest in purchasing over the net have significantly changed the landscape of Indian retail market. Today customers are inclined to accept the changes and keep their eyes on the benefits they can obtain from online retailers. The business owners who use e-commerce as a distribution channel need a clearer understanding of who buys online, what they buy online, why they buy online, and how the non-Internet buyer can be transformed into an online buyer in order to increase online sale.
4. The study aims to know the decision of consumers while purchasing online from various sites .Along with finding out why consumers prefer online shopping. The study is to have an in-depth knowledge of how consumers made decisions on various products.

## Advantages of online shopping

Convenience many people prefer online shopping for the convenience it provides. Convenience in time, no crowd, no waiting in the billing counter, no pollution, no extra cost, convenience to buy relative products together, choice of products makes online shopping convenient.

Better prices Offer prices, Cheap deals, comparison of prices are all possible in online shopping. Sometimes, the manufacturer itself straight away sells the product. So, they are able to provide the products at a lesser price by avoiding intermediaries. Customers can choose a seller who offers a better price for the product.

Varieties Choice to choose among various alternatives is an important benefit derived from online purchase. It may lead to confusion also to choose among alternatives. People who are brand oriented also are benefited, as almost all brands are available on online platform.

Comparison Availability of wide range of products and varieties benefit the purchaser by providing all features of the product. Reviews of the product are also available to enable purchasers to make wise online purchase decision.

Online tracking Order status and delivery status can be tracked clearly while online purchases are made. There is provision for specific delivery instructions too.

More control there is no influence by the sales personnel, who may sometimes unduly persuade the buyer to make purchase of goods which are not budgeted or planned. Only those items what the buyer opt is displayed. So, customers can exercise control on unwanted purchases.

There is absolutely no crowd, no parking pressure, no safety issues or any other kind of disturbances what purchasers may face on offline purchases. People can stay at home and at their convenient time and place, comfortably make their online purchases.

### **Disadvantages**

1. Packets used for packing the products are giving a negative impact on environment.
2. Goods may not arrive at the right time as expected which may tend to emotional disturbances.
3. Risk of fraud on payments.
4. Contact with the community is completely curtailed.
5. Time on gadgets many a times eat our personal time which otherwise would have been positively spent with family or friends or relatives.
6. Ordered products may not stand customers' expectation.

### **Objectives of the study**

1. To study the impact of offer price on online purchase decisions.
2. To study the impact of time of delivery on online purchase decisions.
3. To study the factors influencing online purchase decisions.
4. To study the association between monthly income and expenditure on online purchase.

## Research Methodology

This empirical research is based on primary data collected by questionnaire circulated to the respondents. Researcher has adopted One-way Anova, Mean, Standard deviation for analysis of data. Responses were collected from 70 respondents. Random sampling method was followed. Secondary data was collected from journals, magazines and newspapers and e-resources.

## Data Analysis

### *One-way Analysis of variance*

One-way ANOVA is a generalization of the two sample test. The F statistic compares the variability between the groups to the variability within the groups:

- where F is the variance ratio for the overall test, MST is the mean square due to treatments/groups (between groups), MSE is the mean square due to error (within groups, residual mean square),  $Y_{ij}$  is an observation,  $T_i$  is a group total, G is the grand total of all observations,  $n_i$  is the number in group i and n is the total number of observations.

In this research, the following are analyzed.

#### 1. Age to Offer Price

Null hypothesis – There is no statistically significant difference between the group mean.

Alternate hypothesis – There is statistically significant difference between the group mean.

### ANOVA

offer price

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	1.785	3	0.595	2.219	0.094
Within Groups	17.695	66	0.268		
Total	19.479	69			

### Interpretation

The output of ANOVA table shows that significance value of 0.094 (i.e.,  $p=0.094$ ) which is above 0.05, therefore, there is significant difference between age and offer price of the groups. The Table shows that irrespective of the age, people make their buying decision based on offers.

## 2. Income to Offer Price

Null hypothesis – There is no statistically significant difference between the group mean.

Alternate hypothesis – There is statistically significant difference between the group mean.

### ANOVA

offer price

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	2.239	3	0.746	2.857	0.044
Within Groups	17.241	66	0.261		
Total	19.479	69			

### Interpretation

The output of ANOVA table shows that significance value of 0.044 (i.e.,  $p=0.044$ ) which is below 0.05, therefore, there is no significant difference between income and offer price of the groups. Irrespective of the income, respondents purchase decision are influenced by offer price.

## 3. Age to Delivery

Null hypothesis – There is no statistically significant difference between the group mean.

Alternate hypothesis – There is statistically significant difference between the group mean.

### ANOVA

Delivery

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	1.785	3	.595	2.219	0.094
Within Groups	17.695	66	.268		
Total	19.479	69			

**Interpretation**

The output of ANOVA table shows that significance value of 0.094 (i.e.,  $p=0.094$ ) which is above 0.05, therefore, there is significant difference between age and time taken for delivery of goods.

**4. Monthly Income to Delivery Time**

Null hypothesis – There is no statistically significant difference between the group mean.

Alternate hypothesis – There is statistically significant difference between the group mean.

**ANOVA**

Delivery

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.239	3	0.746	2.857	0.044
Within Groups	17.241	66	0.261		
Total	19.479	69			

**Interpretation**

The output of ANOVA table shows that significance value of 0.044 (i.e.,  $p=0.044$ ) which is below 0.05, therefore, there is no significant difference between income and delivery time of the groups.

**5. Gender to Delivery Time**

Null hypothesis – There is no statistically significant difference between the group mean.

Alternate hypothesis – There is statistically significant difference between the group mean.

**ANOVA**

Delivery

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	0.036	1	0.036	0.125	0.725
Within Groups	19.444	68	0.286		
Total	19.479	69			

### Interpretation

The output of ANOVA table shows that significance value of 0.0725 (i.e.,  $p=0.725$ ) which is above 0.05, therefore, there is significant difference between gender and delivery time of the groups. Null hypothesis is accepted.

### Correlation analysis

Pearson's correlation coefficient is represented by the Greek letter **rho ( $\rho$ )** for the population parameter and **r** for a sample statistic. This correlation coefficient is a single number that measures both the strength and direction of the linear relationship between two continuous variables. The correlation coefficient is a value that indicates the strength of the relationship between variables. The coefficient can take any values from -1 to 1.

### Age to Frequency of Purchase

The relationship between age and frequency of purchase are analysed through correlation analysis.

#### Correlations

		Age	Frequency of online purchase
Age	Pearson Correlation	1	0.088
	Sig. (2-tailed)		0.469
	N	70	70
Frequency of online purchase	Pearson Correlation	0.088	1
	Sig. (2-tailed)	0.469	
	N	70	70

### Interpretation

This table shows that there is positive relationship between age and frequency of purchase.

**Regression analysis**

Regression analysis is a form of inferential statistics. The p-values help determine whether the relationships that you observe in your sample also exist in the larger population. The p-value for each independent variable tests the null hypothesis that the variable has no correlation with the dependent variable.

Null hypothesis – There is no impact of offer price on monthly income

Alternate hypothesis – There is impact of offer price on monthly income

**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.294 <sup>a</sup>	0.086	0.073	0.51156

Predictors: (Constant), Monthly Income

**ANOVA<sup>a</sup>**

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	1.684	1	1.684	6.436	0.013 <sup>b</sup>
	Residual	17.795	68	0.262		
	Total	19.479	69			

a. Dependent Variable: offer price

b. Predictors: (Constant), Monthly Income

Interpretation – The significant value should be less than 0.05. In the table, p value is 0.013. Therefore, the null hypothesis is rejected and there exist a significant impact of offer price on monthly income.



### Offer Price on Monthly Expenditure on Online Purchase

Null hypothesis – There is no impact of offer price on monthly expenditure on online purchase

Alternate hypothesis – There is impact of offer price on monthly expenditure on online purchase

**Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.300 <sup>a</sup>	.090	0.077	0.51059

a. Predictors: (Constant), Spending on online purchases per month

b. Dependent Variable: offer price

**ANOVA<sup>a</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.752	1	1.752	6.719	0.012 <sup>b</sup>
	Residual	17.728	68	0.261		
	Total	19.479	69			

a. Dependent Variable: offerprice

b. Predictors: (Constant), Spending on online purchases per month

Interpretation – The significant value should be less than 0.05. In the table, p value is 0.012. Therefore, the null hypothesis is rejected and there exist a significant impact of offer price on monthly expenditure on online purchase.

### Conclusion

Digitalization has become the key word in today’s scenario. People have become technically sound as far as usage of mobile phone is concerned. The impact of offer price and time of delivery is studied here. How far these two items influence consumers’ purchase decision is analyzed and the following conclusions are made.

1. **Influence of Offer Price and Time of Delivery:** Your findings suggest that offer price significantly impacts consumer decisions across different demographic groups. This indicates that promotional pricing can be a powerful tool for driving purchases. Time of delivery also plays a role but varies by age and gender, showing that while timely delivery is important, its impact may differ based on customer demographics.
2. **Age and Offer Price:** The significant difference between age groups regarding offer price implies that different age groups may respond differently to discounts and promotions. For instance, younger consumers might be more price-sensitive, while older consumers may prioritize other factors like quality or brand reputation.
3. **Income and Offer Price:** Regardless of income, offer price influences purchase decisions, suggesting that promotions are effective across various income levels. Lower-income consumers might be more price-sensitive, but even higher-income individuals are attracted to deals.
4. **Age and Delivery Time:** The significant difference between age and delivery time indicates that delivery expectations and preferences can vary by age group. Younger consumers might prioritize faster delivery more than older ones, who might be more tolerant of longer delivery times.
5. **Gender and Delivery Time:** The significant difference between gender and delivery time suggests that men and women might have different expectations or tolerances for delivery times. Understanding these differences can help tailor delivery services to meet diverse customer needs.
6. **Income and Delivery Time:** The lack of significant difference between income and delivery time suggests that delivery speed might be equally important across different income levels, or that income does not significantly influence preferences for delivery times.
7. **Impact on Monthly Income and Expenditure:** The significant impact of offer price on monthly income and expenditure highlights that promotional pricing not only attracts purchases but also affects spending patterns. This insight can help companies design targeted marketing strategies.
8. **Strategic Recommendations: Promotional Strategies -** Companies should leverage offer prices to attract and retain customers. Tailoring promotions based on age and income groups can enhance their effectiveness.

- Delivery Options - Offering various delivery options that cater to different age groups and gender preferences can improve customer satisfaction and potentially boost sales.

- Personalized Marketing - Utilizing data on customer preferences for offer prices and delivery times can help create personalized marketing campaigns, increasing the likelihood of conversion.

In summary, understanding how offer prices and delivery times affect different consumer demographics allows companies to optimize their strategies and improve customer satisfaction. By focusing on these factors, online businesses can enhance their sales performance and customer loyalty.

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# Employee Performance Appraisal Based on HRM Practices in IT Sector: An Overview

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## Abstract

*The Information Technology (IT) sector thrives on talent and innovation, demanding dynamic performance appraisal systems aligned with its rapidly evolving landscape. Modern Human Resource Management (HRM) practices serve as a beacon, guiding organizations to cultivate excellence, retain top talent, and foster growth. This study delves into the intricacies of HRM practices, performance appraisal methods, key performance indicators, and their impact on employee performance within the IT sector. The research adopts a descriptive approach, drawing insights from primary and secondary data sources. Primary data is collected through meticulously designed questionnaires administered to employees and HR professionals in IT organizations. Simple random sampling techniques ensure representation across different organizational levels and functional domains. Ethical considerations are paramount, with participants assured of confidentiality and informed consent. The study evaluates the effectiveness of HRM practices and performance appraisal methods in enhancing employee performance, shedding light on key performance indicators and their interplay with job satisfaction. Findings suggest challenges in aligning HRM strategies with the dynamic needs of the IT sector, particularly in evaluating technical competencies and fostering continuous improvement. The scope encompasses diverse IT organizations across domestic and international markets, exploring HRM practices across various functional areas and organizational sizes. By analyzing historical trends and recent developments, the study identifies emerging HRM strategies and performance evaluation frameworks, paving the way for future research and practice. Statistical tools including percentage analysis, Chi-square and ANOVA are employed to analyze data, highlighting trends and relationships among variables. The study underscores the pivotal role of HRM practices in optimizing employee performance, fostering innovation, and sustaining competitiveness in the ever-changing realm of IT. In conclusion, by embracing modern HRM practices tailored to the unique needs of the IT sector, organizations can unlock the full potential of their human capital, driving sustainable growth and innovation in a highly competitive environment.*

**Keywords:** HRM practices, Employee Performance Appraisal and IT industry

## Introduction

The IT sector, a realm of constant evolution where talent reigns supreme, demands a performance appraisal system as dynamic as its environment. Unlike traditional, one-size-fits-all methods, effective appraisals in this arena must navigate the unique challenges of rapid technological advancements, project-based work, and remote work cultures. But fear not, for modern HRM practices act as a compass, guiding organizations towards a system that fosters excellence, retains top performers, and fuels growth.

By embracing these modern HRM practices and tailoring them to the specific needs of the IT sector, organizations can cultivate a performance appraisal system that is fair, effective, and empowering. It becomes a tool not just for evaluation, but for growth, development, and ultimately, unleashing the full potential of their most valuable asset – their people. This, in turn, drives innovation, fosters a thriving work environment, and positions the organization for success in the ever-changing realm of IT.

## Statement of Problem

The Information Technology (IT) sector operates within a highly competitive and rapidly evolving environment, where human capital is recognized as a critical driver of organizational success. However, despite the significance of human resource management (HRM) practices and performance appraisal methods in optimizing employee performance, challenges persist in effectively aligning these practices with the unique dynamics of the IT sector.

Traditional performance appraisal methods may not adequately capture the nuances of performance evaluation within the IT sector. The rapid pace of technological innovation and project delivery demands agile and objective appraisal methods that can accurately assess technical competencies, problem-solving abilities, and collaborative skills. The problem thus revolves around identifying and implementing performance appraisal methods that are relevant, fair, and conducive to continuous improvement.

The identified problems underscore the complexities inherent in managing human capital and optimizing performance in the IT sector. Addressing these challenges requires a holistic understanding of HRM practices, performance appraisal methods, key performance indicators, and their interplay with employee satisfaction. By recognizing and addressing these problem areas, organizations can better leverage their human capital to achieve sustainable growth and competitiveness in the dynamic IT landscape.

### Objectives of the Study

- To evaluate the impact of HRM practices on employee performance in IT sector.
- To evaluate the effectiveness of performance appraisal methods in IT sector
- To evaluate the key performance indicators in IT sector
- To examine the relationship between job satisfaction and employee performance in IT sector.

### Scope of the Study

- The study focus on IT companies operating in both domestic and international markets, encompassing various geographical regions. While the primary focus is on established IT hubs, such as Silicon Valley, Bengaluru, and London, the study also consider emerging IT markets to ensure a comprehensive understanding of industry dynamics.
- The study target a diverse range of IT organizations, including software development firms, IT consulting companies, and technology startups. By examining organizations of varying sizes and specialties, the study aims to capture a broad spectrum of HRM practices, performance appraisal methods, and performance indicators prevalent across the IT sector.
- The study explore HRM practices and performance appraisal methods across different functional areas within IT organizations, including software development, project management, quality assurance, and client services. By examining performance evaluation processes across various functional domains, the study seeks to identify commonalities, challenges, and best practices applicable to diverse roles and responsibilities within the IT sector.
- The study consider HRM practices and performance appraisal methods implemented over a specified timeframe, typically ranging from the past five to ten years. By analyzing historical trends and recent developments, the study aims to provide insights into the evolution of HRM strategies and performance evaluation frameworks within the IT sector, highlighting emerging trends and future directions for research and practice.

## Research Methodology

**Type of Research:** The research is descriptive in nature, aiming to provide a comprehensive overview of HRM practices, performance appraisal methods, key performance indicators, and their relationship with employee performance in the IT sector.

### Source of Data Collection

**Primary data:** Primary data is collected through the administration of questionnaires to employees and HR professionals within IT organizations.

**Secondary data:** Secondary data is sourced from reputable websites, academic journals, industry reports, and other scholarly publications.

**Type of Sampling:** Simple random sampling is employed to ensure each member of the population has an equal chance of being selected for the study. This method helps minimize bias and ensures the representativeness of the sample.

**Sample Size:** The sample size for the study is determined to be 150, comprising employees and HR professionals from various IT organizations. This size is deemed sufficient to capture diverse perspectives and facilitate meaningful analysis while ensuring practical feasibility.

**Tools Used for the Study:** Percentage Analysis, Chi-square analysis and Anvoa.

## Limitations of the Study

- The study's findings may be limited by the representativeness of the sample, as it may not fully reflect the diversity and complexity of HRM practices and performance appraisal methods across all IT organizations.
- The accuracy and reliability of the data collected through questionnaires may be affected by response bias, as respondents may provide socially desirable or inaccurate responses, leading to potential distortions in the findings.
- While the study aims to provide insights into HRM practices and performance appraisal methods in the IT sector, the findings may have limited generalizability beyond the specific context and timeframe of the study.
- The validity and reliability of the data collected, particularly from secondary sources, may vary, potentially affecting the robustness and credibility of the study's conclusions and recommendations.

## Analysis and Interpretation

### Demographic variables of the respondents

Demographic variables	Particulars	Frequency	Percent
Age	Below 30 Years	104	52
	Below 31-60 Years	89	44.5
	Above 60 Years	7	3.5
	Total	200	100
Marital status	Single	96	48
	Married	104	52
	Total	200	100
Occupation	Government	15	7.5
	Private	63	31.5
	IT	24	12
	Others	98	49
	Total	200	100
Gender	Male	92	46
	Female	108	54
	Total	200	100

#### Age Distribution

- Below 30 Years: 104 individuals, which represents 52% of the total sample.
- Between 31-60 Years: 89 individuals, accounting for 44.5% of the total.
- Above 60 Years: 7 individuals, constituting 3.5% of the total sample.
- Overall, the majority of the sample falls below 30 years or between 31-60 years, with a smaller portion being above 60 years old.

#### Marital Status

- Single: 96 individuals, making up 48% of the total sample.
- Married: 104 individuals, accounting for 52% of the total sample.
- Roughly an equal number of individuals are single and married in the sample.

#### Occupation

- Government: 15 individuals, comprising 7.5% of the total sample.
- Private: 63 individuals, representing 31.5% of the total.
- IT: 24 individuals, accounting for 12% of the total.
- Others: 98 individuals, making up 49% of the total sample.
- The largest group seems to be in "Others," followed by "Private" occupations. Government and IT occupations have smaller proportions in the sample.



### Gender Distribution

- Male: 92 individuals, making up 46% of the total sample.
- Female: 108 individuals, representing 54% of the total sample.
- There are slightly more females than males in the sample.

In summary, the sample consists of individuals across different age groups, marital statuses, occupations, and genders. The majority are below 30 or between 31-60 years old, married, employed in private or other sectors, and there is a slight predominance of females in the sample.

### Identify the most influential HRM practice for enhancing IT employee performance

	Frequency	Percent
Training and Development	124	62.0
Performance Appraisal	40	20.0
Employee Engagement Programs	20	10.0
Recruitment and Selection	16	8.0
Total	200	100.0

According to the data, the most influential HRM practice for enhancing IT employee performance, as identified by 62.0% of respondents, is Training and Development. This suggests that the majority of respondents perceive training and development initiatives to have the greatest impact on improving employee performance within the IT sector. Performance Appraisal follows with 20.0% of respondents, indicating a lesser but still significant influence. Employee Engagement Programs and Recruitment and Selection are viewed as less influential, with 10.0% and 8.0% of respondents respectively. Overall, the data highlights a strong emphasis on training and development as the primary HRM practice for enhancing IT employee performance among the respondents.

### Chisqaure Test

#### Comparison between age \* HRM's role in motivating employees and enhancing performance is significant

Ho1: There is no reallationship between age and HRM's role in motivating employees and enhancing performance is significant

		Count					
		HRM's role in motivating employees and enhancing performance is significant.					Total
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
Age	Below 30 Years	1	2	21	37	43	104
	Below 31-60 Years	0	2	16	38	33	89
	Above 60 Years	1	0	2	2	2	7
Total		2	4	39	77	78	200

It's essential to look at the pattern of responses across age groups. We observe that the highest counts of "Agree" and "Strongly Agree" responses generally come from the younger age group (below 30 years), while the counts decrease with increasing age. However, we need to perform statistical analysis to confirm if this pattern is significant or due to chance.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	15.088 <sup>a</sup>	8	.007

We reject the null hypothesis H0, indicating that there is a significant relationship between age and HRM's role in motivating employees and enhancing performance. The age of employees appears to influence their perceptions of HRM's effectiveness in motivating them and enhancing performance within the organization.

### Comparison between age and assess the impact of job satisfaction on employee performance

Ho2: Significant difference exists between age and assess the impact of job satisfaction on employee performance

Descriptive								
Assess the impact of job satisfaction on employee performance.								
	N	Mean	SD	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Below 30 Years	104	4.11	1.114	.109	3.89	4.32	1	5
Below 31-60 Years	89	4.02	1.097	.116	3.79	4.25	1	5
Above 60 Years	7	4.00	.577	.218	3.47	4.53	3	5
Total	200	4.06	1.089	.077	3.91	4.22	1	5

ANOVA					
Assess the impact of job satisfaction on employee performance					
	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	.363	2	.182	.152	.859
Within Groups	235.792	197	1.197		
Total	236.155	199			

The mean scores for assessing the impact of job satisfaction on employee performance are relatively similar across different age groups: 4.11 for below 30 years, 4.02 for 31-60 years, and 4.00 for above 60 years.

The ANOVA test examines whether there is a significant difference in the means of job satisfaction impact scores across the age groups.

The F-statistic of 0.152 and the associated p-value (Sig.) of .859 indicate that the difference in means is not statistically significant at the 0.05 significance level.

Thus, we fail to reject the null hypothesis H<sub>0</sub>, suggesting that there is no significant difference in the impact of job satisfaction on employee performance across different age groups.

In summary, based on the ANOVA results, there is no evidence to suggest that age significantly influences the perception of the impact of job satisfaction on employee performance. The observed mean scores for job satisfaction impact are comparable across age groups, indicating a consistent perception among employees regardless of age.

## Findings

- The majority of employees fall within the age category "Below 30 Years," comprising 52.0% of the total sample size of 200 employees.
- The majority of employees are categorized as "Married," accounting for 52.0% of the total sample size of 200 employees.
- The majority of respondents, accounting for 49.0% of the total sample, are categorized under "Others" for occupation.
- The majority of respondents, comprising 54.0% of the total sample, identify as female, while 46.0% identify as male.
- The majority of respondents perceive training and development initiatives to have the greatest impact on improving employee performance within the IT sector.
- This suggests that a significant majority of respondents view career development opportunities as having the highest impact on enhancing employee performance.
- The majority of respondents, comprising 77 respondents or 38.5% of the total sample, agree that HRM plays a significant role in motivating employees and enhancing performance.
- Majority HRM Strategy: The HRM strategy with the highest preference among employees for productivity improvement is "Performance-Based Incentives," with 34.0% of the total sample size of 200 employees selecting this option.
- According to the data, HRM practices are ranked by their influence on employee performance significance, with Training and Development identified as the most influential by 40.5% of respondents
- According to the data, the most effective performance appraisal method for assessing employees, as identified by the majority of respondents, is Behavioral Observation Scales, with 34.5% of respondents favoring this method

- According to the data, performance appraisal methods are ranked by fairness and accuracy, with Self-Assessment identified as the most fair and accurate by the majority of respondents, accounting for 52.0% of responses.
- According to the data, the majority of respondents, comprising 84.0% (45.0% positively and 39.0% somewhat positively), perceive the impact of the performance appraisal process on motivation and job satisfaction as positive or somewhat positive.
- According to the data, the most critical factor for a successful performance appraisal system, as identified by the majority of respondents, is Employee Involvement, with 38.5% of respondents selecting this factor.
- According to the data, the importance of performance appraisal in enhancing organizational performance is ranked by various factors, with Identifying Training Needs identified as the most important by the majority of respondents, accounting for 36.5% of responses.
- According to the data, the most crucial Key Performance Indicator (KPI) for IT success, as identified by the majority of respondents, is Customer Satisfaction, with 44.0% of respondents selecting this indicator
- According to the data, Key Performance Indicators (KPIs) are ranked based on their relevance to assessing organizational performance, with Customer Retention Rate identified as the most relevant by the majority of respondents, accounting for 44.5% of responses.
- Overall, the data suggests a predominantly positive perception regarding the alignment of current KPIs with IT strategic goals among the respondents.
- According to the data, the top Key Performance Indicator (KPI) for measuring IT project success in organizations, as identified by the majority of respondents, is Quality of Deliverables, with 44.0% of respondents selecting this indicator.
- Overall, the data highlights a strong emphasis on employee engagement as the most effective KPI for driving continuous improvement insights among the respondents.
- This indicates that a significant portion of respondents believe that job satisfaction positively influences employee performance.
- According to the data, the majority of respondents, comprising 68.5%, identify Recognition and Rewards as the primary factor contributing to job satisfaction.

- According to the data, the majority of respondents, comprising 91.0% (47.5% significantly and 43.5% moderately), perceive job satisfaction to have a positive impact on employee retention.

### Suggestions

- **Focus on Training and Development:** Given the majority perception that training and development initiatives have the greatest impact on improving employee performance, organizations should prioritize investment in learning programs. This could include offering a variety of training opportunities, such as workshops, seminars, online courses, and mentorship programs, to continuously develop employees' skills and competencies.
- **Implement Performance-Based Incentives:** Since performance-based incentives emerged as the top HRM strategy for productivity improvement, organizations should consider adopting or enhancing incentive programs tied to individual and team performance. These incentives could include bonuses, profit-sharing, recognition awards, or career advancement opportunities to motivate employees and drive desired outcomes.
- **Enhance Performance Appraisal Methods:** With Behavioral Observation Scales being favored as the most effective performance appraisal method, organizations should consider incorporating more behavioral-based assessment techniques into their appraisal processes. Additionally, emphasizing employee involvement and self-assessment, which were perceived as fair and accurate appraisal methods, can enhance employee engagement and ownership in the evaluation process.
- **Strengthen Job Satisfaction Factors:** Recognizing the importance of job satisfaction in influencing employee performance and retention, organizations should prioritize initiatives aimed at improving recognition and rewards, creating a positive work environment, and providing opportunities for learning and growth. Implementing employee recognition programs, fostering a supportive work culture, and offering career development opportunities can significantly contribute to enhancing job satisfaction and overall employee performance.
- **Align KPIs with Strategic Goals:** Since Customer Satisfaction and Customer Retention Rate were identified as critical Key Performance Indicators (KPIs) for organizational success, organizations should ensure that KPIs are aligned with strategic goals and reflect the priorities of the business. Regularly reviewing and refining KPIs to reflect changes in market dynamics and organizational objectives can help drive continuous improvement and performance excellence.

- **Promote Employee Engagement:** Recognizing the strong emphasis on employee engagement as an effective KPI for driving continuous improvement insights, organizations should prioritize initiatives aimed at fostering employee engagement and involvement. This could include soliciting feedback, providing opportunities for participation in decision-making processes, and creating a supportive and inclusive work environment that encourages collaboration and innovation.
- By implementing these suggestions, organizations can enhance their HRM practices, optimize employee performance, and ultimately achieve their strategic objectives. Regularly monitoring and evaluating the effectiveness of these initiatives through feedback mechanisms and performance metrics enable organizations to continuously improve and adapt to evolving workforce dynamics and business needs.

## Conclusion

The analysis of the provided data offers valuable insights into various aspects of HRM practices, employee perceptions, and organizational strategies. It's evident that the workforce is predominantly young, with a significant proportion being married and holding diverse occupations. Employees perceive training and development as pivotal for improving performance, while performance-based incentives are favored for productivity enhancement. Moreover, involving employees in the appraisal process is deemed crucial. Key Performance Indicators such as customer satisfaction and quality of deliverables are paramount for organizational success, highlighting the importance of customer-centric approaches and high-quality outputs. Recognizing and rewarding employees, along with providing opportunities for learning and growth, significantly contribute to job satisfaction and overall performance. Overall, there's a positive alignment between organizational strategies and employee expectations, emphasizing the need for tailored HRM practices to foster a motivated and high-performing workforce in the IT sector.

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# A study on trend analysis of CSR activities of selected listed companies in Coimbatore city - An analytical study

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## Abstract

*This research investigates the trend analysis of CSR activities of selected listed companies in Coimbatore City for five years and explores the relationship between CSR expenditure and the ROA. A mixed was observed in this study, while some firms resulted in a positive correlation between CSR spending and ROA, while others showed a negative relationship. These results suggest the impact of CSR on financial performance varies across the different sectors and firms.*

*Keywords: Trend analysis, Rank analysis, CSR, ROA, Financial performance*

## Introduction

Corporate Social Responsibility (CSR) is a management concept. It is one of the business strategies whereby companies are involved in social, and environmental concerns in their business operations and interaction with stakeholders of their companies. CSR is generally accepted as, how the company achieves a balance of economic, social, and environmental concerns (“Triple - line Approach”).

## Objectives of the Study

- To Analyze the trends and patterns of spending on CSR activities.
- To Compare the CSR spending among different companies.
- To examine the relationship between CSR expenditure and the Financial performance of the companies.

## Scope of the Study

The study aims to analyze trends and patterns of CSR activities of the selected listed companies in Coimbatore city. The research utilizes the secondary data which is available from the annual report, and Sustainability report, and ensures the comprehensive evaluation of trends over the past 5 years. The scope of the study is limited to the selected companies operating in Coimbatore City which allows the identification of CSR expenditure where the activities have

been done during the financial year and also examines the relationship between CSR expenditure and Return Assets (ROA) over the past five years.

### Research Methodology

This study is quantitative research and was designed to perform a trend analysis of the CSR activities of selected listed companies in Coimbatore City over five years. Rank analysis and Pearson Correlation have been used variables such as Return On Assets (ROA), and CSR expenditure will be focused on the analysis by applying Pearson's Correlation analysis technique.

### Hypothesis for Pearson Correlation

- **Null Hypothesis (H0):** There is no significant relationship between CSR expenditure and ROA for selected companies.
- **Alternative Hypothesis (H1):** There is a significant relationship between CSR expenditure and ROA for selected companies.

### Limitation of the Study

- The study has been confined only to the period of 5 years.
- The changes that had taken place before and after the study period are not taken into consideration.
- The trend analysis of the CSR activities is not compared with other listed companies.
- The findings and suggestions may or may not be applied to other researchers.

### Review of Literature

**Ayush Agarwal, (2023) in their article** on “An Analysis of (CSR) & Its Expenditure in India (Trends, Impact, and Challenges)”. CSR has evolved into a critical concept of business strategy in India, reflecting the growing recognition of the private sector's role in addressing social and environmental challenges. The implementation of the Companies Act 2013, mandating CSR expenditure, has led to significant growth in corporate contribution towards social development. CSR initiatives in India have demonstrated positive impacts across various sectors, ranging from education, healthcare, environmental conservation livelihood enhancement, and community development. Case studies of successful CSR projects showcase the transformative potential of strategic and well-executed initiatives, emphasizing the positive impact on society, the environment, and the economy.

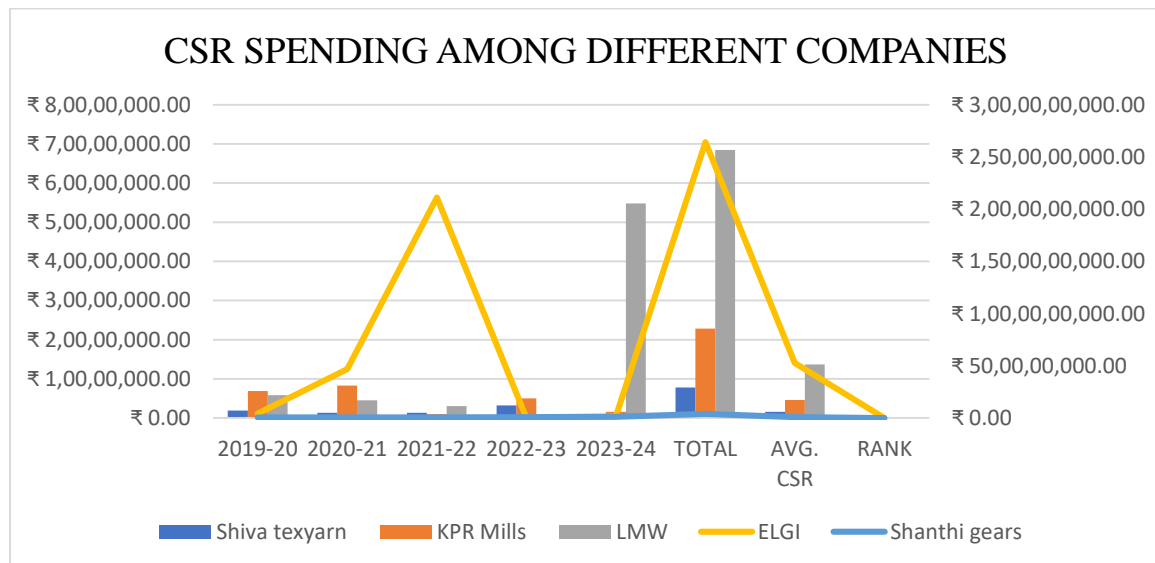
Ms. S.R. Bakyashri, Dr. M. Jayanthi, and Mrs. M. Jayanthi (2024) in their article on “Trend Analysis of the Selected Listed Companies”. CSR is a law in India, companies in the country whose net income is beyond the prescribed threshold limit to do social work. The concept of CSR which is included in social work, is crucial for the upliftment of the society and needy society. CSR has become mandatory in India but even before that, a few Indian companies are used to do social welfare of their own volition.

### Rank Analysis

#### CSR Spending among different companies

COMPANIES	2019-20	2020-21	2021-22	2022-23	2023-24	TOTAL	RANK
Shiva tex yarn	19,14,950	13,06,949	13,68,702	3190103	-	77,80704	5
KPR Mills	69,14,200	83,20,002	10,26,640	50,17,300	15,90,500	2,28,68,642	4
LMW	58,04,700	45,01,600	30,86,300	2,60,000	5,4778,950	6,84,31,550	2
ELGI	41,60,000	4,68,16,000	21,10,30,000	21,10,30,000	13	68,40,66,000	1
SHANTHI GEARS	56,00,000	68,00,000	68,00,000	78,00,000	1,18,00,000	3,88,00,000	1

(Source: Secondary data)



## Interpretation

From the above analysis, it shows that Elgi equipments and Shanthi Gears Limited ranked 1, LMW ranked 2, KPR ranked 4, and Shiva Taxyarn ranked 5. In the comparison of CSR expenditure among different companies for the past five years, Elgi equipments and Shanthi Gears Limited ranked first in CSR expenditure.

## Pearson's Correlation and Coefficient

COMPANY	YEAR 1 (2019-20)	YEAR 2 (2020-21)	YEAR 3 (2021- 22)	YEAR -4 (2022-23)	YEAR-5 (2023-24)	PEARSON CORRELATION (CSR& ROA)
Shiva Tex Yarn Limited	ROA 1.80% CSR ₹ 19,14,950	ROA 43.7% CSR ₹13,06,949.00	ROA 3.96% CSR ₹ 13,68,702	ROA 6% CSR ₹31,90,103	ROA -2% CSR ₹ 0	$r = -0.099076346$
KPR Mills Limited	ROA 13% CSR ₹ 69,14,200	ROA 13% CSR ₹ 83,20,002	ROA 17% CSR ₹ 10,26,640	ROA 22% CSR ₹50,17,300	ROA 16% CSR ₹1590500	$r = 0.207075503$
LMW	ROA 77% CSR ₹ 58,04,700	ROA 2 % CSR ₹ 45,01,600	ROA 2 % CSR ₹ 30,86,300	ROA 2 % CSR ₹ 2,60,000	ROA 9 % CSR ₹ 5,47,78950	$r = 0.608081151$
ELGI	ROA 9% CSR ₹4,16,00,000	ROA 10 % CSR ₹46,81,60,000	ROA 9 % CSR ₹2,11,03,00,000	ROA 15% CSR ₹59,00,000	ROA 17 % CSR ₹1,47,00,000	$r = -0.82096181$
Shanthi Gears Limited	ROA 9% CSR ₹ 56,00,000	ROA 9% CSR ₹ 68,00,000	ROA 57 % CSR ₹ 68,00,000	ROA 12 % CSR ₹78,00,000	ROA 18 % CSR ₹1,18,00,000	$r = -0.058863511$

(Source: Secondary data)

## Interpretation

### 1. Shiva Taxyarn Limited

- The Value of Coefficient ( $r = -0.099$ ). It is a negative correlation.
- There is a very weak and negative relationship between CSR expenditure and ROA, the change in CSR spending has almost no significant impact on ROA.

### 2. KPR Mills Limited

- The value of Coefficient ( $r = 0.207$ ) it's a positive correlation (weak).

- There is a weak positive relationship between CSR expenditure and ROA. This suggests that an increase in CSR spending slightly correlates with the increase in ROA, but the relationship is not strong.

### 3. LMW Limited

- The value of coefficient ( $r=0.608$ ) It's a Moderate correlation.
- There is a moderate positive relationship between CSR expenditure increases and ROA tends to increase moderately.

### 4. ELGI Equipment Limited

- The value of coefficient ( $r=-0.821$ ) There is a strong negative correlation between CSR expenditure and ROA, suggesting that higher CSR spending is associated with significant ROA.

### 5. Shanthi Gears Limited

- The value of correlation ( $r=-0.0588$ )I very weak negative correlation.
- Thus, there is almost no relationship between CSR expenditure and ROA as the correlation is very weak and negative.

## Findings

- There is a positive correlation (KPR Mills, LMW): CSR expenditure might be contributing to an improvement in ROA, with a moderate effect of correlation in LMW Limited. This analysis indicates that CSR expenditure moderately correlates with an increase in financial performance of the companies.
- There is a negative correlation (Shiva Teyarn Limited, ELGI Equipment Limited, and Shanthi Gears Limited). The CSR expenditure appears to hurt ROA, showing the strongest negative correlation and does not increase in financial performance of these companies.

## Suggestion

The CSR expenditure creates value by being mutually beneficial to the company and stakeholder's lies in understanding the relationship between CSR expenditure and Return On Assets (ROA), how socially responsible company affects the company's operational efficiency, financial performance, resource allocation etc. In this analysis there was a mixed results, KPR and LMW Limited shows positive correlation between CSR expenditure and ROA and while

other company's like Elgi, Shanthi Gears and Shiva Texyarn Limited has shows the negative correlation between CSR and ROA. Therefore, understanding the long term impact of CSR on financial performance of ROA, is essential for businesses seeking to balance ethical responsibilities with financial growth.

## Conclusion

Globally, Corporate Social Responsibility (CSR) has become very quite popular and crucial in the business sector. CSR has allowed the business to respond quickly to satisfy society's needs, promoting the social, economic, philanthropic activities, and environmental benefits of society. CSR practices reduce carbon footprint and also the government's burden by responding to and solving a wide range of issues in society. Some of the companies have shown fluctuations in CSR spending, which would vary based on market conditions, profitability, and also changes in strategies and policies of the company. The study suggests that the company has also invested mostly in healthcare, education, women empowerment, and environmental sustainability, to improve the good reputation of the company. Thus, the overall trend analysis provides some insights into CSR spending among different companies for five years, and also the relationship between financial performance (ROA) and CSR activities of the companies in Coimbatore City.

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# A Study of Lakme Company Ltd's Products with Reference to Chennai City

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## Abstract

*Consumers represent the largest economic group in any country and are crucial to driving modern business activities. They form the foundation of the economy and are central to marketing strategies. Despite this, consumer sovereignty is often viewed as a myth due to challenges in the merchandising process. Understanding consumer behavior is essential for marketers to predict and address consumers' needs in the marketplace. Individuals perceive the world through senses like sight, smell, touch, and hearing, which shape their buying decisions. This study examines consumer behavior and perception toward Lakme cosmetics, aiming to understand consumer attitudes and satisfaction levels. The findings indicate that most consumers report high satisfaction with the quality of Lakme products. Despite the brand's premium pricing, consumers feel the products meet their expectations in terms of quality and effectiveness. However, there is room for improvement, particularly in enhancing the design and packaging to attract a broader customer base. The research employed both primary and secondary data sources. Primary data was collected via a Google form questionnaire, while secondary data was sourced from project reports, internet journals, and books. A simple percentage analysis was used to interpret the data, highlighting consumer satisfaction with Lakme's product quality while suggesting potential design improvements.*

*Keywords: Consumer behavior, Lakme cosmetics, Consumer satisfaction, Premium pricing*

## Introduction

Lakme, a leading Indian cosmetic brand owned by Hindustan Unilever, dominates the country's cosmetics market. With Kareena Kapoor and Ananya Pandey as its brand ambassadors, Lakme has a rich history dating back to 1952 when it was founded by Tata Oil Mills (Tomco). Named after the French opera "Lakme" and linked to the Hindu goddess of wealth, the brand's creation was inspired by Prime Minister Jawaharlal Nehru's concerns over India's dependence on foreign beauty



products. Simone Tata, who joined the company as a director and later became its chairperson, played a pivotal role in Lakme's growth. In 1996, Tata sold her stake in the company to Hindustan Unilever for Rs 200 crore. Lakme has consistently been recognized as one of India's most trusted brands. According to the Brand Trust Report, it ranked 104th in 2012, 71st in 2013, and 36th in 2014. As the title sponsor of the prestigious Lakme Fashion Week, a biannual fashion event in Mumbai, the brand further solidifies its strong connection to the Indian fashion industry. By prioritizing consumer preferences and anticipating market trends, Lakme continues to effectively meet the evolving needs of its customers.

### Objective

- To conduct a comprehensive study on consumer perceptions and satisfaction towards Lakme products.
- To examine the attitudes and perceptions of consumers towards Lakme products and their impact on purchasing decisions.
- To analyze the growth trends and current scenario of the Indian cosmetic industry.
- To assess the level of awareness and knowledge among consumers regarding Lakme products and their features.
- To evaluate the satisfaction level of consumers with Lakme products and identify areas for improvement.
- To identify demographic factors influencing consumer preferences for Lakme products.
- To compare consumer satisfaction levels across different Lakme product categories.
- To suggest strategies for enhancing consumer satisfaction and loyalty towards Lakme products

### Statement of Problem

In today's consumer-centric market, understanding consumer behavior and preferences is vital for businesses to remain competitive. As consumers hold significant influence, companies must continually innovate and stay attuned to their evolving needs and desires. This study aims to investigate consumer attitudes and behaviors towards Lakme cosmetics products in Chennai,

Focusing on:

- Identifying consumer demographics and preferences.
- Understanding how consumers interact with and use Lakme products.

- Determining where and when consumers purchase Lakme products.
- Uncovering the motivations behind consumers' choices of Lakme over other brands.
- Assessing consumer satisfaction levels with Lakme products.

By examining these factors, this research seeks to gain valuable insights into consumer behavior and perception towards Lakme cosmetics products, including the impact of marketing variables such as pricing and product features. The ultimate goal is to understand how Lakme can better meet consumer needs and preferences in the Chennai market, driving business growth and success.

### Review of Literature

A review of existing research reveals valuable insights into consumer behavior and perception towards cosmetics products, particularly Lakme. **Kumar et al. (2018)** conducted a study on consumer behavior towards cosmetics products in India, highlighting the significance of factors such as brand awareness, product quality, and pricing in influencing purchasing decisions.

**Singh et al. (2020)** explored consumer perception towards Lakme products, discovering that consumers associate Lakme with high-quality, innovative products and strong brand equity. Furthermore, Gupta et al. (2019) investigated the impact of social media on consumer behavior towards cosmetics products, finding that social media platforms significantly influence consumer preference and purchasing decisions.

Theoretical frameworks by **Kotler et al. (2017)** emphasize the importance of understanding consumer behavior and preferences in developing effective marketing strategies.

Research by **Schiffman et al. (2018)** provides valuable insights into consumer perception and behavior towards cosmetics products, underscoring the role of consumer demographics, psychographics, lifestyle in shaping preference.

This review highlights the need for further research into consumer behavior and perception towards Lakme products, particularly in the context of the Chennai market.

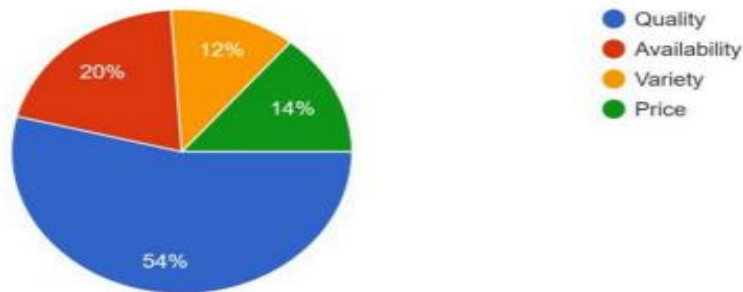
## Data Analytics and Interpretation

**Table 1:** What do you think is the main reason for your use of Lakme products?

Response	Frequency	Percentage
Quality	25	54%
Availability	10	20%
Variety	7	14%
Price	8	12%

[Source: Primary Data]

What do you think is the Main reason for your use of Lakme Products  
50 responses



**Interpretation:** The pie chart illustrates the main reasons why respondents use Lakme products, with 56 responses in total. Here's an interpretation of the data:

1. **Quality (57.1%):** The majority of respondents (57.1%) consider the quality of Lakme products as the main reason for their use. This indicates that product performance and satisfaction are key factors for most customers.
2. **Price (17.9%):** For about 17.9% of respondents, price is the most important factor. This shows that affordability is a significant consideration, but not as important as quality for most users.
3. **Variety (14.3%):** Approximately 14.3% of respondents chose variety as their main reason. This suggests that the range of products offered by Lakme appeals to a subset of users who value having multiple options.
4. **Availability (10.7%):** A smaller portion, 10.7%, of respondents use Lakme products primarily due to their availability. This could mean that access to Lakme products in stores or online is convenient for them, though it's a less prominent factor compared to quality and price.

Overall, product quality stands out as the most influential reason for the use of Lakme products, followed by price, variety, and availability in descending order.

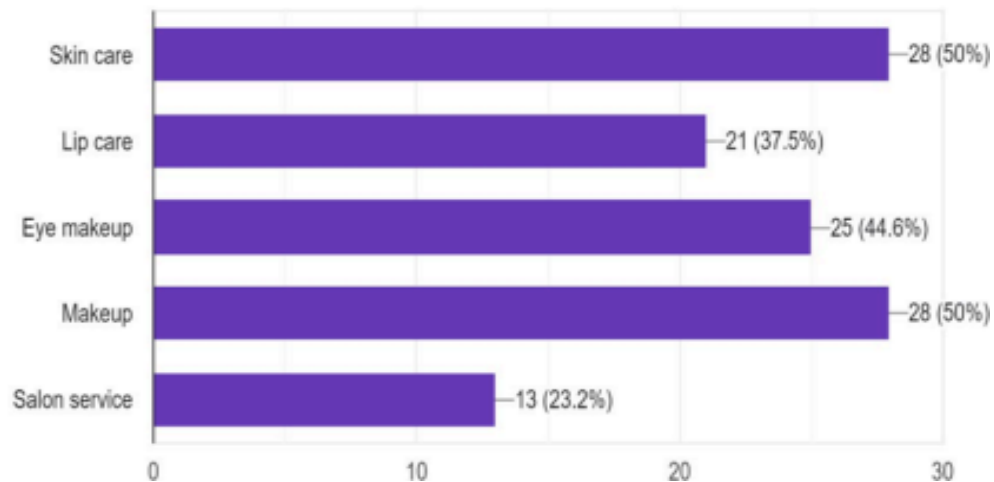
**Table 2:** which of the following products of Lakme have you been using

Response	Frequency	Percentage
skin care	28	50%
Lip care	21	37.50%
Eye makeup	25	44.60%
Makeup	28	50%
Salon service	13	23.20%

[Source: Primary Data]

Which of the Following Products of Lakme have you been Using

56 responses



**Interpretation:** The bar chart shows responses from 56 participants regarding which Lakme products they have been using. Here's an interpretation of the data:

1. Skin care: 28 respondents (50%) have been using skincare products, which indicates that half of the participants rely on Lakme for their skincare needs.
2. Lip care: 21 respondents (37.5%) use lip care products, suggesting that slightly over a

third of the participants consider these items essential in their routine.

3. Eye makeup: 25 respondents (44.6%) use Lakme’s eye makeup products, showing that nearly half of the participants use these items.
4. Makeup (general): 28 respondents (50%) use makeup products, which ties with skincare as the most popular category among participants.
5. Salon service: 13 respondents (23.2%) use Lakme’s salon services, making this the least used category.

In summary, skincare and makeup products are the most commonly used by half of the respondents, while salon services are the least popular. Lip care and eye makeup have moderate usage levels.

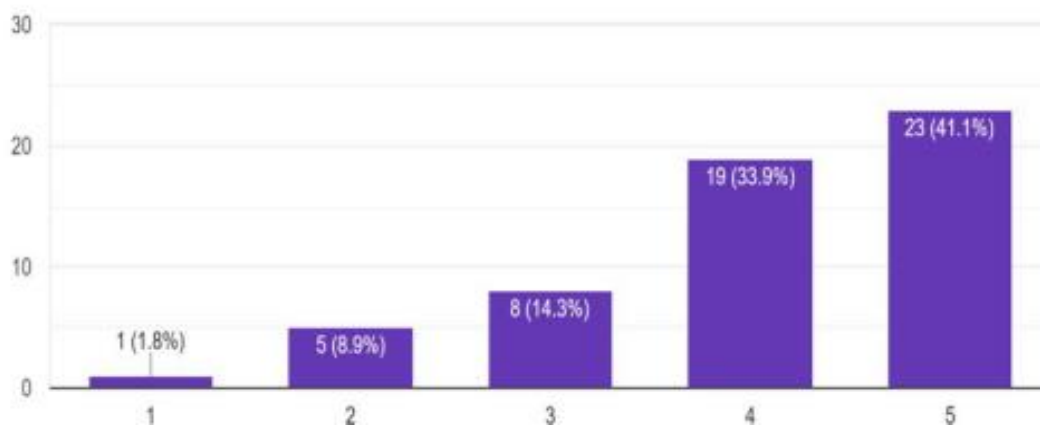
**Table 3:** Are you satisfied with the Lakme products

Response	Frequency	Percentage
Very dissatisfied	1	2%
Dissatisfied	5	9%
Neither satisfied nor dissatisfied	8	14%
Satisfied	19	34%
Very satisfied	23	41.10%

[Source: Primary Data]

Are You Satisfied With The Lakme Products

56 responses



**Interpretation:** The bar chart shows the satisfaction levels of 56 respondents with Lakme products, rated on a scale of 1 to 5, where 1 represents the least satisfaction and 5 represents the highest satisfaction. Here’s the interpretation:

1. Rating 5 (41.1%): 23 respondents, or 41.1%, gave the highest satisfaction rating (5). This indicates that a significant portion of users is very satisfied with Lakme products.
  2. Rating 4 (33.9%): 19 respondents (33.9%) rated their satisfaction as 4, showing that a large number of users are also fairly satisfied but not at the highest level.
  3. Rating 3 (14.3%): 8 respondents (14.3%) gave a neutral satisfaction score (3), indicating that they are neither highly satisfied nor dissatisfied.
  4. Rating 2 (8.9%): 5 respondents (8.9%) rated their satisfaction at 2, showing that a small portion of users are somewhat dissatisfied with the products.
  5. Rating 1 (1.8%): Only 1 respondent (1.8%) gave the lowest satisfaction score, showing minimal dissatisfaction overall.
5. In summary, the majority of users (75%) are either highly or fairly satisfied with Lakme products, while a smaller percentage (10.7%) are less satisfied, and only 1.8% expressed significant dissatisfaction.

**Table 4: Where do you prefer to purchase Lakme products?**

Response	Frequency	Percentage
Lakme store	26	48%
Department store	18	32%
Lakme website	4	7%
Other beauty product website	8	14%

[Source: Primary Data]

Where do you Prefer to Purchase Lakme Products ?  
56 responses



**Interpretation:** The image shows a pie chart that represents the preferences of 56 respondents regarding where they prefer to purchase Lakme products. Here's the breakdown:

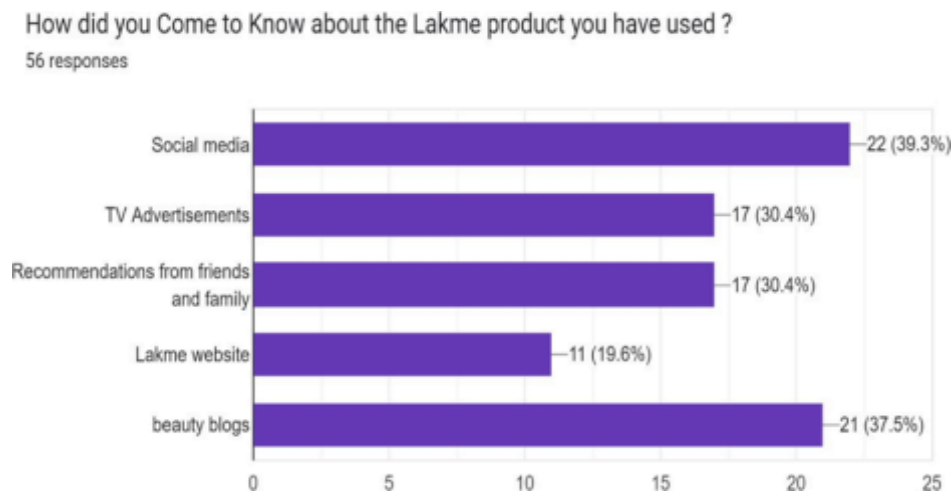
1. Lakme store (blue): 46.4% of respondents prefer buying from a Lakme store.
2. Department store (red): 32.1% of respondents prefer purchasing from a department store.
3. Lakme website (yellow): 7.1% of respondents prefer purchasing from the Lakme website.
4. Other beauty product websites (green): 14.3% of respondents prefer using other beauty product websites.

In summary, the majority of people prefer purchasing Lakme products from Lakme stores, followed by department stores, while fewer opt for the Lakme website or other beauty websites.

**Table 5:** How did you come to know about the Lakme product you have used?

Response	Frequency	Percentage
Social media	22	39.30%
Beauty blogs	21	37.50%
TV advertisements	17	30.40%
Recommended	17	30.40%
Lakme website	11	19.60%

[Source: Primary Data]



**Interpretation:** The image shows a bar chart detailing how 56 respondents came to know about the Lakme product they have used. Here's the breakdown of responses:

1. Social media: 22 respondents (39.3%) learned about the Lakme product through social media.
2. TV Advertisements: 17 respondents (30.4%) found out about the product through TV advertisements.
3. Recommendations: 17 respondents (30.4%) were informed via recommendations.
4. Lakme website: 11 respondents (19.6%) came across the product through the Lakme website.
5. Beauty blogs: 21 respondents (37.5%) discovered the product via beauty blogs.

In summary, the highest number of respondents learned about Lakme products through social media, followed by beauty blogs and TV advertisements, with recommendations also playing a significant role. The Lakme website had the lowest percentage of respondents.

## Research Methodology

Research methodology is a vital part of any investigation, enabling researchers to examine problems in a structured, organized, and meaningful way. This study follows a descriptive and analytical approach and is based on secondary data sources.

**Primary Data:** The primary data was collected primarily through a questionnaire that was distributed to participants.

**Secondary Data:** Secondary data refers to information that has already been collected from sources such as newspapers, relevant journals, and the internet.

**Research Design:** Research design refers to the careful planning of the overall approach a researcher takes in conducting a study. It outlines the framework and structure that guides the research process, ensuring that the investigation is systematic and organized. In this study, a descriptive and analytical research design was employed. Descriptive research allows for a detailed observation of the subject without influencing it, while analytical research focuses on interpreting the data to understand underlying patterns, trends, and relationships. The data for this study was primarily obtained from the company's annual reports, providing a reliable and comprehensive source of information. This data was then analyzed using various statistical tools to ensure accuracy and precision in the findings. By employing these methods, the research aims



to provide meaningful insights and a deeper understanding of the subject under investigation.

### Sampling size

Total of 50 samples were selected using a convenience sampling technique, allowing for the easy selection of participants based on their availability and willingness to participate. The aim was to ensure a diverse and representative sample that accurately reflects the overall population. To achieve this, respondents were chosen from different demographic groups, including private employees, government employees, students, business owners, and homemakers. This approach was designed to capture a wide range of perspectives and experiences relevant to the research topic. Additionally, special attention was given to selecting respondents from various locations across Chennai city to ensure geographic diversity within the sample. By incorporating participants from different professional backgrounds and residential areas, the study aims to provide a comprehensive understanding of the population under investigation.

### Limitations of the Study

1. **Sample Size:** The number of participants is restricted to 50 due to constraints related to time and resources, which may not adequately reflect the full diversity of the population.
2. **Sampling Method:** The use of convenience sampling presents its own limitations, as it does not guarantee a random or representative sample, potentially impacting the accuracy of the results.
3. **Response Bias:** There is a possibility of biased responses from participants, which could affect the reliability of the data and limit the broader applicability of the study's conclusions.
4. **Geographic Scope:** The study focuses only on respondents from Chennai city, meaning the results may not be relevant or applicable to populations in other regions.
5. **Generalizability:** Given the constraints in sample size, sampling method, and geographic focus, the findings of this study cannot be generalized to a wider population or applied to other contexts.

## Finding of the study

### Gender

The majority of respondents (82.1%) identify as female, while 17.9% identify as male.

### Age Group

- The largest age group represented in the survey is 18-25 accounting for 60.7% of respondents.
- The second largest age group is 26-35 with 26.8% of respondents falling into this category.
- Smaller percentages belong to the 36-45 (10.7%) and 46 and above (1.8%) age groups.

### Main Reason for Lakme Product Use

- The most common reason for using Lakme products, as reported by 57.1% of respondents, is quality.
- Price is the second most cited reason, with 14.3% of respondents selecting it.
- Availability and variety are less frequently mentioned, each accounting for 10.17% and 10.7% of responses, respectively.
- That Lakme products are primarily popular among women and individuals aged 18-25. Quality is the primary factor driving their use, followed by price.

### Analysis of Lakme Product Usage and Satisfaction

#### Product Usage:

**Skin Care Products:** 50% of respondents (28 out of 56) reported using Lakme skin care products.

**Lip Care Products:** 37.5% of respondents (21 out of 56) mentioned using Lakme lip care products.

**Eye Makeup:** 44.6% of respondents (25 out of 56) indicated they use Lakme eye makeup products.

**Makeup Products:** 50% of respondents (28 out of 56) reported using general Lakme makeup products.

**Salon Services:** Only 23.2% of respondents (13 out of 56) use Lakme's salon services. This shows that Lakme's core product categories (skincare and makeup) are highly favored, whereas salon services might require more promotion or visibility to increase usage.

Findings on Lakme Product Satisfaction and Purchase Preferences

### Product Satisfaction

- The majority of respondents (41.1%) are satisfied with Lakme products, indicating a positive overall perception.
- A smaller percentage (33.9%) are somewhat satisfied with the products.
- Only a few respondents expressed neutral (14.3%) or dissatisfied (1.8%) sentiments.

### Purchase Preferences

- Lakme stores are the most preferred channel for purchasing Lakme products, with 46.4% of respondents choosing this option.
- Department stores are a less popular choice, with 32.1% of respondents selecting them.
- Online platforms, such as Lakme's website and other beauty product websites, account for 14.3% and 7.1% of purchases, respectively.

Lakme products generally receive positive satisfaction ratings from consumers. The majority of customers prefer to purchase Lakme products from physical stores, with Lakme stores being the most popular choice.

### Findings on Lakme Product Awareness Awareness Channels

- Social media is the most common way respondents learned about Lakme products, with 39.3% citing it as their primary source.
- TV advertisements and recommendations from friends and family are the next most popular channels, each accounting for 30.4% of respondents.
- A smaller percentage (19.0%) discovered Lakme products through the brand's website.
- Beauty blogs are another significant source of awareness, with 37.5% of respondents mentioning them.

## Conclusion

This study reveals that Lakme products are popular among women aged 18-25, who prioritize quality. Skincare and makeup are favored, while salon services need promotion. Customers are satisfied, preferring physical stores, especially Lakme stores. Social media and TV Advertisements drive awareness. These insights can inform Lakme's strategies to enhance customer engagement, product development, and marketing efforts. By leveraging these findings, Lakme can strengthen its market position, drive growth, and foster customer loyalty. The study provides a comprehensive understanding of Lakme's customer preferences, usage patterns, and satisfaction levels, enabling data-driven decision-making.

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# Evaluating Farmers' Satisfaction: The Role of Land Ownership and Produce Sales through ACWM

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## Abstract

Agriculture is different from industry and plays a significant role in the economic development of a nation. Agriculture is a vital activity that supports the survival of the human race by providing the required nutrition and minerals through the food grains. Planning Commission's 'India Vision-2020' represents the pre-estimates that the employment in agriculture will cut down to 40% from the present level of 56% during the coming next two decades. While considering the other States in India, the impact of such a gradual decline affects Kerala the more, being an agrarian state. The statistical reports about Kerala also supported the statement, by revealing a declining drift towards agricultural activities. As a result of such a decline in the agricultural production, even the traders within the state need to gather poisoned agri products from the nearby states. The significance of the wholesale market is reflected in various activities related to the distribution and sale of agricultural products. ACWM is one of the latest updates from various agencies sponsored by the Government of Kerala. The present study was undertaken with a view to evaluate the level of satisfaction of beneficiary farmers towards various services offered by ACWM based on their ownership of land and produce sold through ACWM. For that 151 sample respondents were selected for the collection of data. For this purpose proportionate random sampling method has been adopted in order to select the respondents. Independent -Sample t-Test and One-Way ANOVA were used for evaluating the satisfaction level of beneficiary farmers. The present study disclosed that the satisfaction level of beneficiary farmers about ACWM services based on their ownership in land and farmers satisfaction in terms of percentage of produce sold through ACWM finds to be significant.

*Keywords:* Agricultural Commodity Wholesale Market, Farmers, Market Authority, Market Area, Market Region, Agricultural Produce

## Introduction

India is an agricultural economy and more than 50 per cent of its people depend on agriculture and subsistence activities for agriculture. Agricultural Commodity Wholesale Market is one of

the latest updates from various agencies sponsored by the Government of Kerala. Another important aspect of the history of agricultural marketing in the state of Kerala is the establishment of six Agricultural Commodity Wholesale Markets (ACWMs) by the Government of Kerala to address the marketing problems facing farmers. These markets were established under the Kerala Agricultural Markets Project (KAMP) to support farmers in marketing their agricultural products through straightforward platforms without interference from intermediaries. Of the six ACWMs, three are located in cities, and the rest of the three markets are located in rural areas. ACWM urban centers are located in Anayara in Thiruvananthapuram, Maradu in Ernakulam, and Vengiri in Kozhikode districts. Rural markets operate in Nedumangad (Thiruvananthapuram), Muvattupuzha (Ernakulam), and Sultan Bathery (Wayanad). The present study is limited to farmers satisfaction in terms of their ownership in land and produce sale through ACWM in Thiruvananthapuram district in the state of Kerala concerning its effectiveness from the perspective of its direct beneficiary namely the farmers.

## Review of Literature

**Giri, A. 2023<sup>1</sup>** in his study delves into the intricate challenges and dynamics characterizing the wholesale vegetable markets in Kathmandu Valley, Nepal. It sheds light on the pervasive issues confronting local producers, ranging from the absence of robust market structures to the frequent price fluctuations that erode profit margins. The study underscores the profound influence of intermediaries, hindering farmers from reaping expected profits while driving up distribution costs, ultimately impacting consumers. It emphasizes that Nepal's agricultural landscape is predominantly rooted in subsistence farming, hampered by inadequate infrastructure and a lack of support for modernization and supply chain development. Inadequate market access and the absence of storage and processing facilities contribute to significant post-harvest losses, exacerbating the challenges faced by farmers. The study also highlights the substantial profit margins enjoyed by middlemen and the competitive pressures imposed by Indian vegetable imports. In response to these multifaceted challenges, the research aims to discern strategies to enhance market conditions and bolster local farmers. However, the study acknowledges certain limitations, including its exclusive focus on wholesale markets within Kathmandu Valley and potential data gaps stemming from inadequate record-keeping. Nonetheless, it offers invaluable insights into the complexities of Nepal's vegetable supply chain, providing actionable recommendations to improve market efficiency, reduce losses, and

ensure equitable profits for domestic producers, ultimately fostering the growth of the agricultural sector in the region.

According to **Ec & Kp (2021)<sup>2</sup>**, Kerala is one of the leading agricultural provinces in the country and is also one of the major producers of rubber, coconut, pepper and coir. The geography of the world extends beyond the Western Ghats, is patented by biodiversity and is known as 'Biodiversity Paradise'.

**Babu (2020)<sup>3</sup>** explored the challenges facing organic farming and marketing in India. This study aims to study the problems of marketing organic products, the challenges of organic vegetable farming and to develop appropriate strategies to promote organic farming in Kerala in India. The study found that farmers face a wide range of seed problems, lack of agricultural inputs, rising labour costs, low mechanical interventions, weather, lack of certificates and no funding for organic products. After understanding all the challenges, the study proposed the EVM Model.

**Deepak Varshney (2020)<sup>4</sup>** analyzed the effect on wholesale prices and quantities exchanged in agricultural markets of the spread of COVID-19 and the lockdown. They compared the effects between non-perishable (wheat) and perishable (tomato and onion) goods. By using a granular data set consisting of 3 months of daily observations from approximately 1000 markets across five states.

**Maurya et.al (2019)<sup>5</sup>** argued that the best way to get to the doorsteps of horticulture and vegetable farmers could be the market-led extension strategy. Any initiative to improve rural areas places great focus on the concept of empowerment. To improve the quality of life of the Indian population, they need to empower both at the personal and social level and market-led extension initiatives undertaken by the public and private extension approach to empower rural citizens. Framers should be sensitized to aspects of manufacturing, such as what to manufacture, how much to produce, what to produce, when and where to sell.

### Significance of the Study

Agriculture is the only way of life for more than half of the working class in India. However, in recent years the people of Kerala have shown reluctance to engage in agricultural activities due to rising labour costs, fertilizer and lack of adequate technical services, etc. to meet their modern needs for use. Marketing agricultural products became one of the major

problems near natural disasters. Farmers need to rely on the big local markets to sell their large quantity of naturally perishable products. Most farmers need to travel long distances to reach local markets by incurring high travel costs. They could also afford to pay the price if they could sell their product at a reasonable price. But mediators' interventions in local markets exploit farmers by charging additional costs such as commissions, viewing salaries, and more. Since 1999, ACWMs have been working under the support of the government to overcome the marketing problems of farmers. Given the importance of agricultural marketing, it is appropriate to review the role of ACWM and to evaluate the performance of these markets in line with their proven objectives. It is hoped that the results of the research work will be useful to policy makers, market authorities, and market shareholders.

### **Scope of the Study**

The scope of the present study is limited to the marketing of agricultural produce of ACWMs running in both urban and rural market regions in Thiruvananthapuram district in the state of Kerala concerning its effectiveness from the perspective of its direct beneficiary namely the farmers. The research endeavours to conduct a market region-wise analysis of the performance of the farmers. The assessment of satisfaction of the beneficiary farmers towards several services and abilities of the ACWMs comes under the purview of the present work.

### **Statement of the Problem**

In the state of Kerala, the government recently took many steps to overcome agricultural issues. However, the current report shows that farmers are still not free from the problems in the market for their agricultural produce. The government of Kerala has established ACWMs to overwhelm the marketing problems of farmers in the province and to inspire direct marketing by farmers and avoid misuse by the middle class. These markets have been working in the state with a sequence of initiatives and activities to support the farmers in the state. Now we have moved from unorganized to organized sector. The farmers are still not entirely free from the previous dilemma. At this juncture, an investigation on the marketing concerns confronted by farmers in dealing with agricultural produce in Kerala becomes very significant and useful. So far no effort has been made to conduct a comprehensive and complete study to estimate the marketing of agricultural produce in terms of the effectiveness of ACWMs by covering all of its nook and corners. Thus, at this juncture, the current study helps to appraise the satisfaction level of farmers for numerous services undertaken by ACWM with respect to their ownership in land and percentage of produce sold through ACWM.



### Research Question

Therefore, the present research efforts to examine the following major issues:

- ❖ How satisfied are the beneficiary farmers with the numerous services offered by ACWM?

### Objective of the Study

- ❖ To evaluate the level of satisfaction of beneficiary farmers towards various services offered by ACWM

### Hypotheses

The subsequent hypotheses based on the objectives of the study are:

- ❖ H0: There is no significant difference between the lease land and own land farmers with respect to their level of satisfaction about ACWMs services.
- ❖ H0: Farmers level of satisfaction does not vary based on the amount of goods sold through ACWMs.

### Variables

The detailed list of dependent and independent variables are quoted in Table 1

**Table 1 List of Dependent and Independent Variables**

Dependent Variable	Independent Variable
Farmers Satisfaction	Transport subsidy Grading system Auction procedure Co-operation of market officials and staff Reduction of wastage

### Methodology

Research methodology is a way to thoroughly show the research problem. It may be agreed as a science of studying how research is done systematically. The research methodology adopted for the study is given below.

### Research Design

In this research, both descriptive and analytical design in the form of a survey method based on both primary and secondary data are used to carry out the research work.

## Research Approach

In this study survey method is used as a research approach. Throughout the research work researcher, herself accumulates data from respondents by using an interview schedule.

## Research Instrument

The instrument used for this study is an interview schedule. It was organized in a sequence. It was kept crisp as possible to make it easier for the respondents to answer. The schedule comprises close-ended questions and Likert scale questions.

## Sample Design

In the state of Kerala currently, six Agricultural Commodity Wholesale Markets are working under Kerala Agricultural Markets Projects (KAMP) for the enlargement of agricultural markets in the state. Among the six markets, three of them are located in the urban region, and the rest of the three are positioned in the rural regions. The present study was conceded out among beneficiary farmers functioning in both urban and rural market regions in Thiruvananthapuram. The method for selecting the sample size and other details of the sample is given below:

## Population

The population considered for the study is registered farmers of ACWMs in Thiruvananthapuram. There are 250 farmers registered with ACWM as on 30<sup>th</sup> June 2024.

## Sample Unit

Beneficiary farmers who are registered in both urban and rural market regions of ACWM in Thiruvananthapuram are the sample units intended for the study.

## Sample Size

The sample size for the study is 151 beneficiary farmers who are listed with urban and rural ACWMs regions in Thiruvananthapuram.

## Sampling Procedure

Population of the beneficiary farmers who are registered in ACWM is finite in nature. The sample size of the beneficiary farmers will be obtained by using the sample calculation formula. Sample covers 60.4 per cent (ie.151/250) of the total population. Samples from each market in urban and rural regions are selected by using proportionate random sampling technique. The details of population of beneficiary farmers in each market region and the sample size selected are revealed in **Table 2**

**Table 2 Selection of Sample Beneficiary Farmers in ACWMs**

Market	Population	Proportion	Sample Selected
Anayara	153	.612	92
Nedumangad	97	.388	59
Total	250		151

Source: Primary Data

### Method of Data Collection

Data has been collected in two ways. They are;

**Primary Data:** The primary data were collected from registered farmers of the selected area, by using a structured, self-administered interview schedule.

**Secondary Data:** Secondary data will be used to create a theoretical background in the area of ACWM. The data are grouped from various sources such as annual reports and other records of ACWMs, data offered on the internet through websites, monthly progress reports of ACWMs, periodicals, journals, and magazines, etc.

### Tools and Techniques of Analysis

A structured interview schedule is used for collecting the required data from the respondents. For data analysis; IBM Statistics 25.0 has been used. Parametric tests are used for analysis as the data is normal. Inferential statistics is carried out using Independent-Sample t-Test, One-Way ANOVA

### Analysis and Interpretations

Nature of Ownership

**Table 3** deals with nature of ownership in land wise classification of farmers.

**Table 3 Nature of Ownership**

Variables		Market Region				Total	
		Urban		Rural			
		No	%	No	%	No	%
Nature of Ownership	Lease Land	87	94.6	0	0.0	87	57.6
	Own Land	5	5.4	59	100.0	64	42.4
<b>Total</b>		<b>92</b>	<b>100.0</b>	<b>59</b>	<b>100.0</b>	<b>151</b>	<b>100.0</b>

Source: Primary Data

**Table 3** depicts that majority of the respondents have lease land for purpose of agricultural produce (57.6 per cent) and rest of them have own land. In case of market region wise analysis most of the farmers in urban market region have occupied lease land for their production (94.6percent). But in case of rural market region 100 per centrespondents use lease land for their production purpose.

### Produce Sold Through ACWM

The details of the percentage of agricultural produce which is sold through ACWM is mentioned in the below **Table 4**

**Table 4 Produce Sold Through ACWM**

Variables		Market Region				Total	
		Urban		Rural			
		No	%	No	%	No	%
Sold Through ACWM	Less than 40%	58	63.0	0	0.0	58	38.4
	40-70%	34	37.0	14	23.7	48	31.8
	Above 70%	0	0.0	45	76.3	45	29.8
<b>Total</b>		<b>92</b>	<b>100.0</b>	<b>59</b>	<b>100.0</b>	<b>151</b>	<b>100.0</b>

*Source: Primary Data*

**Table 4** clearly depicts that major portion of beneficiaries sold less than 40 per cent of their produce via ACWM. Market region wise analysis reveals that (63 per cent) of urban farmers sold less than 40 percent of their produce through ACWM while (76.3 per cent) of rural farmers sold above 70 percent of their produce through ACWM.

### Satisfaction Level of Beneficiary Farmers

In this section the satisfaction level of farmers are analysed on the basis of five factors; “Transport subsidy”, “Grading system”, “Auction procedure”, “Co-operation of market officials and staff” and “Reduction of wastage” which is measured in five point scale (5-Highly Satisfied, 4- Satisfied, 3- Neutral, 2- Dissatisfied, 1-Highly Dissatisfied).

### Farmers Satisfaction Level Based on their Land Ownership

Independent-Sample t-Test is used to test the statistical significant difference in the mean score obtained for the variables supporting the satisfaction level of farmers about

ACWM services based on their ownership in land.

The hypotheses used are:

**H<sub>0</sub>:** There is no significant difference between the ownership of lease land and own land farmers with respect to their level of satisfaction about ACWMs services.

**H<sub>1</sub>:** There is significant difference between the ownership of lease land and own land farmers with respect to their level of satisfaction about ACWMs services.

The results obtained from the test is presented in **Table 5**

**Table 5** shows the opinion of lease land and own land farmers about the level of satisfaction based on t-test revealed that there is statistically significant difference among mean scores obtained about satisfaction of various ACWMs services.

In case of the factors associating farmer's satisfaction; "Transport subsidy", "Grading system", "Auction procedure", "Co-operation of market officials and staff" and "Reduction of wastage", as per the result t value is found to be significant since, p value is below 0.05 ( $p < 0.05$ ) at 5percent level of significance. So, the null hypothesis is got rejected. Therefore, the above factors point out that there is statistically significant difference between lease and own land farmers with respect to their level of satisfaction about various services offered by ACWMs.

**Table 5 Level of Satisfaction about ACWMs Services Based on Land Ownership**

Variable	Nature of Ownership in Land				t-value	p-value
	Lease Land		Own Land			
	Mean	SD	Mean	SD		
Transport subsidy	4.780	0.416	3.110	0.978	14.305	<0.05**
Grading system	4.520	0.503	2.780	0.951	14.508	<0.05**
Auction procedure	4.660	0.478	2.520	1.182	15.286	<0.05**
Co-operation of market officials and staff	4.550	0.500	2.670	1.183	13.308	<0.05**
Reduction of wastage	4.540	0.501	2.440	0.906	18.197	<0.05**
<b>Overall Satisfaction about ACWMs Services</b>	<b>23.046</b>	<b>2.172</b>	<b>13.516</b>	<b>4.986</b>	<b>15.909</b>	<b>&lt;0.05**</b>

Source: Primary data

While analysing the factors supporting “overall level of satisfaction about ACWMs services” based on their nature of ownership in land revealed that most of the respondents falls under the category lease land as they have higher mean score and rest of them with lowest mean score comes under the category owned land. The overall satisfaction level of farmers also finds significant difference between natures of ownership in land.

### **Produce Sold through ACWM with Respect to Farmers Level of Satisfaction**

One-Way ANOVA is used to determine whether there are any statistically significant differences between the means of two or more independent groups. The one-way analysis of variance (ANOVA) is used here to determine whether there exists any significant difference among percentage of produce sold through ACWM with regard to farmer’s satisfaction level about various services offered by ACWMs. The opinion of farmers’ registered with ACWMs are the basis of analysis.

So, following is the set of hypothesis used:

**H<sub>0</sub>:** Farmers level of satisfaction does not vary based on the amount of goods sold through ACWMs.

**H<sub>1</sub>:** Farmers levels of satisfaction do vary based on the amount of goods sold through ACWMs.

The results obtained from the test is presented in **Table 6**

**Table 6** examines whether there is statistically significant difference among mean scores obtained for percentage of produce sold through ACWM with respect to farmer’s level of satisfaction about ACWMs services. One-Way ANNOVA is used to test whether there is any significant difference between farmers satisfaction in terms of percentage of produce sold through ACWMs.

From among the variables supporting farmers satisfaction “Transport subsidy”, “Grading system”, “Auction procedure”, “Co-operation of market officials and staff” and “Reduction of wastage”. Statistically significant difference was noticed, as the p value is less than 0.05 ( $p < 0.05$ ) at 5 per cent level of significance. So, the null hypothesis got rejected. This result depicts that there is statistically significant difference among percentage of produce sold through ACWM with respect to farmer’s satisfaction level. The analysis finds a significant difference between percent of produce sold through ACWMs with regard to overall satisfaction

of services. (i.e.  $<0.05$ ). Here most of the respondents falls under the group “less than 40 %” as they obtained highest mean score.

**Table 6 Farmer’s Level of Satisfaction about ACWMs Services Based on Produce Sold through ACWM**

Variable	Percentage of Produce Sold Through ACWM						F-value	p-value
	Less than 40%		40%-70%		Above 70%			
	Mean	SD	Mean	SD	Mean	SD		
Transport subsidy	5.000	0.000	4.210	0.410	2.730	0.939	208.270	$<0.05^{**}$
Grading system	4.780	0.421	3.920	0.279	2.360	0.773	276.547	$<0.05^{**}$
Auction procedure	4.980	0.131	3.980	0.144	1.910	0.848	534.704	$<0.05^{**}$
Co-operation of market officials and staff	4.830	0.381	4.000	0.000	2.110	0.959	290.429	$<0.05^{**}$
Reduction of wastage	4.810	0.395	3.730	0.449	2.070	0.780	313.083	$<0.05^{**}$
<b>Overall Satisfaction about ACWMs Services</b>	<b>24.397</b>	<b>1.199</b>	<b>19.833</b>	<b>0.907</b>	<b>11.178</b>	<b>4.058</b>	<b>391.912</b>	<b><math>&lt;0.05^{**}</math></b>

Source: Primary Data

## Findings

The major findings emerged out of the study are:

- ❖ As far as area of land used by the farmers in urban and rural market, majority of the urban farmers use less than 1.5 acres for their agricultural produce, whereas, above 4.00 acres was occupied by the farmers in rural market for their cultivation.

- ❖ While considering the percentage of produce sold by farmers in both urban and rural market regions, majority of the farmers in urban market contribute less than 40 per cent of their produce sold via ACWM. Similarly, above 70 per cent of the produce were sold by farmers in rural market region.
- ❖ It has been found out that, there is statistically significant difference in farmers' satisfaction level based on their ownership in land.
- ❖ There is significant difference among per cent of produce sold through ACWM with regard to farmers' level of satisfaction.

## Conclusion

ACWM is one of the latest updates from various agencies sponsored by the Government of Kerala. The history of agricultural marketing in the state of Kerala is the establishment of six Agricultural Commodity Wholesale Market (ACWMs) by the Government of Kerala to address the marketing problems fronting farmers. These markets were recognized under the Kerala Agricultural Markets Project (KAMP) with the aim of supportive farmers in marketing their agricultural products on specific platforms deprived of interference from mediators. This paper analyzed farmers satisfaction level in both market regions are different in terms of the service offered by ACWMs. The satisfaction level of farmers are analysed on the basis of five factors; "Transport subsidy", "Grading system", "Auction procedure", "Co-operation of market officials and staff" and "Reduction of wastage". Percentage, Independent -Sample t-Test and One-Way ANOVA are used for evaluating the satisfaction level of beneficiary farmers. The overall satisfaction about various services offered also finds significant difference between nature of ownership in land. The overall satisfaction about various services offered finds significant difference between market regions in which produce sold through ACWM. The farmers in urban market region are highly satisfied as compared with farmers in rural market area.

## Suggestions

Based on the above findings and conclusion of the study, the following are the suggestions presented for improving the current situation.

- ❖ ACWMs in Kerala are basically established with a motto to assist the traders and farmers. For the reason it is very essential for them to provide both general and



additional facilities to the beneficiaries for their enhancement. The markets have to utilize their market fund for such purposes. If the market fund is found insufficient, Government by creating provisions in the budget can allocate necessary funds for such schemes.

- ❖ Market authorities have to take up initiatives to implement modernized auction facilities as well as improved by way of exhibiting the produce.
- ❖ ACWMs in urban and rural market regions must be cautious enough to manage and settle the dispute that arises between the HORTICORP staff and farmers.
- ❖ Market authority can insist the vegetables traders within the market authority to participate during the auctions and induces them to purchase the organic produces rather than purchasing the poisonous vegetable produces arriving from other states.
- ❖ Even though markets in ACWM is in a better position in handling more quantities of produce, participation of HORTICORP could make the market as an outstanding one based on performance. Department can take up initiatives to implement sales centers of HORTICORP in markets itself, so that difficulties in respect to transporting of agriculture produce can be avoided.
- ❖ Allowing refrigerated mobile van services to HORTICORP, so that the produces can be brought to markets without much delay and at the same time by maintaining its freshness.

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# Navigating Business Sustainability through Decarbonization: Insights from the Delhi NCR Region

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## Abstract

*Climate change refers to the change in the temperature of the earth over a long period of time. Earth 's climate is changing constantly over the years. It has negative impact on the Earth' atmosphere. The main reason of this is increasing human activities and burning of fossil –fuels like coal, oil and gas etc. This paper will throw a light on how some positive contribution of people or ecological hand printing can contribute towards positive climate change. In this paper primary research is done with the help of questionnaire in which data is collected through convenience sampling. The data interpretation is done through the Bar diagram provided by the Google form. Everything has two aspects in this: Positive contribution of people can save the climate from being adverse and a negative contribution can make its condition to the worse. So, it is necessary for saving our environment and making climate condition positive to encourage the people to make contribution towards the environment. This research paper basically showed that how people are contributing towards positive climate change with small steps in day-to-day life. A carbon footprint is the total amount of greenhouse gases that are generated by our actions. The average carbon foot printing for the person in US is 16 tons, one of the highest rates in the world. Globally the average carbon ton is closer to 4tons. Lowering carbon footprints from 16 tonnes to 2 tonnes will not possible overnight. But small steps by each individual can achieve big milestones. It has become necessary for the sustainable development that each individual has to take a stand for the natural world.*

*Keywords: Climate Change, Ecological hand printing, Carbon Footprint*

## Introduction

### **First: what does the decarbonizing means?**

The process of reducing carbon gases in the atmosphere , mainly the carbon dioxide which has increased mainly due to the burning of fossil fuel , due to which climate is changing to its worst conditions . There are various means by which we can decarbonize the environment like using of renewable sources of energy, A forestation , less use of fossil fuel and by adopting

three Rs ( Reduce, Reuse and Recycle ) etc. India has reduced its emission intensity of GDP by 1.3 % per annum over the last decade, somewhat decoupling the emissions from GDP growth. (UNFCCC, climate action tracker, Mc Kinsey India DSE, EIU.) But this is not enough. It requires new technological advancement in renewable energy resources and also there is a need of much awareness among the people that how they can install solar panel in their houses can use hydroelectricity and can use biogas plant.

Ecological hand printing refers to each and every step which contributes towards the reduction of carbon by individuals like planting the trees, reduce, reuse and recycle. Each and every bit of the positive contribution can make a positive change and can decarbonizing our India. Ecological hand printing can leads to a miraculous change in decarbonizing to our India, but there are various challenges related to decarbonizing the environment like – unawareness of people, lack of technological advancement, lack of finance and proper training to the youth of India. If these problems would be sorted, then it would make a great impact on decarbonizing India.

Keeping in mind the importance of Ecological hand printing this studies aims to know the impact of people's contribution on the climate change. The study was planned with the following aim and objective –

1. The study was based on 106 respondent of the Delhi NCR through questionnaire which was designed to know about the awareness of people towards the environment.
2. The study attempts to critically understand the efforts made by the people towards decarbonizing the environment.

### Methods of Data Collection

**Primary Data:** The study employed questionnaire survey method, a structured form of questionnaire to obtain information and responses of the sampled Population to examine their environmental awareness level, attitudes, concern, and roles towards the environment and environmental protection. A total of 150 questionnaires were administered out of which 106 questionnaires were retrieved. Randomly chosen respondents were chosen from among those who may be located in the various institutions where the replies were gathered. The questionnaire is divided into four sections: biographical information, environmental knowledge and awareness, environmental attitudes, and level of participation.

**Secondary Data:** To enhance the introduction and literature review sections of the

research effort, the study additionally reviewed a variety of pertinent literatures and earlier research projects that were sourced from published and unpublished sources, journals, books, and other sources.

Analytical Techniques of the study's data were analyzed using straightforward descriptive statistical methods. We calculated frequency counts, tables, percentages, and cross tabulation. Pie charts and clustered bar charts were used to portray the results in visual and graphical formats to guarantee adequate illustrations, and they were accompanied by explanations and debates.

## Results and Discussion

The methodologies and processes indicated above were used to organize, analyze, and interpret the survey data that was obtained through the administration of questionnaires in this section. Discussions on the findings and conclusions were drawn. With the exception of the introduction and literature review, the study, however, is entirely based on primary data. However, a total of 150 questionnaires were administered out of which 106 were successfully retrieved. Responses from the respondents were recorded pertaining to bio- data (age group, gender, academic discipline, year of study, etc.), environmental awareness test, attitudes and level of commitment to environmental protection. The level of awareness and participation was ascertained from these responses, which were later scored. The collections of Pie Charts was taken out from the 'Google Form Response Sheet'.

The respondents' age distribution is presented. To guarantee adequate representation, the age groups were divided into 4-year class intervals of 16–20, 21–25, 26–30, and 30-plus. A total of 61 respondents, or 30.5 percent of the total respondents, fell within the 16- to 20-year-old age range. The age group of respondents with the highest number of 75 respondents and a valid percentage of 62.0% is 21–25 years old. This suggests that the respondents' age distribution is concentrated in this age bracket, indicating that the respondents are young, with a total cumulative percent of 92.5% overall. Only 13 respondents with a valid percentage of 6.5% were found in the age range of 26 to 30. This indicates that a small percentage of responders belong to that age group. With only 2 respondents, or 1.0%, the 30-and-over age categories have the fewest respondents. It was impossible to ascertain the age group of two of the total respondents since they chose not to answer the question.

In general, the survey found that a majority of the respondents questioned, or 60% of the

population it was looking at, were between the ages of 18 and 25. This reflects the respondents' young age distribution and their belief in achieving environmental goals. Developments and sustainability are dependent on. The following pie chart shows the overall image as it is represented in pictures:

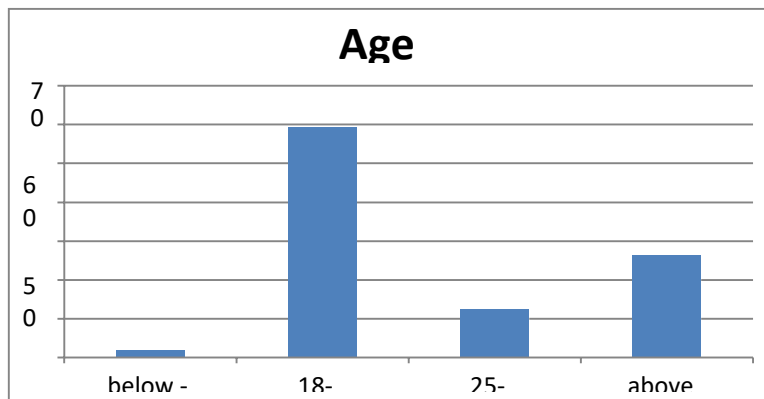


Figure 1: Age Group of the Respondents

The respondents' environmental knowledge was rated on a scale of Low, Medium, and High. But just 4 of the 106 respondents who were questioned fit into the low category of low awareness, with a valid percentage of 4%. A total of 69 respondents, or 71.7%, fit into the medium awareness level category. Out of the 106 respondents overall, 15 had higher levels of environmental awareness, representing a valid percent of 14.2%. Accordingly, the study's data generally showed that the respondents, who made up 14.2% of the sample, had a high level of environmental awareness. The study found that respondents had a moderate level of environmental awareness, as evidenced by the cumulative percentage of those respondents who scored in both the Low and Medium ranges, which was 36.1%.

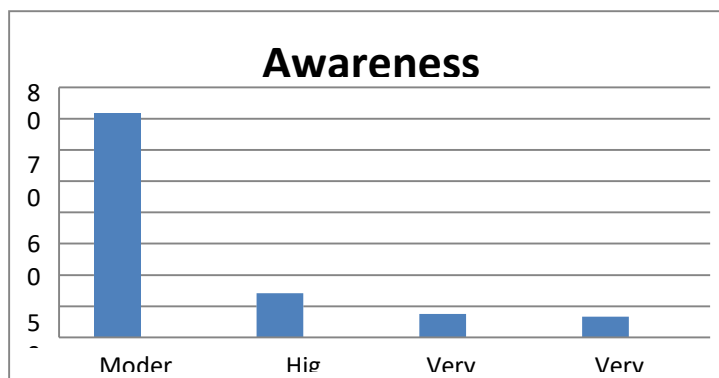


Figure 2: Awareness among Respondents about the environment.

The survey also sought to determine the degree of respondent involvement and participation in the direction of environmental preservation and protection. Direct or indirect involvement in environmental conservation is possible. Respondents that participate directly participate in environmental organizations that carry out environmental actions. Individuals were considered to be indirectly involved in environmental protection when they engaged in actions like planting trees, maintaining public health, disposing of waste materials properly, and recycling, among other things. To evaluate the overall level of participation, the study combined both direct and indirect contributions to environmental preservation.

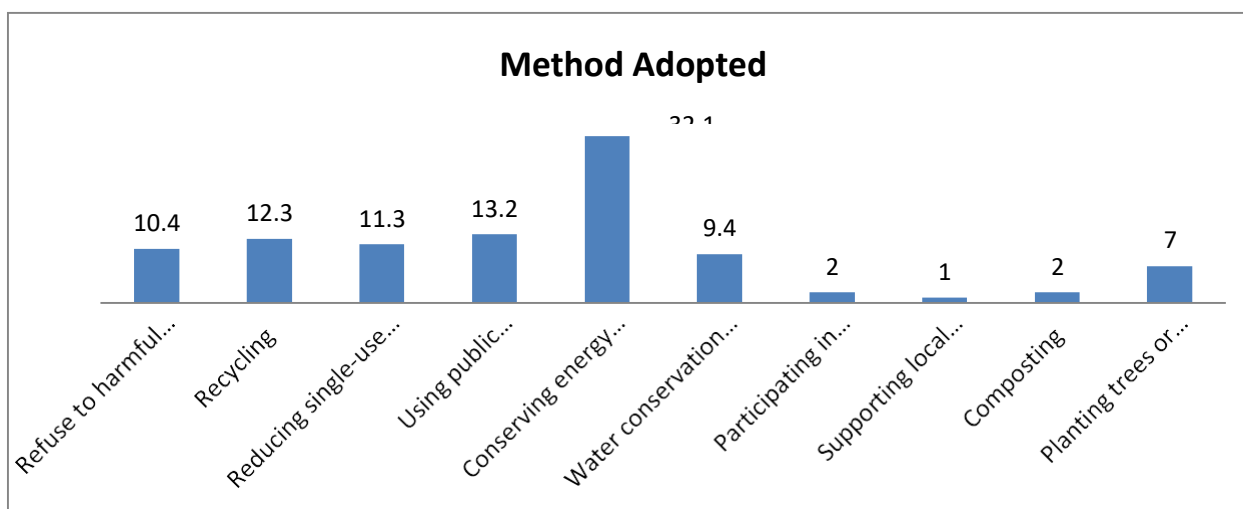


Figure 3: Method adopted by the Respondent towards Ecological hand printing

The respondents' level of environmental protection participation ranged from Low to High. Generally speaking, it shows little interest in protecting the environment. 38 out of 106 responders, or 36% of the total, fall into the low participation category. In a similar vein, 40 responders with 38.5 valid percent were categorized as medium. Consequently, adding both Low and Medium category together. Only 26 respondents—and 25.5%—have high levels of participation in environmental preservation and activities. This suggests that fewer individuals are actively engaged in environmental conservation and preservation, which runs counter to the high degree of environmental awareness demonstrated by the study on the preceding page. However, two respondents out of the total respondents (106), did not react, making it impossible to assess their opinions towards participation.

The study's findings were thus supported by the data, which suggested that environmental awareness may not be the only motivating factor for encouraging active

participation in environmental conservation and activities. There could be a lot more factors. The data were cross-tabulated to determine the degree to which environmental knowledge and respondents' involvement in environmental activities and protection were related in order to arrive at an explanation. Cross-tabulation between respondents' knowledge of environment and participation level reveals that, respondents with low level awareness and low level participation are 3. Similarly, those with low level awareness and participate moderately in environmental activities are 0. And those with low level environmental awareness and fully participate in environmental protection activities is only 1. This numerically reveals that, at low level of environmental knowledge there are very few people participating in environmental protection and conservation activities. The number increases with the increase in environmental knowledge at medium level and low level participation recording 30 persons, 25 and 13 persons in medium and high level participations respectively. So also, at high level awareness, 39 persons were recorded low participation, 52 persons at medium level participation and 37 persons at high level participations.

Thus, collectively, there are 128 respondents ranking high environmental knowledge level at all the three levels of participation, and this indicates a high proportion of people being aware. On the contrary, there is least number of respondents 51 at the high level of participation and awareness than at the totals of low and medium participation levels. This of course indicates low level of respondents' participation in the environmental activities since it recorded the least score.

The study attempted to find out the attitudes and respondents' sense of responsibility towards environment. Since attitudes are sets of values and feelings of concern towards environment and environmental improvement and protection, they may affect ones feeling of responsibility towards the environment. Therefore positive attitudes shape citizens behavior and perceptions towards the responsible actions to environment. Shows respondents attitudes pertaining to different magnitude of concerns on environmental issues and problems.

## Recommendations

It is impossible to overstate the value of the environment in which each of us resides and goes about our everyday lives. The standard of such an environment has a direct or indirect impact on the quality of our lives and wellbeing. Man and the environment are interdependent



in a way that is so obvious it defies doubt. The current environmental degradation and increase in natural catastrophes were mostly attributed to man's greedy actions, which were thought to have made things worse. As a result, this has focused the attention of the international community on achieving sustainable development and a better and higher quality environment. Environmental education and awareness have become crucial tools for encouraging community involvement in environmental conservation and improvement as a means of achieving this goal.

The survey looked at respondents' environmental knowledge, attitudes, and level of involvement in preserving and enhancing the environment. Environmental sustainability is a relatively new idea, and achieving it requires a long-term set of strategic strategies and initiatives. Respondents, particularly those from postsecondary institutions, hold out the promise of future development policies and, by extension, environmentally sound policies and technology required to achieve environmental sustainability.

The study's findings so showed that respondents have high levels of environmental knowledge and favorable views about the environment, but low levels of engagement in activities that promote environmental conservation and improvement. This suggests that merely being aware of environmental issues and difficulties related to such issues does not motivate responders to take an active role in preserving and improving the environment. Consequently, this implies that there may be factors other than having knowledge of the setting that might increase responders' degree of participation. This necessitates further investigation to determine if additional elements are crucial for producing participation of respondents in particular and participation of the greater community in general together, these factors will guarantee the long-term preservation of the environment and the successful achievement of Environmental Education (EE) objectives. On the other hand, universities ought to offer the required venues to promote respondents' involvement in environmental activities through their environmental organizations and clubs, debates, and seminars. This will create respondents' interest in the environment and prompt them to take some responsibility for protecting and enhancing it through clubs and associations, discussions, and lectures.

## **Summary and Conclusion**

The study polled respondents from Delhi/NCR and looked at their level of environmental awareness, attitudes toward the environment, and amount of involvement in environmental

activities. The study's findings showed that 63.9% of the population as a whole demonstrated a considerably larger proportion of respondents who had a high awareness level. On the other hand, the study also showed that despite high levels of environmental education and awareness, only roughly 74% of people participated in environmental activities. In other words, the study's findings suggest that respondents' awareness of their surroundings and environmental expertise may not be the sole factors motivating them to engage in environmental preservation and improvement activities. Though, the study was based on the convenience sampling. The study also showed a direct link between developing positive attitudes and a greater sense of responsibility for the environment and high environmental awareness in order to learn more about what other variables, if any, could motivate respondents to actively participate in environmental preservation and improvement activities, this study has discovered a significant research vacuum that needs to be filled. Given that responders make up an educated segment of the population and are therefore likely to become future leaders and policy makers, this may also apply to the greater community. Therefore, there is the need for an in-depth study in order to find out a result and become certain about what other issue stimulate active participation. This will ensure the success of environmental education program and help in attaining environmental sustainability at the grassroots.

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# A Study on Consumer satisfaction towards Ola and Uber in Chengalpattu district

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## Abstract

*This study investigates consumer satisfaction with Ola and Uber services in Chengalpattu District. With the rise of ride-sharing apps, understanding user experience in different regions is crucial for service providers. The research employs a mixed-method approach, combining quantitative surveys with qualitative interviews to gather comprehensive insights from 50 participants. Key factors analysed include ride reliability, pricing, customer service, and app functionality. Findings reveal that while both Ola and Uber generally meet consumer expectations, Ola receives higher satisfaction scores for its customer support, whereas Uber is preferred low comparatively to Ola. The study highlights regional preferences and identifies areas for improvement, suggesting that service providers should focus on enhancing app features. These insights aim to guide Ola and Uber in refining their services and strategies to better align with consumer needs in Chengalpattu District.*

*Keywords: Ola, Uber, consumer, Chengalpattu*

## Introduction

The ride-hailing industry in India has seen tremendous growth over the past decade, with Ola and Uber emerging as the two leading players. These platforms offer a convenient alternative to traditional taxi services, allowing users to book rides via mobile apps. The success of these platforms largely depends on consumer satisfaction, which influences repeat usage and brand loyalty. This study aims to evaluate consumer satisfaction towards Ola and Uber in the Chengalpattu district of Tamil Nadu.

## Objectives of the Study

1. To assess the overall satisfaction level of consumers using Ola and Uber in Chengalpattu.
2. To compare the satisfaction levels between Ola and Uber users.

3. To identify the factors that influence consumer satisfaction.
4. To understand the challenges faced by consumers while using these services.

### Research Methodology

- Research Design: Descriptive research design is used for this study.
- Sample Size: A sample of 50 respondents was selected from Chengalpattu district.
- Sampling Technique: Convenience sampling was employed to select respondents.
- Data Collection: Primary data was collected using a structured questionnaire. Secondary data was gathered from journals, articles, and company websites.
- Data Analysis: Data was analysed using statistical tools like mean, standard deviation, and chi square t-test, pie chart to draw meaningful conclusions.

### Literature Review

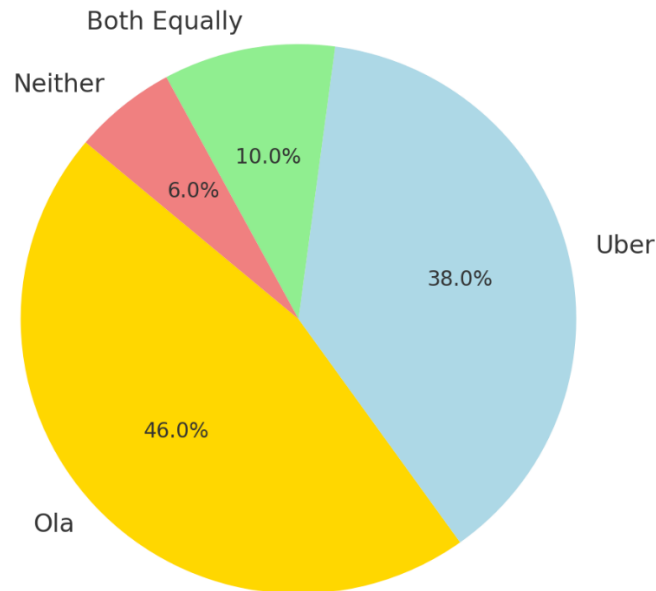
**J. Senthil Velmurugan, R. Shruthi, S. V. Rajkamal (2019)** Smart cities use data and digital technology with the aim of improving quality of life. This study shows the global interference of technological advances in taxi hailing services. Spread of smart cities that can call taxis with smartphones World-wide. Systematically explain the impact of the proliferation of electronic calling applications This research was conducted to analyse the degree of customer recognition and the number of visits to the taxi system. Improving Ola Services. This study focuses on customers and 120 samples. Respondents are collected and analysed for future coverage to maintain validity Service of OLA.

**Mr. Sathish Kumar J AND MRS.TR. Kalai Lakshmi (2021).** This study focuses on determining customer preferences for different taxi services. Chennai. Chennai City has many employees working in different districts, states and countries. Possible by private car. Therefore, taxi services are the cheapest and best option. in order to For research purposes, data and demographic profiles from 140 respondents were collected. Respondents were surveyed considering age group, occupation, gender, skills and goals.

## Data Analysis and Interpretation

### Overall Satisfaction

Overall Preference between Ola and Uber



Ola: 46% of 50 = 23 respondents. Uber: 38% of 50 = 19 respondents. Both/Neither: 16% of 50 = 8 respondents

### State the Hypotheses

- **H<sub>0</sub> (Null Hypothesis):** There is no significant difference in the preferences among Ola, Uber, and Both/Neither.
- **H<sub>1</sub> (Alternative Hypothesis):** There is a significant difference in the preferences.

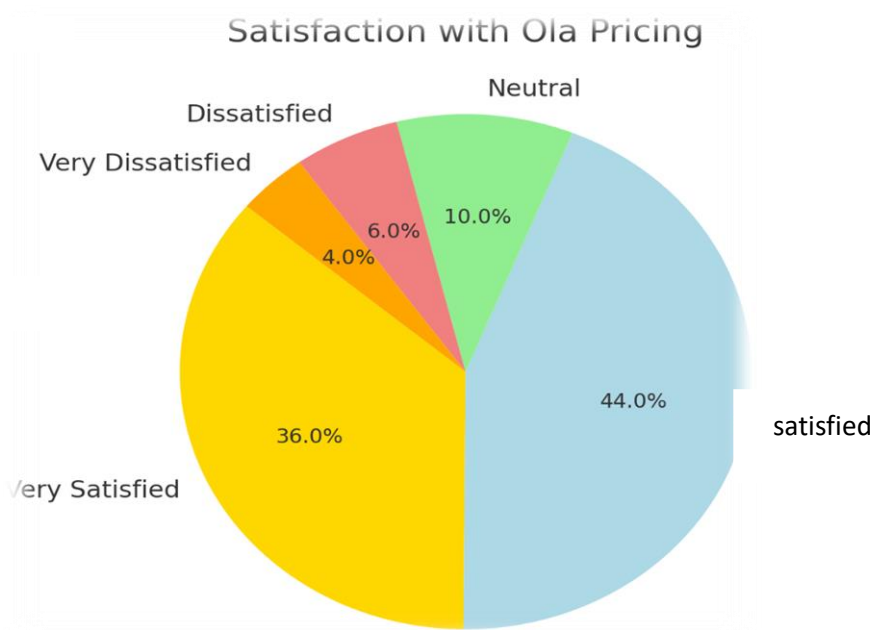
Expected Frequency =  $50 / 3 \approx 16.67$  respondents  $\chi^2 = \sum (O_i - E_i)^2 / E$  where  $O_i$  is the observed frequency and  $E_i$  is the expected frequency for each category.

Chi-square statistic ( $\chi^2$ ): 7.24, p-value: 0.027

**Interpretation:** The p-value (0.027) is less than the common significance level of 0.05. This suggests that there is a statistically significant difference in the preferences among Ola, Uber, and Both/Neither. Therefore, we reject the null hypothesis  $H_0$ , indicating that the differences in preferences are unlikely due to random chance.

## Key Influencing Factors

Pricing: Price competitiveness was found to be a critical factor for satisfaction.



Satisfied or Very Satisfied:  $80\%$  of  $50 = 0.80 \times 50 = 40$  respondents, Not Satisfied:  $20\%$  of  $50 = 0.20 \times 50 = 10$  respondents

## Hypotheses

**Null Hypothesis ( $H_0$ ):** The respondents are equally likely to be satisfied or not satisfied with Ola's pricing.

**Alternative Hypothesis ( $H_1$ ):** The respondents are not equally likely to be satisfied or not satisfied with Ola's pricing.

Expected Frequency (Satisfied) = Expected Frequency (Not Satisfied) =  $50/2 = 25$  respondents

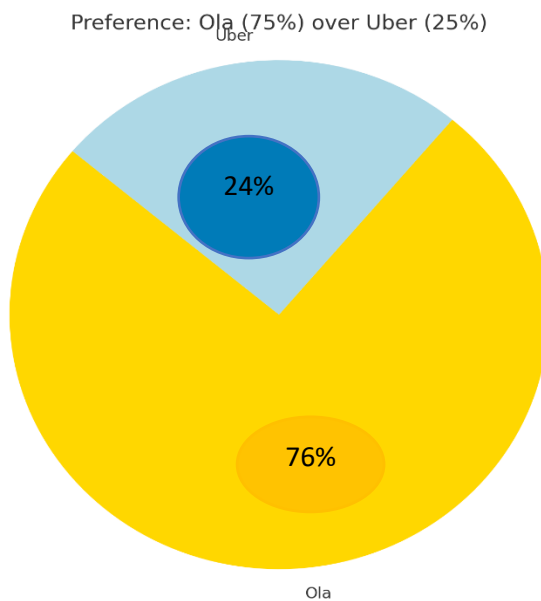
Where  $O_i$  is the observed frequency, and  $E_i$  is the expected frequency for each category.

Chi-square statistic ( $\chi^2$ ): 18.0, p-value: 0.0000221

**Interpretation:** The p-value (0.0000221) is much less than the common significance level of 0.05. This indicates a statistically significant difference in the satisfaction levels. Therefore, we reject the null hypothesis  $H_0$ , suggesting that the respondents are not equally likely to be satisfied or not satisfied with Ola's pricing. The majority are indeed satisfied or very satisfied.

## Safety

Safety during rides was a major concern, with Ola rated slightly higher than Uber.



**Total Respondents:** 50. **Observed Satisfied Respondents:** 76% of 50 =  $0.76 \times 50 = 38$  respondents (rounding might be necessary, depending on interpretation). **Observed Unsatisfied Respondents:** 24% of 50 =  $0.24 \times 50 = 12$  respondents.

## Hypotheses

**Null Hypothesis (H<sub>0</sub>H<sub>0</sub>):** The proportion of respondents satisfied with Ola's safety is 76% (i.e.,  $p=0.75$ ).

**Alternative Hypothesis (H<sub>1</sub>H<sub>1</sub>):** The proportion of respondents satisfied with Ola's safety is not 76% (i.e.,  $p \neq 0.75$ ).

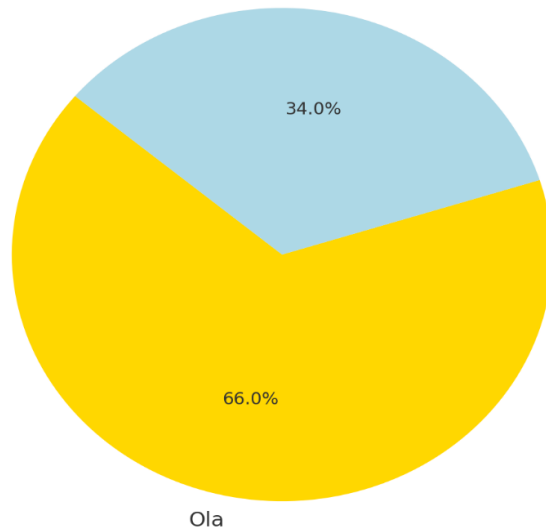
We expect 76% of the respondents to be satisfied and 24% to be unsatisfied if the true proportion is 76%. **Expected number satisfied:**  $0.76 \times 50 = 38$  **Expected number not satisfied:**  $0.24 \times 50 = 12$ , **Total Chi-Square Value**  $\chi^2 = 0.0067 + 0.02 = 0.0267$

**Interpretation:** Since  $\chi^2 = 0.0267$  is much less than 3.841, we fail to reject the null hypothesis. This suggests that there is no significant difference between the observed and expected proportions of respondents satisfied with Ola's safety.

## Driver Behaviour

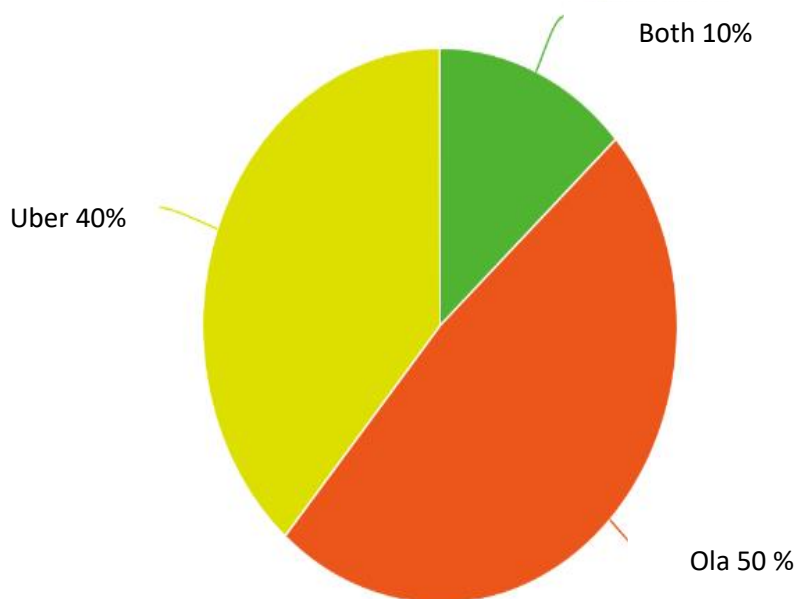
Professionalism and behaviour of drivers were good in influencing consumer satisfaction.

Consumer Preference on Driver Behavior: Ola vs Uber



**Interpretation:** The data suggests that a higher percentage of respondents, 66%, are satisfied with Ola drivers' behaviour compared to Uber. This indicates that Ola may have a stronger focus on driver conduct, leading to better customer experiences. Uber may need to improve driver training or customer service to close this gap.

**App Usability:** Both apps were found to be user-friendly, but Ola was rated slightly higher for app experience.





**Ola satisfaction:** 50% of 50 respondents = 25 respondents, **Uber satisfaction:** 40% of 50 respondents = 20 respondents (we'll approximate to 20 for simplicity), **Both satisfied:** 10% of 50 respondents = 5 respondents (we'll approximate to 7 for simplicity). The expected frequencies assuming independence can be calculated based on the marginal totals. We can then use the observed and expected values to calculate the Chi-square statistic, which will help determine if there is a significant difference in satisfaction between the two services.

**Interpretation:** The Chi-square test results in a Chi-square statistic of approximately 0.365 with 1 degree of freedom. The corresponding p-value is 0.546.

This p-value is much greater than the typical significance level of 0.05, indicating that there is no statistically significant difference in satisfaction between Ola and Uber based on the respondents' data. In other words, the variation in satisfaction levels between the two apps, Ola's app usability is good.

## Findings

1. Majority of the respondents belong to the 18- 20 age group category.
2. Based on the demographic factors, The online booking differs, since some of the consumers book online cab only need time and some consumers book online cab for cost.
3. The major customer prefer online cab for cost convenience, and safety concern.
4. From the data analysis I can say that all the respondents have tried online cab.
5. Regarding the services provided by online cab such as on-time pick up, payment security, quality of information, less time in evaluating and convinces, safety and secureness etc., For all these services provided by online cab maximum of the respondents agree that these services are true followed by some of the respondents highly agree with these statements, some small percent of the respondents are neutral and disagree with some of the services, so I can say that level of satisfaction of the respondents who have tried online cab are satisfied.
6. Majority of the respondents have comfortable feeling in online cab.
7. Majority of the respondents consider the reliability and punctuality of online cab services compared to traditional taxi services online cab services is better.
8. Majority of the respondents have also experienced issues with the online cab service app or website, such as difficulty booking a ride or payment processing errors.

9. Majority of the respondents not use additional services offered by online cab companies for cost, such as wifi.

### Limitations of the Study

- The study was limited to the Chengalpattu district, and results may not be generalizable to other regions.
- The sample size was limited to 50 respondents, which may not fully represent the broader population.
- Most of the respondents are 20-25 age group so we don't have the opinion of 25 plus age group.

### Suggestions

1. Improving Pricing Strategies: Both companies should consider more transparent and competitive pricing to attract more customers.
2. Enhancing Safety Measures: Continued focus on safety features and driver training can increase customer trust.
3. App Enhancements: Regular updates to improve app usability and reduce technical glitches.
4. Driver Management: Implement stricter driver guidelines to improve behaviour and professionalism.

### Future Research Directions

Further research could expand the geographical scope of the study and include a larger sample size.

This study provides a comprehensive understanding of consumer satisfaction towards Ola and Uber in Chengalpattu, offering valuable insights for both companies to improve their services.

### Conclusion

The study reveals that consumer satisfaction towards Ola and Uber in Chengalpattu is generally positive, with Ola having a slight edge in overall satisfaction. However, both companies need to address issues related to pricing and driver behaviour to enhance customer experience further.

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# A Study on Leveraging Technology for the Integration of Sustainable Development Goals in Hybrid Business Models

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## Abstract

*This study explores the integration of Sustainable Development Goals (SDGs) into hybrid business models through technology, aiming to boost business efficiency and societal welfare. With a global shift towards sustainability, businesses are blending environmental and social goals with profitability, facing both opportunities and challenges in utilizing technological innovations for sustainable scaling. Employing a Descriptive Research Design and Non-probability Convenience Sampling, the research collected data from 60 participants using structured questionnaires enhanced by secondary sources. Simple Percentage Analysis was used to interpret how technologies like AI, blockchain, and IoT are advancing SDGs within these business models. The findings reveal that while a significant majority acknowledge technology's role in sustainability, many are neutral about its direct impact on business sustainability and SDG integration. The study suggests the need for greater awareness and educational programs to fill SDG knowledge gaps among stakeholders. It recommends enhancing engagement through practical demonstrations of technology's benefits and developing tools for improved sustainability data management. Furthermore, it advises investing in robust technologies to increase business model resilience and adaptability. Ultimately, the study underscores the potential yet underutilized role of technology in sustainable business practices, emphasizing the need for businesses to enhance technological engagement and advocacy to align more effectively with SDGs.*

*Keywords: Technology Integration, Sustainable Goals, Hybrid Models, Business Sustainability, SDG Alignment*

## Introduction

In an era marked by rapid technological advancements and increasing environmental and social challenges, the integration of Sustainable Development Goals (SDGs) into business operations has emerged as a critical strategy for sustainable growth. The United Nations' SDGs provide a comprehensive framework to address global issues such as poverty, inequality, climate change, environmental degradation, and justice. As businesses play a pivotal role in achieving these goals, there is a growing need to explore how technology can enhance this integration. This study focuses on the potential of leveraging technology within hybrid business models to not only drive innovation but also foster a sustainable future that aligns with the SDGs. Hybrid business models, which combine elements of traditional and innovative business practices, offer a unique platform for the implementation of sustainable strategies. These models are increasingly relevant in today's economy, where the blend of physical and digital operations can lead to more resilient and adaptive business structures. By incorporating technological solutions, companies can enhance efficiency, reduce costs, and increase their competitive advantage while contributing to broader societal goals. This research aims to understand how various technologies such as blockchain, artificial intelligence (AI), and big data analytics can be effectively integrated into these hybrid models to address specific SDGs.

The significance of this study lies in its ability to provide empirical insights into the role of technology in promoting sustainable business practices. With sustainability becoming a central consideration for businesses, the need to adopt technologies that drive economic, social, and environmental benefits has become imperative. This research explores several key areas, including the impact of technology on enhancing transparency in supply chains, improving resource efficiency, and enabling a circular economy—all of which are vital for the integration of SDGs. Moreover, this study examines the challenges and opportunities associated with technological integration in hybrid business models, providing a balanced view of its efficacy and potential pitfalls. The findings aim to guide businesses in making informed decisions about technology investments and strategy alignments with sustainability goals. Overall, this research contributes to the growing discourse on sustainable development in the business sector, offering actionable insights and strategies for leveraging technology to make a meaningful impact. As companies worldwide strive to align their operations with the SDGs, this study provides a crucial understanding of how hybrid business models equipped with advanced technologies can lead to a more sustainable and equitable world.

## Statement of the Problem

In an era where sustainability has become a central focus for global development, businesses are increasingly challenged to integrate Sustainable Development Goals (SDGs) into their operations. Hybrid business models, which blend social and environmental objectives with profitability, present a promising approach to achieving these goals. However, despite the potential of such models, there remains a critical gap in understanding how technology can be leveraged to enhance their efficiency and scalability. As businesses navigate a complex landscape of environmental challenges, resource limitations, and societal expectations, the integration of technology offers transformative possibilities. Yet, the precise role of technological innovations in aligning business models with SDG targets remains underexplored, raising important questions about the future of sustainable business practices.

The rapid pace of technological advancements, from artificial intelligence to blockchain and IoT, presents opportunities for businesses to optimize processes, reduce waste, and enhance transparency. However, while some organizations have begun to adopt these technologies in pursuit of sustainability, there is still a lack of comprehensive insight into the broader impact on both businesses and society. Understanding how technology influences not only the economic performance of hybrid business models but also their contribution to societal well-being is essential. This study aims to fill this knowledge gap by investigating how technology can be harnessed to drive sustainable development in business, with a focus on improving both business outcomes and societal welfare.

## Objectives of the Study

1. To explore the role of technology in enhancing hybrid business models that are aligned with achieving the Sustainable Development Goals (SDGs).
2. To analyze the impact of technological advancements on the sustainability of business operations and societal well-being.
3. To assess the contribution of technological innovations in promoting sustainable business practices and improving the overall welfare of society.

## Review of Literature

Raith and Siebold (2018) discuss how transformative business models, underpinned by sustainable principles, are essential for the SDGs' realization at organizational levels. They

argue that the agility to transition to sustainable business models confers a competitive edge, enabling organizations to balance resource efficiency with monetary and non-monetary value creation for a broad stakeholder base. Similarly, Di Vaio *et al.* (2020) emphasize the role of Artificial Intelligence (AI) in constructing sustainable business models that align with SDGs, particularly through enhancing resource management practices. They highlight the necessity of Knowledge Management Systems (KMS) in fostering a cultural shift towards sustainability through AI, underscoring the intersection of technology and sustainable business practices.

Martínez-Peláez *et al.* (2023) provide a perspective on how digital transformation facilitates sustainability, especially within micro-, small-, and medium-sized enterprises (MSMEs). They suggest that digital technologies like big data analytics are crucial for MSMEs to undertake sustainable transformations effectively. In concordance, Fuerst, Sanchez-Dominguez, and Rodriguez-Montes (2023) explore how digital technologies within born-sustainable ventures create value while adhering to sustainability. Their findings indicate that while digital technologies promise enhanced stakeholder integration and social inclusion, their actual implementation within sustainable business models often encounters significant challenges.

Further expanding on digital dimensions, Bencsik *et al.* (2023) explore digital sustainability, analyzing how digital technologies enable environmental and social value creation in smart city initiatives. They propose a business model framework that integrates value creation and capture, which is crucial for realizing digital sustainability. Additionally, Hajikhani and Suominen (2022) delve into how machine learning models can enhance the alignment of technology development with SDGs, thereby improving the identification and implementation of sustainable technologies in business practices.

This body of literature underscores a collective recognition of the role of technology in advancing sustainability through business models. It reflects a growing academic and practical interest in harnessing digital innovations to meet global sustainability criteria, emphasizing the need for businesses to adapt and transform their operations in alignment with SDGs. The findings from these studies form a robust foundation for further exploration into how hybrid business models can leverage technology to fulfill sustainability objectives effectively, thereby contributing to the overall welfare of society. This underscores the ongoing necessity for research in this field to continuously refine and optimize the integration of technology in sustainable business practices.

## Research Methodology

A comprehensive research methodology was employed to ensure the collection of relevant and insightful data, specifically focused on the integration of Sustainable Development Goals (SDGs) in hybrid business models through technological innovations.

## Research Design

The study adopted a Descriptive Research Design, instrumental in providing an accurate portrayal of how technology is utilized within hybrid business models to achieve SDGs. This design is crucial as it enables a systematic description of the phenomenon, focusing on the types of technologies employed, the scope of their integration, and their impacts on sustainable business practices.

## Sampling Design and Technique

Due to the specific nature and scope of the research, a Non-probability Sampling method was used. The Convenience Sampling Technique was specifically employed, allowing researchers to efficiently collect data from a sample that was readily accessible and convenient. This technique was particularly advantageous given the practical constraints of time and resources and enabled quick data collection from respondents who were available and willing to participate, including business managers and executives who are directly involved in implementing hybrid business models.

## Data Collection

Data was collected through two primary sources:

- **Primary Data:** Collected using a structured questionnaire, which included a range of questions designed to gather quantitative information on the extent and effectiveness of technology integration in achieving SDGs within hybrid business models. The questionnaire also explored qualitative insights into the challenges and benefits perceived by businesses in this integration.
- **Secondary Data:** Collected through a review of existing literature, case studies, and reports on the use of technology in sustainable business practices. This helped frame the questionnaire by providing a solid theoretical foundation and ensuring that the instrument covered all relevant aspects of the study's topics.



## Sample Size

The study was conducted with a total sample size of 60 respondents. This number was selected to effectively balance depth of insight with logistical feasibility, ensuring the collection of manageable yet significant data.

## Tools Used

Simple Percentage Analysis was employed to analyze the data collected. This method was chosen for its straightforwardness in quantifying responses and facilitating the clear presentation and interpretation of results, enabling the identification of trends and the formulation of conclusions from the data.

## Data Analysis and Interpretation

**Table No. 1 Familiarity with Sustainable Development Goals (SDGs)**

Level of familiarity	Percent
Very familiar	26.7
Somewhat familiar	63.3
Not familiar	10.0
Total	100.0

Source : Primary data

**Inference:** Table No. 4.1 reveals that a significant majority of respondents have some level of familiarity with the Sustainable Development Goals (SDGs). Specifically, 63.3% of respondents reported being somewhat familiar, followed by 26.7% who are very familiar with the SDGs. The minority, constituting 10.0%, stated they are not familiar with the SDGs at all. Majority (63.3%) of the respondents are somewhat familiar with the Sustainable Development Goals (SDGs).

**Table No.2 The Crucial Role of Technology in Business**

Opinion	Percent
Strongly Agree	4.9
Agree	26.7
Neutral	31.7
Disagree	31.7
Strongly Disagree	5.0
Total	100.0

Source : Primary data

**Inference :** Table No. 4.2 reveals a diverse range of opinions regarding the role of technology in business. The most common stance was neutral, with 31.7% of respondents neither agreeing nor disagreeing about the crucial role of technology. This percentage is closely followed by an equal proportion of respondents (31.7%) who disagree with the statement. Those who agree make up 26.7%, while small percentages either strongly agree (4.9%) or strongly disagree (5.0%). Most (31.7%) of the respondents are neutral about the crucial role of technology in business.

**Table No. 3 Promoting Sustainability through Technological Advancements**

Technologies	Percent
Data Analytics	8.3
Internet of things	8.6
Block chain	5.3
Digital Platform	8.3
All of the above	65
None of the above	4.5
Total	100.0

Source : Primary data

**Inference :** Table No. 4.3 reveals that the overwhelming majority of respondents, 65%, believe that all the listed technologies are crucial for promoting sustainability through technological advancements. This is followed by smaller, evenly distributed preferences for specific technologies: Internet of Things and Digital Platforms both at 8.3%, closely matched by Data Analytics also at 8.3%. Blockchain technology was slightly less favored at 5.3%, and a minimal 4.5% of respondents did not favor any of the technologies listed. Majority (65%) of the respondents believe that all of the listed technologies are crucial for promoting sustainability through technological advancements.

**Table No. 4 Effective Hybrid Business Models for SDG Integration**

Level of effectiveness	Percent
Highly effective	10.0
Moderately effective	43.3
Slightly effective	28.3
Not effective	11.7
Unsure	6.7
Total	100.0

**Inference :** Table No. 4.4 reveals that respondents predominantly view hybrid business models as effective to varying degrees for SDG integration, with 43.3% considering them moderately effective. This is followed by 28.3% who perceive these models as slightly effective. A smaller group, 10.0%, believes they are highly effective, while 11.7% view them as not effective. A minority of 6.7% remains unsure about the effectiveness of hybrid business models in integrating SDGs. Most (43.3%) of the respondents consider hybrid business models to be moderately effective for SDG integration.

**Table No. 5: Leveraging Data Analytics for Sustainable Business Growth**

Level of extent	Percent
Very Large extent	15.0
Large extent	23.3
Moderate extent	35.0
Small extent	20.0
Not at all	6.7
Total	100.0

Source : Primary data

**Inference :** Table No. 4.5 reveals a spectrum of opinions on the extent to which data analytics can be leveraged for sustainable business growth. The largest group of respondents, 35.0%, believes that data analytics can be leveraged to a moderate extent. This is followed by those who feel it can be leveraged to a large extent (23.3%) and a small extent (20.0%). A smaller percentage, 15.0%, see the leverage as very large, while a minimal 6.7% believe data analytics does not contribute at all. Most (35.0%) of the respondents believe data analytics can be leveraged to a moderate extent for sustainable business growth.

**Table No. 6: Financial Inclusion as a Key Driver of Sustainability**

Level of importance	Percent
Extreme important	11.7
Very important	25.0
Moderate important	40.0
Slightly important	16.7
Not at all important	6.6
Total	100.0

Source : Primary data

**Inference :** Table No. 4.6 reveals that the majority of respondents view financial inclusion as an important driver of sustainability, albeit to varying degrees. The largest segment, constituting 40.0%, perceives its importance as moderate. Following this, 25.0% consider it very important, while 16.7% view it as slightly important. A smaller fraction, 11.7%, sees it as extremely important, and the least, 6.6%, believe it is not at all important. Most (40.0%) of the respondents believe that financial inclusion is moderately important as a key driver of sustainability.

**Table No. 7 Blockchain technology can enhance transparency in global supply chains**

Level of opinion	Percent
Strongly Agree	13.3
Disagree	16.7
Neutral	51.7
Strongly Disagree	18.3
Total	100.0

Source : Primary data

**Inference :** Table No. 4.7 reveals a significant inclination towards neutrality concerning the role of blockchain technology in enhancing transparency in global supply chains, with 51.7% of respondents expressing a neutral opinion. Those who disagree or strongly disagree with the statement collectively represent 35.0% of the responses, with 18.3% strongly disagreeing and 16.7% disagreeing. A smaller portion, 13.3%, strongly agree with the potential of blockchain technology to enhance transparency. Majority (51.7%) of the respondents remain neutral on the impact of blockchain technology in enhancing transparency in global supply chains.

**Table No. 8 Enhancing resource efficiency and promoting a circular economy**

Level of effectiveness	Percent
Moderate effective	16.7
Not effective	21.7
Unsure	45.0
Very effective	16.7
Total	100.0

Source : Primary data

**Inference :** Table No. 4.8 reveals that a significant portion of respondents, 45.0%, are unsure about the effectiveness of enhancing resource efficiency and promoting a circular economy. Those who believe it is not effective and those who view it as very effective each constitute 21.7% and 16.7% respectively. The same percentage, 16.7%, also views it as moderately effective, indicating a split in opinions among those who have formed an opinion. Majority (45.0%) of the respondents are unsure about the effectiveness of enhancing resource efficiency and promoting a circular economy.

**Table No. 9 Support businesses that integrate SDGs through technological innovations**

Level of likeliness	Percent
Very likely	16.7
Likely	28.3
Neutral	31.7
Unlikely	20.0
Very unlikely	3.3
Total	100.0

Source : Primary data

**Inference :** Table No. 4.9 reveals that a plurality of respondents, 31.7%, hold a neutral position on the likelihood of supporting businesses that integrate Sustainable Development Goals (SDGs) through technological innovations. Following this, 28.3% feel it is likely they would support such businesses, and 20.0% view it as unlikely. A smaller percentage, 16.7%, are very likely to offer their support, while only 3.3% are very unlikely to do so. Most (31.7%) of the respondents are neutral regarding their likelihood to support businesses that integrate SDGs through technological innovations.

**Table No. 10 Role of digital platforms in driving consumer participation**

Level of rating	Percent
Excellent	6.2
Fair	33.3
Very Poor	33.3
Good	25.0
Poor	2.2
Total	100.0

Source : Primary data

**Inference :** Table No. 4.10 reveals that respondents are divided on the role of digital platforms in driving consumer participation, with equal percentages (33.3%) rating the effectiveness as either fair or very poor. This indicates a significant polarization in opinions regarding the impact of digital platforms. Following closely, 25.0% of respondents rate it as good, whereas a smaller segment (6.2%) considers it excellent. Only a minor 2.2% view the role as poor. Most (33.3%) of the respondents rate the role of digital platforms in driving consumer participation as either fair or very poor, reflecting a mixed perspective on their effectiveness.

**Table No. 11 Technology-driven green innovations can address environmental challenges**

Opinion	Percent
Very well	8.3
Extreme well	18.3
Moderate well	41.7
Not well at all	25.0
Slightly	6.7
Total	100.0

Source : Primary data

**Inference:** Table No. 4.11 reveals a distribution of opinions regarding the effectiveness of technology-driven green innovations in addressing environmental challenges. The majority of respondents, 41.7%, believe these innovations address environmental challenges moderately well. This is followed by 25.0% who think they do not address challenges well at all. A significant number, 18.3%, feel they address challenges extremely well, while smaller fractions believe they do very well (8.3%) or only slightly (6.7%). Most (41.7%) of the respondents believe that technology-driven green innovations address environmental challenges moderately well.

**Table No. 12: Enhancing Disaster Response and Risk Management through Technology**

Level of extent	Percent
Very large extent	6.6
Large extent	31.7
Moderate extent	51.7
Slight extent	10.0
Total	100.0

**Inference :** Table No. 4.12 reveals that the majority of respondents believe technology enhances disaster response and risk management to a moderate extent, with 51.7% expressing this view. A significant portion, 31.7%, feel it does so to a large extent, while smaller percentages see its impact as very large (6.6%) or slight (10.0%). Majority (51.7%) of the respondents believe that technology enhances disaster response and risk management to a moderate extent.

**Table No.13: Confident of businesses using hybrid models will contribute to the SDGs**

Level of confidence	Percent
Extreme confident	10.0
Very confident	28.3
Moderate confident	50.0
Not confident at all	11.7
Total	100.0

Source : Primary data

**Inference :** Table No. 4.13 reveals that a majority of respondents, 50.0%, have moderate confidence that businesses using hybrid models will contribute to the Sustainable Development Goals (SDGs). This is followed by 28.3% who are very confident, and 10.0% who are extremely confident in the potential contributions of these models. A smaller portion, 11.7%, is not confident at all about the effectiveness of hybrid models in contributing to the SDGs. Majority (50.0%) of the respondents are moderately confident that businesses using hybrid models will contribute to the SDGs.

**Table No.14: Technological integration in business models could lead to improved societal well-being**

Level of opinion	Percent
Strongly Agree	11.7
Neutral	26.7
Agree	28.3
Disagree	23.3
Strongly Disagree	10.0
Total	100.0

Source : Primary data

**Inference :** Table No. 4.14 reveals that opinions are distributed across a spectrum regarding the impact of technological integration in business models on societal well-being. The largest percentage of respondents, 28.3%, agree with the positive impact, closely followed by 26.7% who hold a neutral stance. Disagreement is also significant, with 23.3% disagreeing and 10.0% strongly disagreeing. Those who strongly agree make up 11.7% of the responses. Most (28.3%) of the respondents agree that technological integration in business models could lead to improved societal well-being.

**Table No. 15: Interested in learning more about how technology impacts business sustainability**

Level of opinion	Percent
Yes, definitely	13.3
Probably	23.3
Maybe	51.7
Probably not	8.3
No, not at al	3.4
Total	100.0

Source : Primary data

**Inference :** Table No. 4.15 reveals that the majority of respondents, 51.7%, are tentatively interested in learning more about how technology impacts business sustainability, indicating a 'Maybe' stance. Following this, 23.3% lean towards a positive interest, saying 'Probably' they would like to learn more. A smaller proportion, 13.3%, express definitive interest ('Yes, definitely'). Conversely, 8.3% are probably not interested, and a minimal 3.4% have no interest at all. Majority (51.7%) of the respondents are tentatively interested in learning more about how technology impacts business sustainability.

### Findings of the Study

1. A significant majority (63.3%) of respondents are somewhat familiar with the Sustainable Development Goals (SDGs).
2. Most respondents (31.7%) hold a neutral stance on the crucial role of technology in business.
3. Majority (65%) believe that all listed technologies are crucial for promoting sustainability through technological advancements.



4. Most respondents (43.3%) consider hybrid business models to be moderately effective for SDG integration.
5. The largest group (35.0%) believes data analytics can be leveraged to a moderate extent for sustainable business growth.
6. Most respondents (40.0%) believe that financial inclusion is moderately important as a key driver of sustainability.
7. Majority (51.7%) remain neutral on the impact of blockchain technology in enhancing transparency in global supply chains.
8. A significant portion (45.0%) of respondents are unsure about the effectiveness of enhancing resource efficiency and promoting a circular economy.
9. Most respondents (31.7%) are neutral regarding their likelihood to support businesses that integrate SDGs through technological innovations.
10. Respondents are divided, with most (33.3%) rating the role of digital platforms in driving consumer participation as either fair or very poor.
11. Most respondents (41.7%) believe that technology-driven green innovations address environmental challenges moderately well.
12. Majority (51.7%) believe that technology enhances disaster response and risk management to a moderate extent.
13. Majority (50.0%) are moderately confident that businesses using hybrid models will contribute to the SDGs.
14. Most respondents (28.3%) agree that technological integration in business models could lead to improved societal well-being.
15. Majority (51.7%) are tentatively interested in learning more about how technology impacts business sustainability.

## Suggestions

The study suggested that efforts be intensified to raise awareness and deepen understanding of Sustainable Development Goals (SDGs) among business stakeholders, focusing on the strategic role that technology can play in hybrid business models. As a significant proportion of respondents are only somewhat familiar with SDGs, targeted educational programs and workshops could be implemented to bridge this knowledge gap and underscore the critical intersections of technology, business innovation, and sustainability goals. Moreover, the neutral stance and uncertainty expressed by many respondents regarding the impact of technology on business sustainability suggest a need for clear, evidence-based

showcases of how technology has concretely benefitted SDG-aligned business operations. Businesses should be encouraged to share case studies and results that highlight successful integration of technology in achieving sustainability outcomes, which could in turn enhance stakeholder support and engagement.

Furthermore, the development of platforms and tools that facilitate easy access to and analysis of sustainability data could be crucial in enabling businesses to measure and report on their SDG-related activities effectively. Considering the moderate confidence in technology's role in disaster response and risk management, there is a compelling case for investing in robust technological solutions that enhance resilience and adaptability in business models. This includes leveraging blockchain for transparency, enhancing resource efficiency through advanced analytics, and exploring innovative tech-driven solutions for circular economy practices.

## Conclusion

This study highlights a complex landscape where technology's role in supporting sustainable business practices and societal welfare is acknowledged but not fully harnessed or understood. The moderate levels of effectiveness perceived in hybrid models and technology applications suggest a gap between potential and realized benefits, signaling an opportunity for more concerted efforts to integrate technology deeply and broadly across business operations for sustainability. As businesses continue to evolve in response to global challenges, the strategic incorporation of technological innovations offers a promising pathway to not only meet but exceed sustainability targets encapsulated by the SDGs.

The findings underscore a tentative yet growing interest among business stakeholders in the transformative potential of technology. This reflects a broader trend towards digital transformation but also indicates areas where further engagement and capacity-building are necessary. As the business community moves forward, it will be crucial to leverage this interest and transform it into active participation and advocacy for technology-driven sustainability practices. Ultimately, the success of integrating SDGs into business models using technology will depend on the ability to translate this interest into effective action and measurable outcomes, reinforcing the role of technology as a critical enabler of sustainable development.

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# Factors influencing online Purchase Intentions towards Apparel: An Empirical Study

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## Abstract

*The rapid expansion of e-commerce has transformed consumer behaviour, particularly in the apparel industry. This study aims to explore the factors influencing online purchase intentions towards apparel, focusing on personal expression, trust, price sensitivity, and the overall shopping experience. Through a descriptive research design and a sample size of 78 respondents, data was analyzed using SPSS and AMOS to identify key determinants of online apparel shopping behaviour. Factor analysis was performed to extract the most significant attributes, while confirmatory factor analysis validated the model. Key findings suggest that individuality, brand preference, quality, and convenience are strong drivers of purchase decisions. The study provides valuable insights for online retailers and fashion brands to optimize digital strategies, enhance user experiences, and improve conversion rates.*

*Keywords: Buying Intentions, Purchasing Intentions, Fashion, Apparels, Online Shopping*

## Introduction

The fast growth of e-commerce has revolutionized the manner in which consumers purchase goods, especially apparel. The ease of navigating through a wide array of options, together with competitive pricing and flexibility regarding one's shopping location, makes online apparel shopping extremely popular. However, the decision to buy clothing online is influenced by a set of factors. These include brand availability, fashion trends, but also technology-related aspects: website usability, personalization, customer reviews. Gaining insight into the motives of online purchase intention of apparel will be important for a business in its optimization of the digital strategy. The attitudes of consumers towards online shopping are formed based on psychological, social, and economic factors combined in complex ways that influence purchase decisions. This research will go further to understand these factors and to what extent they contribute to shaping the behaviours of consumers in the digital fashion marketplace.

This treatise has hence examined the main factors that determine perceived ease of use, trust, price sensitivity, and online shopping experience in order to give necessary insights for apparel brands and online retailers. Such information could be used to devise more efficient marketing strategies, improve user experience, and eventually drive conversion rates higher within the competitive online apparel market.

## **Review of Literature**

Madalena Pereira and Rui Miguel (2009), in their research paper, analyzed the association between apparel attributes and advertising regarding consumer buying behaviour. They tried to deduce whether advertisement played a role in purchasing decisions and what all attributes were considered by consumers while purchasing any apparel.

Raja Gopal, 2011 contingents on buying behaviour factors such as brand image, promotion, and perishable market knowledge. The findings looked upon personality trait and socio-cultural factors as influential on purchase intention of consumers in Mexico. The findings also established that store choice and brand choice is positively related to purchase intention in consumers.

Padmakshi Sharma (2012) evaluated the factors that prevailed in consumers' behaviour in relation to branded apparel in Ahmadabad City. Particular attention was paid to the youth. It considered various attributes tagged to consumers and their purchasing behaviour. Referral groups, demand, diversity, and value are the important factors that have propelled the purchasing decisions in the organized retail apparels according to Y. Ramakrishna Prasad (2012).Md. Mazedul Islam et al. (2014) investigated the factors that influence consumer behaviour toward locally branded products. In their findings, among the attributes considered by customers for buying local brands, the top of the list was quality, value, aesthetic, and price.

Syed Irfan Shafi (2014) and Deepali Saluja (2016) conducted studies with the objective of analyzing consumer buying behavior related to fashion apparel in Delhi. Conclusions from their findings were that shoppers preferred shopping for clothes with their friends and family. The comfort, quality, and brand name were identified as crucial attributes that influenced purchase behavior. Interestingly, the study has found that factors such as age, occupation, education, and gender are not influential factors in consumer purchasing

behavior. Another important variable that emerged from this study was a positive attitude on the part of consumers in Delhi towards branded apparel.

Bello S.C. 2016, Namita Rajput et al. 2012 aimed to realize the consumer behaviour in an organized retail market. The study presented various attributes responsible for the kinetic nature of an organized market. It also tries to explore the factors that would affect consumer behaviour and measure the relative importance of these factors in shaping the decision to buy or not.

Vinith Kumar Nair, Dr. Pawan Kumar, and Kanchan (2017) conducted a study on consumer behavior in Ludhiana City regarding purchasing an apparel product. This study researched and analyzed the different psychological, demographic, and socio-economic factors affecting the buying decisions of consumers regarding apparel. From the results of this study, one can distinctly observe a high inclination of consumers toward branded products.

### **Objective of the Study**

The objective of this study is to analyze the key factors influencing online purchase intentions for apparel, including personal expression, brand preference, quality, and price sensitivity, to provide actionable insights for retailers.

### **Methodology**

The descriptive research design has been used for the study, which is cross-sectional in nature. In this regard, the sample of 78 was selected through a random choice for this research work. In the survey, a total of 22 questions were asked to assess functional attributes, behavioural factors, and aesthetics concerning online apparel purchase intentions. In the regard, SPSS and AMOS software are utilized to analyze these data. The Kaiser-Meyer-Olkin measure was performed together with Bartlett's Test to ensure sample adequacy. This is further supported by factor analysis and confirmatory factor analysis.

### **Data Analysis and Interpretation**

To evaluate the suitability of the data for factor analysis, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's Test of Sphericity were employed.

<b>KMO and Bartlett's Test</b>		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.666
Bartlett's Test of Sphericity	Approx. Chi-Square	661.185
	df	231
	Sig.	.000

<b>Rotated Component Matrix<sup>a</sup></b>							
	Component						
	1	2	3	4	5	6	7
“Clothes are one of the most important ways I have of expressing my individuality”	0.804	0.076	0.102	0.120	-0.160	0.075	-0.110
“I prefer the tailored look in my clothing”	0.796	0.145	-0.303	0.056	0.305	-0.025	-0.042
“My clothing selections are made with an eye toward the future”	0.792	0.044	0.014	0.101	0.104	-0.157	0.248
“I spend a lot of time on fashion- related activities”	0.671	0.043	0.346	-0.124	-0.004	0.180	0.105
“I try to buy “basics” in clothing”	0.595	-0.007	-0.091	0.413	0.124	0.012	-0.126
“I find that my size dictates what style of clothing I can buy”	0.461	0.142	0.185	-0.090	0.210	0.180	-0.353
“I never read fashion magazines or pay attention to fashion trends”	-0.048	0.757	-0.021	0.295	-0.108	0.025	-0.081
“I always buy at least one outfit of the latest fashion”	0.436	0.691	-0.158	0.212	-0.117	-0.067	0.180
“The quality of the merchandise I buy is more important than its fashion appeal”	0.268	0.655	0.368	-0.198	0.067	-0.170	-0.101
“If you have a few good clothes you can get by in most situations”	-0.198	0.577	0.229	0.064	0.033	0.137	-0.417
“I spend a lot of money on clothes and accessories”	0.421	0.452	0.145	-0.080	-0.381	0.284	-0.159
“I prefer to buy designer labels rather than store-branded merchandise”	-0.041	0.082	0.854	0.062	0.029	0.032	0.052
“I usually get bored with clothes if I keep them too long”	0.005	0.051	0.599	0.552	0.039	-0.006	-0.267
“It’s just not worth the money to be well dressed all the time”	0.480	0.105	0.544	0.157	-0.119	-0.017	-0.159
“My apparel selections are strongly influenced by clothing worn by people I admire”	0.077	0.192	0.146	0.841	0.109	-0.008	0.041

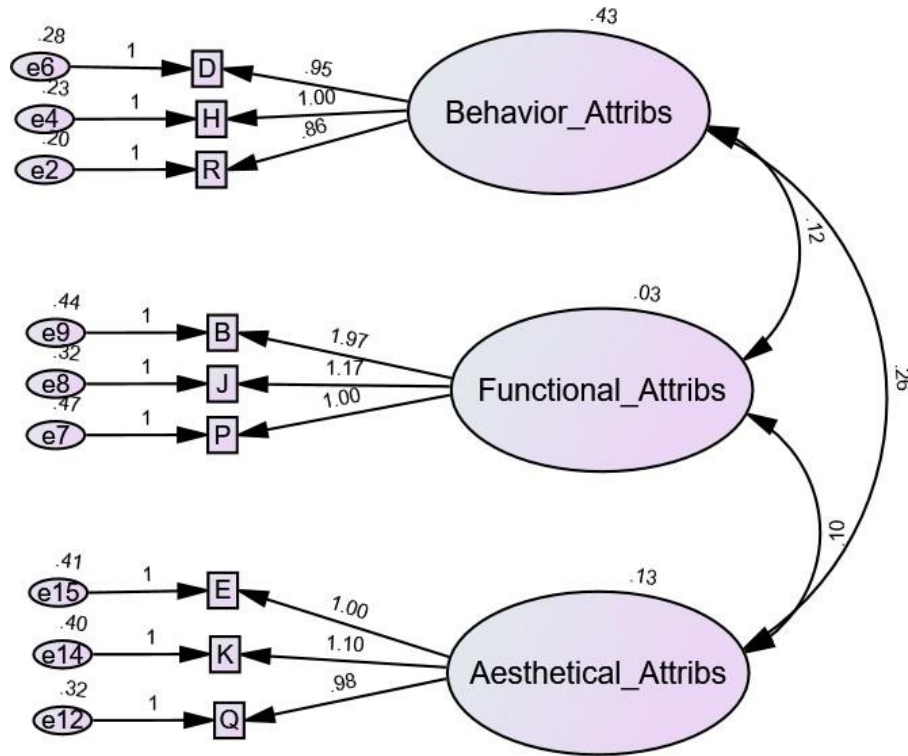


The KMO - Kaiser-Meyer-Olkin measure of sampling adequacy is 0.666; that is, the sample size is moderately adequate to conduct factor analysis. Although values closer to 1 are considered ideal, a KMO above 0.6 is appropriate to accept since it means that the variables are sufficiently correlated for factor extraction. Bartlett's Test of Sphericity has also revealed an approximate Chi-Square value of 661.185 with a significance level of 0.000, thus showing that a correlation matrix is not an identity matrix. That also means significant relationships do exist among the variables, which confirm the appropriateness to go ahead with factor analysis.

In the Rotated Component Matrix, the factors extracted through Principal Component Analysis were subjected to the Varimax rotation method. Such a rotation will simplify the factor structure, since the loadings of each variable on a single component are maximized. The number of iterations for the convergence of rotation was 10, thus guaranteeing a stable solution. The loadings on the matrix indicate how each statement about apparel shopping behavior is associated with certain components factors. For instance, the statement "Clothes are one of the most important ways I have of expressing my individuality" has a strong loading on Component 1 (0.804), suggesting that in this factor, the strong attributes are individuality and personal expression. Another example might be "I prefer to buy designer labels rather than store-branded merchandise", as it loads heavily on Component 3 at 0.854, suggesting it may well represent one component of "preference for luxury or branded clothes."

Apart from these, statements like "I spend a lot of money on clothes and accessories" load onto several components with different signs because such behavior is hardly as simple but much more complex, therefore, perhaps representing consumer fashion and spending habits. This matrix effectively groups related behavioural, psychological, and aesthetic attributes to help in the identification of key dimensions leading to online purchase intentions for apparel.

To validating and confirming the distinctive attribute variables, a confirmatory factorial analysis is carried out in AMOS and a model fit indices were verified.



**Result (Default model)** Minimum was achieved Chi square = 35.905 Degrees of freedom=24 Probability level = .056

### Model Fit Summary

#### CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	21	35.905	24	.056	1.496
Saturated model	45	.000	0		
Independence model	9	237.609	36	.000	6.600

#### RMR,GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.035	.912	.836	.487
Saturated model	.000	1.000		
Independence model	.186	.476	.345	.381

#### Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.849	.773	.944	.911	.941
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

## Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.667	.566	.627
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

## NCP

Model	NCP	LO90	HI90
Default model	11.905	.000	32.088
Saturated model	.000	.000	.000
Independence model	201.609	156.553	254.163

## FMIN

Model	FMIN	F0	LO90	HI90
Default model	.466	.155	.000	.417
Saturated model	.000	.000	.000	.000
Independence model	3.086	2.618	2.033	3.301

## RMSEA

Model	RMSEA	LO90	HI90	PCLOSE
Default model	.080	.000	.132	.179
Independence model	.270	.238	.303	.000

A confirmatory factor analysis (CFA) was conducted using AMOS to validate and confirm the distinct attribute variables related to online apparel buying behavior. The model fit was assessed using various fit indices to evaluate how well the model explains the observed data.

The results show that the Chi-square ( $\chi^2$ ) value for the default model is 35.905 with 24 degrees of freedom and a p-value of 0.056, indicating a reasonably good fit. Since the p-value is greater than 0.05, the model does not significantly deviate from the data, suggesting that it fits the observed data well. The CMIN/DF ratio (Chi-square/degree of freedom), a key measure of model fit, is 1.496, which is within the acceptable range (less than 3), further supporting that the model is a good fit. Several other fit indices were evaluated to ensure the robustness of the model. The Goodness of Fit Index (GFI) is 0.912, and the Adjusted Goodness of Fit Index (AGFI) is 0.836, both of which are close to or above the threshold of 0.9, indicating a good fit between the hypothesized model and the observed data. The Root Mean Square Residual (RMR) value of 0.035 suggests a small error of approximation,

reflecting the model's strong predictive ability. The Comparative Fit Index (CFI) is 0.941, and the Incremental Fit Index (IFI) is 0.944, both of which exceed the standard threshold of 0.90, showing that the model compares favourably against an independent model. The Tucker-Lewis Index (TLI), which adjusts for model complexity, is 0.911, further validating the model's fit.

The Root Mean Square Error of Approximation (RMSEA) for the model is 0.080, with a 90% confidence interval ranging from 0.000 to 0.132. This RMSEA value is within the acceptable limit of 0.08, indicating an adequate fit, though it suggests the model could be improved slightly. The PCLOSE value of 0.179 indicates a non-significant RMSEA, reinforcing that the model fits the data reasonably well. Overall, the CFA results demonstrate that the model is a good fit for explaining the distinct attributes influencing online apparel purchasing behavior, with most fit indices falling within acceptable or excellent ranges. The results suggest that the proposed model captures the underlying factors well, making it a useful framework for further analysis and interpretation.

### **Finding and Suggestion of the Study**

The findings from the study indicate that consumers place significant importance on clothing as a form of personal expression, with high factor loadings reflecting this sentiment. For example, the statement "Clothes are one of the most important ways I have of expressing my individuality" loaded strongly (0.804), signifying that personal expression is a key motivator behind online apparel purchases. Another important insight is consumers' strong preference for branded and designer clothing. The statement "I prefer to buy designer labels rather than store-branded merchandise" exhibited a high loading (0.854), underscoring that many consumers view designer labels as a crucial factor in their buying decisions.

Additionally, the analysis suggests that factors such as quality, spending habits, and fashion awareness also play a role in shaping consumer preferences. Statements related to fashion consciousness and spending habits, such as "I spend a lot of money on clothes and accessories" and "I try to buy the latest fashion" loaded onto various components, indicating the complexity of fashion-related buying behavior. Consumers appear to consider not only the aesthetic appeal of clothing but also practical aspects such as quality and cost. This is further supported by the statement "The quality of the merchandise I buy is more important

than its fashion appeal," which highlights that consumer's balance quality with fashion trends in their purchasing decisions.

The confirmatory factor analysis (CFA) conducted using AMOS confirmed the distinct attribute variables, with model fit indices indicating a good fit. The Chi-square ( $\chi^2$ ) value of 35.905 with 24 degrees of freedom and a p-value of 0.056 suggest that the model fits well with the observed data. Additionally, indices like the Goodness of Fit Index (GFI) at 0.912, Comparative Fit Index (CFI) at 0.941 and Root Mean Square Error of Approximation (RMSEA) at 0.080 all demonstrate a strong model fit, validating the identified factors influencing online apparel buying behavior.

### Suggestions

1. **Personalization and Brand Focus:** Given the strong preference for individuality and designer labels, online retailers should focus on personalization strategies, such as offering tailored recommendations based on previous purchases or style preferences. Highlighting branded and designer products in marketing campaigns can further attract consumers who prioritize brand value.
2. **Emphasize Quality and Practicality:** Since quality is a significant consideration for consumers, emphasizing the durability, material quality, and practicality of products can boost consumer confidence and drive purchases. Retailers can showcase customer reviews and ratings to further validate product quality.
3. **Enhancing User Experience:** The role of website usability in influencing purchasing decisions cannot be overlooked. Retailers should ensure that their online platforms offer seamless navigation, clear product descriptions, and easy access to reviews and size guides to improve the overall shopping experience.
4. **Targeted Marketing:** Insights into the psychological and fashion-conscious nature of consumers can help in designing targeted marketing campaigns that appeal to different consumer segments. Retailers can use these findings to develop campaigns focused on high-spending fashion enthusiasts, as well as those who value practicality and affordability.

### Conclusion

It is concluded that provided valuable insights into the factors influencing online purchase intentions for apparel. The analysis revealed that consumers are significantly driven

by personal expression, brand preference, and quality considerations when shopping for clothing online. The importance of individuality in clothing choices, along with a strong inclination toward branded and designer products, emerged as key motivators in purchase behavior. Additionally, factors such as quality, price sensitivity, and spending habits play a critical role in shaping the decision-making process.

The confirmatory factor analysis (CFA) validated the identified variables, confirming a good model fit with the observed data. The results of the study highlight the complex and multifaceted nature of online apparel shopping behavior, where aesthetic, psychological, and practical considerations intertwine to influence consumer choices.

These findings suggest that online retailers should focus on enhancing personalization, promoting brand and quality attributes, and improving the overall user experience on their platforms. By addressing these areas, businesses can better meet consumer expectations, ultimately boosting engagement and sales in the competitive online fashion market.

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# Driving Corporate Sustainability: The Role of Consumer Behavior in SDG Adoption

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## Introduction

In 2015, the United Nations introduced the 17 Sustainable Development Goals (SDGs), a detailed framework designed to tackle critical global challenges like climate change, poverty, and inequality. Aimed at guiding nations, organizations, and individuals toward sustainable development by 2030, the SDGs have increasingly underscored the essential role of businesses in creating a more sustainable future. As public awareness of environmental and social issues grows, consumer behavior has become a significant catalyst for this change, urging businesses to align their strategies with the SDGs.

The rising consumer demand for sustainability is transforming corporate practices across the globe. Companies are facing increasing pressure to implement sustainable practices and show their commitment to social and environmental accountability. In response, many organizations are incorporating SDG-aligned strategies into their operations to stay competitive and relevant. This paper investigates the complex relationship between shifting consumer preferences and corporate adoption of SDG goals, examining how businesses are meeting these demands through innovative practices, transparent reporting, and sustainable business models. By exploring the connection between consumer behavior and corporate sustainability, this study aims to offer valuable insights into the factors driving change and the pathway forward for businesses dedicated to a sustainable future.

## Literature Review

The integration of sustainability into corporate strategies has gained traction due to changing consumer behavior and expectations. As organizations adopt the United Nations

Sustainable Development Goals (SDGs), understanding consumer behavior's role is crucial. This literature review explores how consumer demand influences corporate sustainability and the adoption of SDGs.

Research by Rahul et al. (2024)<sup>1</sup> examines sustainable consumer behavior in developed and developing countries, revealing that consumers are motivated by environmental conservation and corporate social responsibility (CSR). Key motivators include awareness of environmental issues, while barriers involve limited access to sustainable products. Recommendations include establishing Green Fund Schemes and conducting sustainability audits.

Additionally, a paper<sup>2</sup> on food waste among young consumers integrates the Theory of Interpersonal Behavior and the Theory of Planned Behavior, identifying attitudes, subjective norms, and perceived control as key influences. Using a quantitative approach with 205 participants, it highlights the impact of habits and emotions on attitudes, aligning with SDG 12.

Lastly, Manuel (2024)<sup>3</sup> investigates how customer involvement in corporate sustainability (CS) can enhance sustainable consumption, linking psychological ownership to changes in consumption choices. Findings suggest that customer engagement serves as a strategic marketing tool to bridge the gap between intentions and actions in sustainability efforts.

### **Need and Scope of the Study**

This study explores the growing importance of consumer behavior in promoting corporate sustainability and the adoption of Sustainable Development Goals (SDGs). As consumers become more environmentally and socially aware, businesses are under increasing pressure to align their strategies with SDGs to remain competitive. The research examines how shifting consumer preferences impact corporate sustainability practices,



particularly regarding the adoption of SDG-aligned objectives, and analyzes the effects on business models across different industries. The scope includes an investigation of the connections between ethical consumerism, corporate social responsibility (CSR), and the implementation of sustainable business practices.

### **Objectives of the Study**

The objectives of this study are designed to explore the intricate relationship between consumer behavior and corporate sustainability, particularly in the context of Sustainable Development Goals (SDGs). Each objective aims to provide a comprehensive understanding of how shifting consumer preferences influence corporate practices across various sectors.

The specific objectives are as follows:

- To analyze the impact of changing consumer behavior on corporate adoption of SDGs
- To Examine the Role of Consumer Preferences in Driving Sustainable Practices in Businesses
- To Evaluate the Response of Corporations to Consumer Demands for Sustainability
- To Identify the Role of Digital Platforms and Social Media in Amplifying Consumer Influence on Corporate Sustainability
- To Assess the Challenges Corporations Face in Aligning Their Strategies with SDGs Due to Consumer Pressures

### **Methodology**

The study utilizes a mixed-methods approach, integrating both qualitative and quantitative research. Qualitative data are gathered from case studies of companies that implement SDG-aligned strategies in response to consumer preferences. Quantitative data are collected through surveys and secondary sources from existing reports, such as those from Nielsen and McKinsey, to quantify consumer influence on corporate sustainability practices.

## Research Design

The research design adopts an exploratory-descriptive framework. The exploratory aspect focuses on identifying key consumer trends that affect corporate sustainability. The descriptive aspect analyzes the impact of these trends on specific industries through case studies and industry data. Additionally, the study examines the use of CSR reporting and ESG metrics in response to consumer calls for transparency.

## Limitations of the study

The study is constrained by its dependence on publicly accessible data and the inconsistency in how various organizations disclose their alignment with the SDGs. Furthermore, the changing nature of consumer preferences and corporate sustainability practices may lead to shifts in the trends identified in this paper as market dynamics and regulatory environments evolve.

## Consumer Behavior and Sustainability

Consumer behavior has become a significant driver of sustainable practices among businesses globally. With increasing awareness of environmental and social issues, consumers are demanding more transparency and accountability from companies. This change in consumer expectations is altering market dynamics, prompting businesses to incorporate sustainability into their fundamental strategies. The following sections delve into two key elements of this transformation: the heightened awareness among consumers regarding the effects of their choices and the emergence of "conscious consumption," where ethical factors are central to purchasing decisions.

### 1. Increasing Environmental and Social Awareness

In the past decade, there has been a notable rise in consumer awareness regarding environmental degradation, climate change, and social inequalities. This shift is largely due to improved access to information via digital platforms, social media, and educational efforts. Consumers, especially millennials and Generation Z, are becoming more aware of the environmental and social consequences of their purchasing choices. According to Nielsen's

2022 report, 73% of global consumers are willing to change their consumption habits to lessen their environmental impact. Additionally, a 2021 McKinsey survey shows that 65% of consumers actively seek brands that align with their values, particularly regarding sustainability. This increased awareness has triggered a ripple effect in the business sector, prompting companies to address the needs of this new generation of conscious consumers to stay relevant and competitive.

## **2. The Emergence of Conscious Consumption**

Conscious consumers prioritize products and services that resonate with their ethical beliefs, demanding options that are eco-friendly, fair-trade, and socially responsible. This trend of "conscious consumption" is encouraging businesses to adopt sustainable practices not only for competitive edge but also as a moral obligation. The rising demand for sustainably sourced goods has spurred market growth for products categorized as sustainable, including those made from recyclable materials or produced under ethical labor conditions. Conscious consumers expect companies to contribute to solving global challenges such as poverty (SDG 1), climate action (SDG 13), and responsible consumption and production (SDG 12).

### **Corporate Response to Consumer-Driven Sustainability**

As consumer demand for sustainability grows, businesses are increasingly aware of the necessity to incorporate sustainable practices into their operations to stay competitive and relevant. This change is leading companies across different sectors to reassess their strategies and adopt more responsible methods. Key responses include the creation of sustainable business models, improved transparency through Environmental, Social, and Governance (ESG) reporting, and innovation in sustainable products. The following sections offer an in-depth look at how corporations are addressing the rising consumer focus on sustainability, showcasing their commitment to aligning with global Sustainable Development Goals (SDGs) and promoting a more sustainable future.

#### **1. Implementation of Sustainable Business Models**

In response to the increasing consumer demand for sustainability, corporations are

progressively adopting sustainable business models. This trend is particularly noticeable in sectors like retail, food and beverage, fashion, and technology. Companies are not just working to minimize their environmental impact; they are also enhancing labor conditions in their supply chains and contributing to societal well-being. For instance, Unilever, Nike, and Patagonia have incorporated sustainability into their core operations, focusing on gender equality (SDG 5), decent work and economic growth (SDG 8), and responsible production (SDG 12). IKEA has pledged to become a climate-positive company by 2030, aligning its objectives with SDG 13 (climate action) and promoting circular product lines to encourage sustainable consumption (SDG 12).

## **2. Corporate Social Responsibility (CSR) and Sustainability Reporting**

Modern consumers are demanding greater transparency and accountability from businesses regarding their sustainability initiatives. In response, companies are increasingly adopting Environmental, Social, and Governance (ESG) metrics to report their progress toward SDG-related objectives. ESG reporting allows businesses to highlight their sustainability achievements, build consumer trust, and comply with regulatory standards. Leading firms like Apple, Tesla, and Nestlé regularly publish sustainability reports that detail their efforts to reduce carbon emissions, utilize renewable energy, and ensure ethical sourcing in their global supply chains.

## **3. Sustainable Product Innovation**

In response to the growing demand for sustainable options, companies are investing in research and development to create new products that align with SDG objectives. These innovations often include biodegradable packaging, eco-friendly materials, and energy-efficient technologies. For example, PepsiCo has committed to making all its packaging 100% recyclable or biodegradable by 2025, supporting SDG 12. Similarly, the fashion sector, with brands like H&M and Stella McCartney, is launching clothing lines made from organic, sustainable materials, contributing to both SDG 13 (climate action) and SDG 15 (life on land).

Additionally, companies like Nestlé are reformulating products to reduce sugar and salt while increasing plant-based options, addressing public health and environmental concerns

simultaneously. Unilever has also introduced its “Love Beauty and Planet” line, which focuses on sustainable ingredients and packaging, appealing to environmentally conscious consumers.

### **The Role of Digital Platforms in Shaping Consumer Behavior**

The emergence of digital platforms and social media has revolutionized consumer engagement with corporate sustainability. With unprecedented access to information and the ability to mobilize collective action, consumers are now more empowered than ever to influence corporate practices. This shift is reshaping expectations around environmental responsibility and driving a new wave of sustainable consumption.

### **Access to Information**

The rise of digital platforms and social media has fundamentally transformed how consumers access and engage with information about corporate sustainability practices. Consumers now enjoy unprecedented access to a wealth of resources that inform their purchasing decisions and shape their expectations regarding corporate responsibility. Online reviews and ratings provide insights into companies' sustainability efforts, enabling consumers to evaluate brands based on their environmental impact.

### **Influencer Impact**

Influencer endorsements have emerged as powerful tools in this landscape, as influencers and celebrities leverage their platforms to promote sustainable products and practices. Their reach and credibility amplify the voices of sustainability-conscious consumers, creating a ripple effect that encourages others to adopt eco-friendly behaviors. Campaigns like #PlasticFreeJuly and #FridaysForFuture have gained significant traction on social media, mobilizing communities and encouraging individuals to advocate for corporate change and more sustainable practices.

## Social Media Activism

Digital platforms also empower consumers to engage in social media activism, effectively applying pressure on companies to prioritize environmentally friendly policies and align with Sustainable Development Goals (SDGs). Social media campaigns can quickly go viral, bringing widespread attention to issues such as plastic pollution, carbon emissions, and ethical sourcing. This public scrutiny encourages brands to be more transparent about their sustainability efforts and take meaningful action.

## E-commerce and Sustainability Ratings

Moreover, e-commerce platforms are increasingly integrating sustainability ratings and certifications into their shopping experiences. This feature allows consumers to make informed choices that resonate with their values, fostering a sense of accountability among companies. By highlighting sustainable options, these platforms cater to a growing demographic of environmentally conscious shoppers who demand greater accountability and transparency from the brands they support.

## Challenges in Aligning Corporate Strategies with SDGs

Although consumer demand serves as a strong motivator for corporate sustainability, companies encounter various challenges in fully aligning their strategies with the United Nations' Sustainable Development Goals (SDGs). These challenges include tackling greenwashing, managing intricate global supply chains, and finding a balance between profitability and sustainability initiatives. Furthermore, businesses must navigate changing regulatory environments and address gaps in consumer understanding of sustainability. The subsequent sections explore these obstacles, emphasizing the complexities and factors that organizations face as they work to incorporate SDG objectives into their operations and make significant advancements.

**Greenwashing:** Some companies engage in misleading practices, falsely claiming sustainable efforts without genuine action. This erodes consumer trust and can harm corporate reputations.

**Supply Chain Complexities:** Achieving sustainability across global supply chains poses challenges, especially in industries like fashion, agriculture, and electronics, where managing labor practices and environmental impacts can be difficult.

**Balancing Profitability with Sustainability:** For many businesses, meeting sustainability goals requires substantial upfront investments. Striking a balance between short-term profitability and long-term sustainability is a critical challenge for companies working to integrate SDGs into their business models.

**Consumer Education:** Many consumers still lack awareness about sustainability practices and how their purchasing choices impact the environment. Companies must invest in educating their customers to build a more informed consumer base.

**Regulatory Compliance:** As governments introduce stricter environmental regulations, companies must navigate complex compliance landscapes while adapting their strategies. This can be resource-intensive and may require significant changes to existing practices.

## **Conclusion**

Consumer behavior is increasingly driving the integration of Sustainable Development Goals (SDGs) into corporate strategies. As consumers demand sustainability and ethical practices, businesses are recognizing the need to align their operations with the global SDG agenda. Despite challenges such as greenwashing and supply chain complexities, the rise of conscious consumerism and the push for transparency and innovation are crucial for advancing the SDGs. The influence of consumer behavior on corporate sustainability is expected to grow, prompting companies to take more meaningful actions in response to a rapidly changing market. By addressing consumer education and regulatory compliance, businesses can better align with consumer expectations and contribute to sustainable development. Ultimately, companies that effectively embrace these changes can build resilient business models that benefit both society and the environment, supporting the global movement toward sustainability by 2030.

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# Balance of Trade in Services and GDP of India

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## Introduction

International trade is the exchange of goods and services between the countries in all over the world. In the globalised world, there is a need of interdependence on the trade of the national economies of the world to stimulate the pace of growth of each country. It has a special significance for developing nations because they require machinery, capital goods raw material etc. Presently in the world, there is hard to find any economy which has no economic relations with the world nations. That is why; it is a common phenomenon of multilateral and bilateral relations between the countries of the world. The interdependence started increasing with the end of the World War II and has grown manifolds with the advent of world Trade Organization. Along with the trade liberalization on the basis of most favored Nations, the economies are moving towards a faster pace of liberalization with the regional and bilateral trading agreements (Rahman, Mustafizur 2006). In recent years International trade has enlarged in a non-tradable form that is trade in services. Trade in services and is being flourished across the national boundaries in a bulk having high growth rates in comparison of merchandise trade. There are so many services are being exchanged throughout the world ranging from health to software to engineering to telecommunication and so on. Trade in services is an integral part of an economy for the development and growth.

The paper aims to study the impact of balance of trade of trade in services on the GDP of India. It is an attempt to analyze the change in the GDP due to change in the trade balance of trade in services.

The Common question that arises in any discussion related to the trade in services that is what exactly is being traded. The very familiar difference between the goods and services is that the goods are tangible and services are intangible. The first attempt had been made by Colin Clark to study services as a distinct economic activity to evaluate the role of service sector in the process of economic growth and structural change. Services in trade make up a major part of world economies, including developing economies, ranging from 53 per cent of gross domestic product in a country like India. World services trade has grown faster than

Merchandise flows. Developing Countries strongly participated in that growth having a share of world export services exports, on the basis of (BOP) accounted about 20 percent in 1980, 24.5 percent in 2000 and reached to 31 percent in 2010. The highest Services industries are already increasing in importance in the most developing and least developed countries. Services sector is expanding faster than other sectors such as agriculture and industry or manufacturing. In recent years, the faces of services trade have shifted from facilitating the trade in goods, especially international organizations promote trade in services with the general agreements on trade in services (GATS), having the aim to establish a system of international trade rules for the service sector. It could can't possible to define the service sector in a simple definition due to its covering of heterogeneous range of intangible products and activities (Natalya Ketenci&dilUz, 2010).

### Definition of services Trade and supply modes

GATS Covers four Modes of supplies of services which are:

- (I) **Mode-I Cross Border trade**- It includes the services trade from the territory of one member into the territory of another member.
- (II) **Mode-2 Consumption Abroad**- It includes the services in the territory of one member to the service consumer of any other member.
- (III) **Mode-3 Commercial presence**-when the service is provided within a country by locally-established affiliates, office or subsidiary of a foreign-controlled and owned company i.e. bank, hotel group and construction companies etc.
- (IV) **Mode 4 Movements of natural persons**. The service is provided through the natural person of a member in the territory of any other member (World Trade Organization).

### Selected Review on the Trade in Services

Adlung, Rudolf & Antonia Carzaniga (2001) highlighted the Potential for trade in health services under the general Agreement on trade in services. The study observed that the efficient communication system has helped in reducing the distance related barriers to trade, and the mobility of patients has increased due to the rising income and enhanced information. Simultaneously the private participation had also increased. The paper explained the modest role of the trade in services in general agreement and trade in services. Freund Caroline et. al. (2002) made an attempt to discuss the growth of trade in devices through the growth of internet

services. The study discussed much anecdotal evidence of the internet & just as a sort of an effect on service trade. The study found that the short- Jun impact would boost growth for an increase in the internet services. The study implied that it should also increase growth indirectly through its effect on openness and the internet would affect growth directly through its impact Productivity. Lee Hyun Hoor (2004) made an attempt to analyze the trade in services and the factors which affected the trade in services. The gravity model analyzes the determinants of services trade. The paper found that the value of R2 of trade in services was greater than the value of that of the goods which implied that the gravity equation performs better with Trade in service at international level that with trade in goods. Walsh Keith (2006) employed a gravity model approach, to analyze the determinants of trade in services and also measure the importance of non-tariff barriers on trade in services. The model found the most important determinants of trade in services were GDP of both countries and the Common language. On the other hand, merchandise trade, adjacency and membership of the European Union didn't find Significant to impact on the services trade. Ketenci Natalya & Idil Uz (2010) made an attempt to analyze the global trade in services and service sector in Turkey and estimated the elasticity of trade in services to real exchange rates and income. It is found an inelastic real exchange rate and income elasticity's in trade demand functions and the value of income elasticity significantly exceeds the value of real exchange rate. Marelli Enrico & Marcello Signorelli (2011) analyzed the economic growth of China and India in terms of their integration in the global economy. The paper analyzed the trade specialization and openness of the economy to quantify the impact on the economic growth of both the countries. There is a panel data model that has been used to test the reverse causality by using a fixed effect model. The study found the positive growth effect of opening up and integrating in the world economy. A. Cassette N. Fleury & S. Pettit (2012) studied the short-run and the long-run effects of trade openness in services on wage inequalities. The relative effect of trade in services on wages inequalities highlighted in the paper suggested that developed countries need to develop high-technology sectors having high skilled workers and also pursue higher education. Anil Amulya (2020) put an eye to discuss the impact of covid-19 on India-China trade. The paper analyzed the increasing or persistent trade deficit between India and China which was vast during the decades. Cinangnon Sena Kimm (2021) made an attempt to analyze the effect of manufacturing exports performance (MEP) on services export diversification covering the period of 1995 to 2014, using the dataset of 138 Countries. The paper suggested enhancing the positive services export diversification effect of higher manufacturing export performance through greater trade

policy liberalization domestic financial market development, a higher level of Education, more FDI flows and improvement in governance and institutional quality.

Table-1.1 India's Share in the World Trade in Services (US \$ Million)

Year	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
India's share in world imports in trade in services	2.31	2.54	2.6	2.21	2.27	2.95	2.88	2.89	2.67	2.49	2.52	2.71	2.91	3.08	3.07
India's share in world exports in trade in services	1.94	2.29	2.39	2.61	2.56	2.95	3.1	3.2	3.04	2.99	3.12	3.18	3.4	3.4	3.5

Source- WTO Database

Table-1.2 Balance of Trade in Services and GDP

Year s	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Balance of trade in services	-8457	-5731	-4483	18099	12337	2140	13239	15606	22273	28834	32711	28287	30699	28896	35187
GDP (\$ US Million)	823612	939066	1184724	1267470	1315230	1669620	1871919	1860877	1917054	2042939	2154759	2290591	2624329	2761329	2761338

Source- WTO Database

## Research methodology and data

Using a simple linear regression model for the Indian economy case will offer further insight on the analysis performed using simple linear models. In this regard, Gross Domestic Product is considered as the dependent variable and independent variable to be the balance of trade in services during 2005-2019. The data for these macroeconomic variables have been taken from the database of World Trade Organization (WTO).

Based on this information, we will analyse the existence of a dependency between the Gross Domestic Product as Y, on the one hand and the balance of trade in services as X on the other. In this context it is particularly important to specify and analyze the relationship between the two macroeconomic indicators, using a simple regression model. From the mathematical point of view it can be transcribed as follows:

$$Y_i = a + bX + c_i \dots\dots\dots 1.1$$

Y = Gross Domestic Product      a = Intercept      b = Coefficient of BoTs

X = Balance of Trade in Services      c = error term

To facilitate the estimation of simple regression model we used the MS Excel, where we defined as dependent variable the Gross Domestic Product (GDP) and as independent variable the balance of trade in services. Regression model we estimated the model parameters using the Least squares in method and we subsequently tested the validity of the model, its degree of reliability and statistical significance of the parameters included.

**Results & Discussion**

Results obtained by using Excel are as follows: table 1.3. The results of the regression model parameter estimates from the above diagram, provided by the analysis software, the simple regression model that describes the relationship between the two macroeconomic indicators.

Table- 1.3

<i>Regression Statistics</i>	
Multiple R	0.883979
R Square	0.781418
Adjusted R Square	0.764605
Standard Error	306001.5
Observations	15

It is noted that, for one per cent change in the Balance of Trade, GDP will increase by 37.55 times and there is therefore a direct relationship between GDP and Balance of Trade in services in the period 2005-2019.

Written under the following form:

$$GDP = 1207391.44 + 37.55 \text{ BoTs} + 5.508 \dots\dots\dots (1.2)$$

From the point of view of statistical tests that verify the accuracy of the econometric model considered, it can be seen that the values of tests R2 and adjusted R2 are high (R2= 78.14% and R2 adjusted = 76.46%), allowing us to conclude that the model is correct and with a minimum

risk for economic analysis. The correlation report ( $R = 0.7814$ ), tending towards unit value 1, demonstrates that the estimated regression model approximates the observation data very well, with high reliability.

We can safely say that the model is statistically significant after applying the F – statistic test, used to test the validity of econometric models. Also, the proposed model is valid, having a zero significance level P (F-statistic), much lower than 5% as seen in the table 1.3. For independent variable and constant, Excel reported the standard error of the coefficient, the t-statistic test and the associated probability. Working at the level of significance 5%, the P-value is less than the 5% (table-1.4) which is showing that we have to reject the null hypothesis and concluded that there is a significant impact of balance of trade in services on the GDP.

Table- 1.4

	Coefficient	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	<b>1207391</b>	121019.8715	9.976803254	<b>1.84837E-07</b>	94594.39108	1468838.985	94594.39108	1468838.985
Balance of trade in services	<b>37.55046</b>	<b>5.508184715</b>	6.817212265	<b>1.22991E-05</b>	25.65075478	49.450174	25.65075478	49.450174

The table is showing the predicted GDP through using the regression coefficient and intercept. The standard residuals are analysed through the descriptive statistics which shows that the value of skewness is -0.40041 and the value of kurtosis is -0.10344 (table-1.6) which implies that the standard residuals are normally distributed.

Table- 1.5

Standard Residuals	
Mean	2.89E-16
Standard Error	0.258199
Median	0.07125
Mode	#N/A
Standard Deviation	1
Sample Variance	1
Kurtosis	<b>-0.10344</b>
Skewness	<b>-0.40041</b>

## Conclusion

In view of the aforementioned considerations, it can be appreciated that the model chosen can be representative to describe the impact that balance of trade in services have on GDP growth. It helped us to outline a linear relationship between the studied variables. The regression model estimated proved to be one of precise character, as it has a high ratio of determination  $R^2 = 0.7814$ , so GDP is explained nearly 78.14 % by the independent variable included in the model. We conclude that this indicator is significantly influenced by changes in balance of trade in services.

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# Approach to Sustainable Interior Design and Deterrents among Interior Design Exponents in Bengaluru Urban

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## Abstract

*Harmony between human habitats and environment in creating conditions for sustainable development is a necessary component in interior space development. The purpose of the study was to understand the sustainable practices adopted by the exponents in the field of architecture and interior design industry in Bengaluru urban. A Cross sectional, descriptive study was conducted amongst 50 random sample of practising designers. Interview method using a semi structured questionnaire was used for the study. Chi Square test results indicated significant differences with respect to their qualifications, job profile, and years of experience in the field ( $p < 0.05$ ). Sole proprietors could adhere to sustainability more than those who worked for corporate firms. The professionals handled varied residential, commercial, hospitality and educational projects. Sustainable design strategies of adaptive reuse, retrofit, refurbish were seen on more than 60 percent of the sample. Statistical analysis indicated significant differences between groups at 95% confidence level. Majority of the professionals (94%) were involved in renovation projects. Energy and water conservation were practiced by most of the architects and designers. But, in selection of sustainable materials priority for client needs and budget overweighed other sustainable practices. Client resistance in agreeing to sustainability due to aesthetics, difficulty in maintenance, difficulty in procurement of skilled labour and materials, transportation costs were major deterrents to sustainability practices. Sustainability is definitely an oxymoron, yet its pursuit should never be stopped as future relies on current generation so that their future needs are met. More research on sustainable materials and availability of the expertise to common man is need of the hour.*

*Keywords: sustainable interior design, sustainable deterrents, interior design, sustainable materials.*

## **Introduction**

Human Habitats interact with the environment in various ways throughout their life cycles, from construction to operation and then demolition. They consume resources in the form of energy (40%), water (12-16% of all water), materials (25% timber, 40% raw materials), etc. and emit wastes (35-40% CO<sub>2</sub>) either directly in the form of municipal wastes or indirectly as emissions from electricity generation. The building industry is a huge consumer of natural resources. It is estimated that 20-50% of world's physical resources are consumed by buildings. In addition, 40% of all the trash is generated by the building sector (Kinebar et al., 2023).

The built environment continues to be a direct cause of pollution long after the construction is completed due to emissions produced in the process of running them and their impact on the ground. There is an urgent call for sustainable practices across nations to negate the challenges of climate change, pollution related health impacts and biodiversity loss caused by this sector (Ajayi, 2022).

Bruntland Commission, named after the chairperson of commission, Gro Harlem Bruntland, Prime minister of Norway; on Environment and Development set up by U.N. (United Nations World Commission on Environment and Development-UNWCED) defined in its report in 1987 ecological sustainability as a pattern of resource use that aims to meet the needs of the present without compromising the ability of future generations to meet their needs. It implies that we are borrowing the planet, its resources, and its environmental function and quality from future generations (Abyzov, et al., 2023).

Sustainable Interior Design is the design that seeks to minimise the negative environmental impact of buildings by efficiency and moderation in the use of materials, energy and development of space. It is a conscious approach to energy and ecological conservation in design of built environment (Patil and Patil, 2017). Sustainable Interior Design takes into consideration the consequences of design decisions on the global environment, but also the well-being of occupants and the stakeholders involved, while bestowing experiences that exceeds occupants' aesthetic and functional needs. It is primarily concerned with non structural and renovation construction (Ashouret al., 2022).

Chan *et al.*, 2017 have indicated that the essence of the concept of sustainable development derives from the Triple bottom line concept, which implies the balance between three pillars of sustainability. They are:

**Environmental sustainability** focused on maintaining the quality of the environment which is necessary for conducting the economic activities and quality of life of people (Darko *et al.*, 2017).

**Social sustainability** which strives to ensure human rights and equality, preservation of cultural identity, respect for cultural diversity, race and religion, (Martek *et al.*, 2018) and

**Economic sustainability** includes use of full cost accounting methods and real cost pricing to set tariffs of goods and services necessary to maintain the natural, social and human capital required for income and living standards. (Chan *et al.*, 2017)

Many researchers contends the belief that complete sustainable development is achieved through a balance between all these pillars, however, the required condition is not easy to achieve, because in the process of achieving its goals each pillar of sustainability must respect the interests of other pillars not to bring them into imbalance. Klarin, (2018) argues that while a certain pillar of sustainable development becomes sustainable, others can become unsustainable, especially when it comes to ecological sustainability, on which the overall capacity of development depends. (Klarin, 2018)

The green building concept encompasses the whole life-cycle of planning, designing, constructing, operating, and even decommissioning and disposal. A holistic vision of sustainable building seeks to absorb building strategies that are less resource-intensive or pollution-producing. However, the sustainability of an urban landscape is not just determined by the sustainability of the structures that make up its landscape; other variables such as transportation, facilities, social fabric, and culture must also be considered. (Martek *et al.*, 2018)

The design of the interior spaces supports the sustainability in following ways such as reduction of energy requirement by efficiently-designed lighting fixtures, design for disassembly, using materials and finishes from refurbished and recycled materials and avoiding waste during installation of interior components. (Ching and Bingelli, 2017)

Sustainability in interiors can be achieved primarily through designing and applying the sustainable concepts. The types of building material chosen for interior projects are important, as these materials can result in sustainable design. Materials, products and system used in the interiors contribute to good sustainable design. Sustainable design concepts and methods create comfortable and liveable interior spaces for people to pursue a healthy lifestyle (Mrinalini et al., 2023).

The five principles of sustainable Interior Design are:

**Design for energy efficiency:** This can be achieved by integration of energy efficient lighting and mechanical systems (HVAC) that reduce carbon emissions. Thermally insulated building envelope enhances energy efficiency by limiting heat ingress into the fit-out spaces and thereby reducing energy cost for cooling. Interior water bodies, fountains and use of watered blinds can help reduce the temperature of the space due to evaporative cooling in dry areas. Centralized HVAC systems reduce cooling energy costs as the cooling efficiency of these large systems are much higher than smaller HVAC systems that are dedicated to individual fit-outs (IGBC, 2021). Inclusion of interior elements to save energy like windows and window coverings like blinds, curtains to ensure natural ventilation and lighting. Design for passive solar design principles to reduce the need for artificial lighting. Skylights or atriums, sky gardens, large glazed windows can help in achieving this (Karsli, 2013). Application of light colours for wall and ceiling planes, creation of reflective surfaces, install energy efficient lighting fixtures like LEDs, CFLs, support energy efficiency. (Kinebar et al., 2023) Implementation of vernacular techniques, procuring locally available materials that have less embodied energies like red oxide cement flooring, Athangudi tiles etc. are sustainable.

**Design for low environmental impact:** Sustainability is concerned with all stages of material's life cycle from extraction of raw material progressing to production processes to fulfil specific functions and end with disposal as its operational life ends. Sustainability during extraction of raw material is concerned with abundance of availability of raw material and not to deplete them. While manufacturing, quality assurance and minimising toxic emissions and pollutions is taken into account. During operation stage, sustainable practice is use of these products appropriately (Skerlos, 2015).

Water conservation is another consideration for sustainable design. This may be achieved by incorporating low flow fixtures, rain water harvesting systems and grey water reuse to reduce water consumption (Kinebar et al., 2023).

**Reduce, Reuse and recycle -3Rs as strategies for sustainability:** The idea is to use as few materials as possible and use only what is absolutely necessary. Design for waste reduction during installation of interior components.

Reuse is the practice of reusing something, for its original use (traditional reuse) or for a new purpose. Concrete, masonry, brick, wood, insulation materials, doors and windows, structural steel, reinforcement and mild steel may all be easily removed and re used. Materials from construction and demolition works have high potential for reuse. The reuse of reclaimed building materials and products is viewed as a significant approach in reduction of construction and demolition wastes, generated as a result of building activities.

Alfuraty (2020) has suggested when materials cannot be reused or its consumption reduced, they may be processed and used for variety of purposes in interiors. This alternative is known as recycling. Use of materials from process of recovering materials from waste and turning to new products is recycling. The original product is destroyed in the process. This reduces the extensive consumption of natural resources. Materials can be recycled from construction sites including steel for reinforcing, electronic items, containers, paper, cardboard, plastics, ceramics and wood. Materials generally recycled from construction/ demolition sites include asphalt paving, chain link fencing, concrete blocks and ornamental concrete, paving stones, bricks; metals, electrical, plumbing fixtures, timber fencing, doors, windows, light fixtures and live trees. The usage of waste and recycled materials lowers costs. It provides viable solutions to environmental concern reduce consumption of raw materials and reduces dependence upon natural resources. By making use of refurbished, recycled, up cycled, local and renewable materials, the goal of sustainable interior design can be achieved (Mrinalini et al., 2023).

**Design for longevity and flexibility:** Selection of durable materials that last longer.

**Design for healthy environments:** Health conservation principles concerns 3 main design measures: “improving indoor air quality”, “providing air thermal, visual and acoustic comfort” and “selection of non-harmful materials”. The steps to improve indoor air quality

are avoiding the use of material that emit pollutants like formaldehyde and radon into the environment and designing adjustable windows for providing the necessary clean air indoors. (Mrinalini, Sasidhar, & Jayanthi, 2023). To provide thermal comfort it is suggested to use heat and humidity sensors which can sustain an environment of 21°C and 50% of relative humidity. For visual comfort, the use of solar shading elements and natural lighting with reduced glare effect should be provided and a visual connection with the exterior environment should be established. Measures for acoustical comfort include taking measures sound insulation for exterior, floor and between spaces. Finally to avoid using materials emitting VOC's and which contain pollutant-emitting asbestos, fibre in indoor environment are measured to take for protecting human health. (IGBC, 2021). In addition to these measures, it is recommended to use natural materials which protect the iron balance like wood and natural fabrics instead of synthetic material like polyester to provide the electroclimatic quality. (Mrinalini et al., 2023)

Society is beginning to recognise the interconnectedness of buildings, people and community in creation of environmentally responsible built environment, clients are beginning to understand their role and impact on environment. As a result they are seeking interiors that demonstrate environmentally responsible and sustainable design. This has sparked the interest for the need for sustainable interior design. (Skeros, 2015)

The concepts of environmental sustainability in interior design encompass all three concepts and its implementation both in new build and in renovation/retrofit of existing buildings. In comparison to traditional design practices, where aesthetics and functional needs of client were the essence, environmental sustainability in interior design focuses on materials intended application, aesthetic qualities, environmental and health impacts, availability, ease of installation, maintenance, initial and life cycle costs. The sustainability gap is the disparity that exists between the principles of sustainability and reality of practice. (Hayles, 2015)

Environmental responsibility can be represented in interior design through these issues: Design issues that are effective in limiting adverse effects on the natural environment. Minimizing the economic impact and performance effects of interior spaces within the building. Establishing goals pertaining to interior space quality metrics and their impact on both physical and mental comfort. . (Alfuraty, 2020)

Inconsistency in product assessment parameters, manufacturing processes lacking transparency makes sustainable material selection very difficult. (Akadiri, 2015). Client resistance, lack of experience, knowledge of information related to sustainable materials, suppliers providing them, high cost and aesthetic limitations are obstacles in use of sustainable materials (Ashouet et al., 2022).

Interior Designers have two challenges: Firstly, they must upgrade building infrastructures to increase energy efficiency in light of the requirement to reduce energy consumption so that the Earth is fit for human habitation. Secondly, alter the behaviour of building occupants through interior design. More meaningful measures for human centric sustainability must be taken into account, as they are the realm of an interior designer. When the two processes are combined, then interior design can become the new vision of sustainability. (Alfuraty, 2020) . The scientific production on the transition to sustainability in the construction sector is diverse but relatively recent, indicating that the field is still in its early stages and requires more research for a comprehensive understanding. Moreover, the low dissemination of the theme in the architecture, engineering, and construction community implies that the research findings may not have reached a wider audience within the industry, potentially limiting its real-world impact. (Candido et al., 2023)

**Objectives :** With this perspective, the paper explore the potential through insights from practice of what is driving change, anecdotes from current practice, and evolving the field. The study sheds light on interior designers and architects sustainable practices followed in Bengaluru city.

## Materials and Methods

A cross sectional and descriptive study was conducted in Bengaluru Urban. The selected sample (N=50, Random sampling method) included both practising architects and interior designers. Professionals who were involved in interior designing were considered for the study. The study was done using interview method to gain first hand information. The tool used for the study was a semi- structured questionnaire. The first section of questionnaire included questions that were socio-demographic in nature. This was followed by questions related to sustainability practices in type of built environment, sustainable materials, and deterrents in the sustainable design process. After getting the consent, the information was

collected regarding the sustainable practices followed by the design industry experts. The data retrieved was consolidated, coded and statistically analysed using MS Excel.

### Data Analysis and Results

**Demographics of the sample:** Demographic classification is important as it provides the general information of the studied sample. The collected data was consolidated and categorised based on the qualifications, job profile, years of experience in design field, type of establishment, and various projects handled by the respondents. The demographic profile of the practising industry experts chosen for the study are portrayed in Table-I.

**Table -1. Demographic characteristics of the sample**

Variables	Sustainability Practice						$\chi^2$ Test
	Mostly Sustainable		Sometimes Sustainable		Total		
	N	%	N	%	N	%	
<b>Qualifications</b>							<b>15.01*</b>
B.Arch.	14	28	3	6	17	34	
M.Arch.	8	16	1	2	9	18	
B.Sc. –Interior Design	5	10	10	20	15	30	
M.Sc-Interior Design	1	2	4	8	5	10	
B.Tech	3	6	1	2	4	8	
Total	31	62	19	38	50	100	
<b>Job Profile</b>							<b>8.8*</b>
Architects	14	28	4	8	18	36	
Conservation Architects	4	8	0	0	4	8	
Interior Designers	10	20	14	28	24	48	
Civil Engineers	3	6	1	2	4	8	
<b>Years of Experience</b>							<b>26.8*</b>
5-10	12	24	17	34	29	58	
11-15	7	14	0	0	7	14	
16-20	6	12	1	2	7	14	
21-25	6	12	1	2	7	14	
<b>Type of Establishment</b>							<b>26.6*</b>
Sole proprietor	21	42	5	10	26	52	
Corporate Firm	10	20	14	28	24	48	
<b>Projects Handled</b>							<b>9.9<sup>NS</sup></b>
Residential	3	6	5	10	8	16	
Commercial	3	6	4	8	7	14	
Commercial and Residential	11	22	9	18	19	38	
Commercial, Residential, Hospitality	7	14	0	0	7	14	
Commercial, Residential, Hospitality, Educational	7	14	1	2	9	18	
* Significant at 5%							NS: Non significant



Table-1. indicates the categorisation of the subjects based on their design practise adhering to sustainability. Out of 50 samples, 31 (62%) responded that they adhered to sustainability mostly in their professional practise, while 19 (38%) could follow sustainability only sometimes. The sample comprised of 26 architects (34% with Bachelors in Architecture and 18% Masters in Architecture), 20 Interior Designers (30% with Bachelors degree and 10% having Masters in Interior Design Qualification) and 4 samples with Bachelors in Technology qualifications. Statistical analysis indicated that the difference was significant at 5% level ( $p < 0.05$ ) amongst the professionals who practised sustainability mostly and those who practised sometimes.

The sample comprised of Architects (36%), 48% were Interior Designers, 8% Conservation Architects and Civil Engineers each. It may be noted that 28 percent of the sample who practiced sustainability mostly were architects and 20 percent Interior designers. All the Conservation architects amongst the respondents (8%) followed sustainability mostly in their career. Chi Square analysis shows significant difference between the mostly sustainable and sometimes sustainable categories ( $p < 0.05$ ).

Classification of subjects based on years of experience in Interior Design field revealed 58 percent of the respondents had 5-10 years of experience. 14 percent of respondents had 11-15, 16-20 and 21-25 years of experience in each category. With respect to experience years, it may be noticed that chi square value points out significant difference amongst designers who practised sustainability mostly and sometimes.

The limelight of the data is that nearly half of the sample (42%) of those who adhered to sustainability mostly was sole proprietors while 20 percent worked for corporate design firms. 26 respondents were sole proprietors and rest worked for corporate design firms. The data subjected to statistical analysis reported significant difference between the groups.

It may be observed that the projects handled by the professionals included residential, commercial, hospitality and educational. 38 percent of the participants worked on commercial and residential projects. Nearly quarter of the sample (22%), adhered to sustainability mostly handles both commercial and residential projects. Statistical test indicated no significant differences amongst the groups.

### Sustainability Practices Adopted by the design professionals

Table-2. provides the sustainable design measures taken up by the industry experts when clients approach them for space development in a built environment. Based on the assessment of design problem, designer's advice clients on various measures to reduce, reuse, retain recycle. These concepts help in environmental, economic and social sustainability. Adaptive reuse, retrofitting, renovation, refurbishing, recycling are green concepts that works well to conform to 3R- strategies of sustainability practices, i.e reduce, reuse, recycle.

**Table-2. Sustainable Design Principles Adopted in built environment.**

Sustainability Design Principles	Mostly Sustainable		Sometimes Sustainable		Total		$\chi^2$ Test
	N	%	N	%	N	%	
Adaptive Reuse	25	50	8	16	33	66	11.9*
Retrofit	26	52	5	10	31	62	
Renovate	31	62	16	32	47	94	
Refurbish	11	22	13	26	24	48	
<b>Total</b>	31	62	19	38	50	100	

\* Significant at 5%

Most of the interviewed professionals stated that clients approached for advices as to what deemed fit for their space development. Suggestions were thus provided based on the situation assessment like site analysis, budget, client requirements, and most efficient transformation of space. It was observed that maximum architects and designers who participated in the study had undertaken renovation projects (94%). 66 percent had undertaken adaptive reuse of space, 62 percent retrofitted projects. Nearly half of the respondents had undertaken refurbishment as the design principle. The processed data showed significant difference between the groups with respect to the sustainable strategies practised by the professionals.

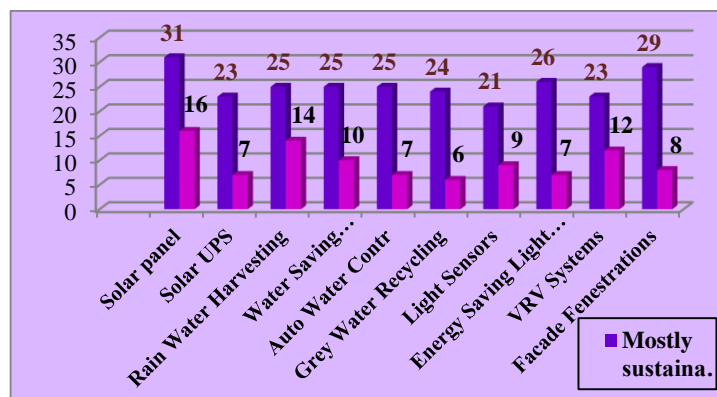
### Sustainable practices for energy efficiency and water conservation

Sustainable practices for energy conservation and water conservation is documented in **Table-3**. Various sustainable practices included installation of solar panels, rain water harvesting, water saving plumbing fittings, fixtures, water flow sensors, grey water recycling, light sensors, energy saving light fittings, Variable refrigerant Volume (VRV) systems, façade fenestrations like terracotta Jalli, skylights, atriums, glazed glass openings.

**Table-3. Sustainable practices for energy efficiency and water conservation**

Sustainable practices for energy efficiency and water conservation						
Variables	Mostly sustainable		Sometimes sustainable		Total	
	N(31)	%	N(19)	%	N	%
Solar panel	31	62	16	32	47	94
Solar UPS	23	44	7	14	30	60
Rain Water Harvesting	25	50	14	28	39	78
Water Saving plumbing Fixtures	25	50	10	20	35	70
Water Flow Sensors	25	50	7	14	32	64
Grey Water Recycling	24	46	6	12	30	60
Light Sensors	21	40	9	18	30	60
Energy Saving Light fittings	26	52	7	14	33	66
VRV Systems	23	46	12	24	35	70
Facade and other Fenestrations	29	42	8	16	45	90

Various sustainable practices included installation of solar panels, rain water harvesting, water saving plumbing fittings, fixtures, water flow sensors, grey water recycling, light sensors, energy saving light fittings, Variable Refrigerant Volume(VRV) systems , façade fenestrations like terracotta jalli, skylights, atriums, glazed glass openings. The sustainability practices are indicated in **Fig-1**. It may be noticed that 94% of the sample used solar panel for water heating purposes while only 58 percent installed them for electricity backup. More than three- fourths of the sample (78%) installed rain water harvesting in their projects. Majority of the professionals used water saving fixtures, and fittings in the designed spaces. 90percent of the professionals used different fenestration techniques for passive ventilation and lighting. It may be brought to limelight that 60 percent of the sample did follow sustainable practices with respect to energy and water conservation practices.



**Fig.1 Sustainable practices for energy efficiency and water conservation**

### Priority in criteria for selection of sustainable materials.

Working design professionals were asked on what were their priorities in selection of sustainable materials. The data thus collected is revealed in **Table 4**.

**Table-4. Priority in criteria for selection of sustainable materials.**

Priority in criteria for selection of sustainable materials	Local availability (N=50)	Eco-friendly (N=50)	Budget friendly (N=50)	Durability (N=50)	Easy availability (N=50)	Clients Requirements (N=50)	Recycle-able. (N=50)
1	2	7	13	0	0	28	0
2	5	1	20	5	2	18	0
3	5	5	7	25	8	2	0
4	2	15	6	14	11	2	0
5	21	14	3	5	4	0	0
6	15	8	1	1	25	0	0
7	0	0	0	0	0	0	50
<b>Total</b>	50	50	50	50	50	50	50

It was understood that among the study sample, the criteria of client requirements was first priority among maximum frequency of the sample (N=28), which was followed by budget friendliness (N=20, 40%). Half of the architects and design professionals considered durability as 3<sup>rd</sup> priority in selection of sustainable materials. The highlight of the data was that recyclable materials was last in their priorities. Nearly 72% of the samples had locally available materials as their 5<sup>th</sup> and 6<sup>th</sup> priority. Hence it may be understood that though architects and designers had the awareness and interests in sustainable materials, the priorities were focussed on client requirements and budget.

### Deterrents in adoption of Sustainable Practices.

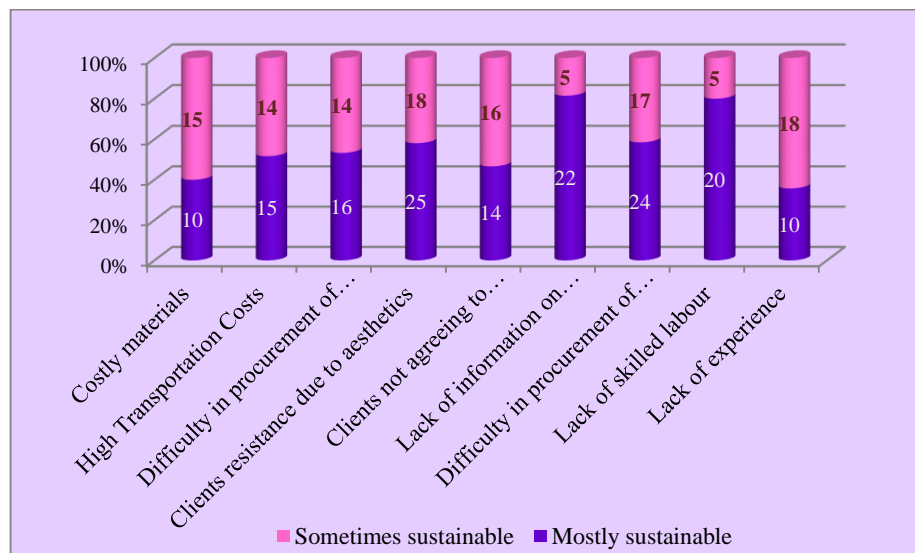
The participants opinion on sustainability practices were enquired and recorded. The obstacles faced in the practice of sustainability were tabulated. The recorded data is revealed in Table 5., Fig.2.

**Table 5. Deterrents in adoption of Sustainable Practices.**

Deterrents in adoption of Sustainable Practices	Mostly sustainable		Sometimes sustainable		Total	
	N(31)	%	N(19)	%	N	%
Costly materials	10	20	15	30	25	50
High Transportation Costs	15	30	14	28	29	58
Difficulty in procurement of materials	16	32	14	28	30	60
Clients resistance due to aesthetics	25	50	18	36	43	86
Clients not agreeing to sustainability due to lack of knowledge on maintenance	14	28	16	32	30	60

Lack of information on installation procedures	22	44	5	10	27	54
Difficulty in procurement of skilled labour	24	48	17	34	41	82
Lack of skilled labour	20	40	5	10	25	50
Lack of experience	10	20	18	36	28	56

The biggest issue in the pursuit of sustainability was clients resistance due to aesthetics. Sustainable materials are common occurrences and clients wished for variations in designs. The problems faced by architects and designers in pursuing sustainability indicated 82 percent faced issues in procurement of skilled labour. 60 percent had faced difficulty in procurement of materials and clients not agreeing sustainability due to lack of knowledge on maintenance. More than half of the sample faced barriers like lack of skilled labour, lack of information on installation, material costs, transportation costs and lack of experience. Deterrents in adoption of sustainable practices overweighed amongst professionals who were adhering to sustainability only sometimes.



**Fig. 2. Deterrents in adoption of Sustainable Practices.**

The samples also we asked if they promoted sustainability to the clients and the data indicated 90percent of the sample doing so. Some of the materials that were suggested by the professionals were concrete panelling and cladding to avoid toxic paints. Non toxic paints/ avoidance of paint usage, exposed concrete, stone veneers, engineered wood panelling, were sustainable materials used by the design professionals for wall planes. Terrazzo, self adhesive floor tiles, rammed earth, tiles, engineered wood planks, Shahadabad stone, Tandur stone, were recommended for floor planes. Other sustainable construction materials that they commonly used were adobe, rammed earth construction, bio glass, steel, hempcrete, fly ash

bricks, bamboo. Bamboo, cork, recyclable acoustic materials made of straw, plant waste fabric sandwiched glass, linen, hemp (plant used to absorb ultra violet radiation) ,jute were the materials that the designers had used in their projects.

## Conclusion

Sustainability practices were adhered mostly by more than 60 percent of the sample. Significant differences were seen with respect to their qualifications, their job profile, and experience in the field. Sole proprietors could adhere to sustainability more than those who worked for corporate firms. The professionals handled varied residential, commercial, hospitality and educational projects. Hence they had scope to include sustainability in various types of projects. Sustainable design principles of adaptive reuse, retrofit, refurbish, were seen on more than 60 percent of the sample. Majority of the professionals were involved in renovation projects. Energy and water conservation were practiced by most of the architects and designers. But, in selection of sustainable materials priority for client needs and budget overweighed other sustainable practices. Client resistance in agreeing to sustainability due to aesthetics, difficulty in maintenance, difficulty in procurement of skilled labour and materials, transportation costs were major deterrents to sustainability practices. Sustainability is definitely an oxymoron, yet its pursuit should never be stopped as future relies on current generation so that their future needs are met. More research on sustainable materials and availability of the expertise to common man is need of the hour.

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# Fintech Driven Customer Centric Innovations in Banking

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## Abstract

*Fintech-driven customer-centric innovations are transforming the banking industry, offering personalized, accessible, and seamless financial services. This study explores how financial technology is reshaping traditional banking by focusing on customer needs and preferences. Key innovations include AI-powered personalization, digital-only banking platforms (neobanks), and mobile payment solutions, all of which enhance customer experience by offering tailored products, faster services, and greater convenience. Additionally, fintech has expanded financial inclusion by reaching underserved populations and fostering trust through transparent, user-friendly interfaces. As banks increasingly integrate these technologies, they are not only meeting but also anticipating customer demands, positioning themselves competitively in a rapidly evolving financial landscape.*

*Keywords: Fin tech, Customer centricity, Innovations in Banking*

## Introduction

The rise of financial technology (fintech) has significantly transformed the banking industry, shifting the focus from traditional product-centric models to customer-centric innovations. Fintech companies, leveraging advanced technologies such as artificial intelligence (AI), machine learning, blockchain, and big data analytics, have introduced new financial products and services that are highly personalized, convenient, and accessible. This shift has compelled traditional banks to adopt similar innovations to stay competitive and relevant in an increasingly digital landscape. As a result, banks are now prioritizing customer experience, offering products and services that align more closely with the evolving needs and preferences of their customers.

Customer-centric innovation in banking, driven by fintech, has revolutionized how financial services are delivered. Digital-only banks, or neobanks, have emerged as key players, offering streamlined, user-friendly interfaces and low-cost banking solutions that are accessible from anywhere. These platforms provide a range of services, from mobile banking and real-time payments to personalized financial advice, all tailored to meet individual

customer needs. Additionally, AI-driven technologies enable banks to analyze customer data in real-time, allowing for the creation of customized financial products, targeted marketing, and proactive customer service, further enhancing the overall customer experience.

The integration of fintech into banking has also expanded financial inclusion, bringing services to previously underserved populations. By leveraging digital platforms and mobile technology, fintech innovations have made banking more accessible to people in remote areas, those with lower incomes, and individuals without traditional banking relationships. This democratization of financial services not only benefits customers but also opens new markets for banks, driving growth and innovation. As fintech continues to evolve, the emphasis on customer-centricity in banking is expected to deepen, with banks increasingly adopting innovative strategies to meet and exceed customer expectations in the digital age.

## **Review of Literature**

Fintech, short for financial technology, has significantly influenced the banking industry by offering customer-centric innovations that prioritize convenience, accessibility, and personalized services. According to Gomber, Kauffman, Parker, and Weber (2018), fintech has transformed traditional banking by introducing digital payment systems, peer-to-peer lending platforms, and robo-advisors, enhancing customer experiences through faster and more efficient services.

The rise of digital banking, driven by fintech advancements, has reshaped customer expectations. Pousttchi and Dehnert (2018) highlight that digital banking platforms offer personalized services, such as AI-driven financial advice and real-time customer support, which improve customer satisfaction and retention. The integration of fintech in banking has led to the development of mobile banking apps and digital wallets, allowing customers to manage their finances seamlessly.

Artificial intelligence (AI) and machine learning (ML) are pivotal in creating customer-centric banking solutions. As per Chen, Wu, and Yang (2019), AI-driven chatbots and virtual assistants provide instant customer support, while ML algorithms offer personalized product recommendations based on individual customer data. This shift towards AI-powered banking has not only enhanced customer engagement but also optimized operational efficiency.

Fintech has driven the creation of customer-centric products that cater to specific financial needs. According to Philippon (2016), fintech startups have developed innovative

products like microloans, which are tailored for underserved populations. These products have forced traditional banks to adopt similar approaches, focusing more on the needs and preferences of their customers.

### **Research Gap**

While the literature extensively covers the impact of fintech on enhancing customer-centric innovations in banking, there remains a significant gap in understanding the long-term sustainability and scalability of these innovations. Most existing studies, such as those by Gomber et al. (2018) and Pousttchi and Dehnert (2018), focus on the immediate benefits of fintech integration, including improved customer experiences and operational efficiency. However, there is limited research on how these innovations will evolve with changing customer expectations and regulatory landscapes. Additionally, the implications of widespread fintech adoption on traditional banking structures and their ability to adapt to these technological changes over time are underexplored.

Another area lacking thorough investigation is the differential impact of fintech-driven innovations across various demographic groups and regions. Although some studies, like those by Philippon (2016) and Zalan and Toufaily (2017), highlight the potential of fintech to increase financial inclusion, there is little empirical evidence on how effectively these innovations serve diverse customer bases, particularly in underserved or emerging markets. Moreover, the role of cultural, socio-economic, and regulatory factors in shaping the success or failure of customer-centric fintech solutions remains inadequately addressed. This gap suggests the need for more comprehensive, longitudinal studies that consider these variables to develop a deeper understanding of fintech's role in transforming customer relationships in the banking sector.

### **Objectives of the study**

1. To Explore the Role of Fintech in Enhancing Financial Inclusion.
2. To Explore the Sustainability and Scalability of Fintech Innovations.
3. To Analyze the Impact of Fintech on Customer Experience in Banking:
4. To Identify the Challenges and Opportunities in Fintech Integration:

## Research Methodology

The research methodology for studying fintech-driven customer-centric innovations in banking involves a multi-faceted approach combining both qualitative and quantitative methods. Initially, a comprehensive literature review will be conducted to identify key trends, frameworks, and previous studies related to fintech innovations and customer-centric strategies in the banking sector. This will be followed by a qualitative analysis through in-depth interviews with industry experts, including fintech developers, banking professionals, and customer experience specialists, to gain insights into the practical applications and impact of these innovations. Additionally, a quantitative survey will be administered to a sample of banking customers to assess their perceptions, usage patterns, and satisfaction levels with fintech-enabled services. Data collected will be analyzed using statistical tools to identify correlations between fintech innovations and customer satisfaction, loyalty, and retention. The mixed-method approach will provide a comprehensive understanding of how fintech-driven innovations are reshaping customer experiences in the banking industry.

## Analysis and Result

Comparative table of fintech-driven customer-centric innovations of major public and private sector banks in India:

Aspect	Public Sector Banks (e.g., SBI, PNB)	Private Sector Banks (e.g., HDFC Bank, ICICI Bank)
Digital Banking Platforms	YONO by SBI, PNB One	HDFC Bank's PayZapp, ICICI's iMobile Pay
Mobile Banking Applications	Basic features, slower UI/UX improvements	Advanced features, frequent updates, and superior UI/UX
Instant Account Opening	Limited to specific products like savings accounts	Comprehensive across various account types, including loans and FD
Payment Innovations	UPI-based apps, RuPay card integration	UPI apps, support for multiple payment wallets, International cards
Loan Disbursal Automation	Primarily manual, with some automated processes	Fully automated, quick loan approval via digital platforms
AI & Chatbot Services	Basic AI-driven chatbots (e.g., SBI's SIA)	Advanced AI chatbots with personalized recommendations
Blockchain Integration	Pilot projects and limited integration	Extensive use in trade finance and cross-border payments
Customer Onboarding	E-KYC with manual checks	End-to-end digital onboarding with biometric verification
Personalized	Standardized offerings with	Highly personalized products based on

Aspect	Public Sector Banks (e.g., SBI, PNB)	Private Sector Banks (e.g., HDFC Bank, ICICI Bank)
Financial Products	minimal customization	customer data analysis
Cybersecurity Measures	Regular security protocols	Advanced multi-layered security, frequent updates, and AI-driven threat detection
Wealth Management Services	Basic mutual funds and government bonds	Integrated wealth management platforms with robo-advisory services
Customer Loyalty Programs	Basic loyalty programs linked to banking products	Comprehensive loyalty programs with partnerships across industries
Fintech Partnerships	Few collaborations with fintech startups	Extensive collaborations with fintech startups for innovative products
Cross-selling Strategies	Traditional methods with limited digital support	Data-driven cross-selling via digital platforms and AI algorithms
Rural and Financial Inclusion	Extensive reach with basic digital solutions	Focused programs with advanced mobile solutions for financial inclusion

This table provides a general overview, and there might be variations depending on the specific strategies and innovations of individual banks.

### Impact

Fintech-driven customer-centric innovations have profoundly impacted the banking industry by reshaping how financial services are delivered and consumed. These innovations have introduced a range of digital solutions, such as mobile banking apps, digital wallets, AI-driven financial advisory services, and blockchain-based secure transactions, which have collectively enhanced the convenience, personalization, and accessibility of banking services. As a result, customer experiences have significantly improved, with faster service delivery, better financial management tools, and tailored products that meet specific needs. Moreover, fintech has played a crucial role in promoting financial inclusion by providing underserved populations with access to essential banking services. This transformation has not only increased customer satisfaction and loyalty but also challenged traditional banks to innovate and adapt to the rapidly changing financial landscape.

### Recommendations

#### 1. Enhance Personalization Through Data Analytics:

- Banks should leverage advanced data analytics and AI to offer personalized financial products and services. By analyzing customer behavior and preferences, banks can provide tailored recommendations, targeted marketing,

and customized financial solutions, thereby enhancing customer satisfaction and engagement.

**2. Invest in Robust Cybersecurity Measures:**

- To address the increasing risks associated with digital banking, banks must invest in cutting-edge cybersecurity technologies and practices. Implementing strong encryption, multi-factor authentication, and regular security audits will protect customer data and build trust in fintech-driven innovations.

**3. Foster Strategic Partnerships with Fintech Startups:**

- Banks should consider forming strategic partnerships with fintech startups to integrate innovative technologies and solutions into their existing platforms. These collaborations can accelerate the development of new services, enhance operational efficiency, and provide access to cutting-edge fintech expertise.

**4. Prioritize Financial Inclusion Initiatives:**

- Banks should focus on developing fintech solutions that cater to underserved and low-income populations. By creating accessible and affordable financial products, such as microloans and digital wallets, banks can promote financial inclusion and expand their customer base.

**5. Adopt Agile Methodologies for Innovation:**

- Embrace agile methodologies to rapidly develop, test, and deploy fintech-driven innovations. This approach allows banks to respond quickly to market changes, customer feedback, and emerging technologies, ensuring that their offerings remain competitive and relevant.

**6. Enhance Customer Education and Support:**

- Provide comprehensive customer education and support to help users effectively navigate new fintech tools and services. This includes offering tutorials, customer service resources, and proactive assistance to ensure a smooth transition and maximize the benefits of fintech innovations.

### **Originality and Value of the study**

**Originality:** This study on "Fintech-Driven Customer-Centric Innovations in Banking" stands out by offering a comprehensive analysis of how emerging fintech technologies are reshaping customer experiences and expectations in the banking sector. Unlike existing research that often focuses on isolated aspects of fintech or general technological

advancements, this study integrates various dimensions of fintech innovations, including AI, blockchain, and digital platforms, to present a holistic view of their impact on customer-centric banking. Additionally, by exploring the long-term sustainability and scalability of these innovations, as well as their differential impact across diverse demographic and regional contexts, the study addresses gaps in current literature and provides new insights into the broader implications of fintech adoption.

**Value:** The value of this study lies in its practical relevance and actionable insights for banking institutions and fintech companies. By identifying the key drivers and challenges of fintech integration, the study offers strategic recommendations for banks to enhance their customer-centric approaches and maintain a competitive edge. It provides valuable information on leveraging fintech to improve financial inclusion, address security concerns, and personalize customer interactions. Moreover, the study's focus on demographic and regional variations contributes to a deeper understanding of how fintech solutions can be tailored to meet diverse needs, thereby supporting more effective and inclusive banking practices. This research not only enriches academic discourse but also serves as a practical guide for industry stakeholders seeking to navigate the evolving landscape of digital banking.

## Practical Implications

### 1. Improved Customer Engagement and Satisfaction:

- By adopting fintech-driven innovations, banks can significantly enhance customer engagement and satisfaction. Technologies such as AI-driven chatbots, personalized financial recommendations, and seamless mobile banking apps allow banks to offer more responsive, efficient, and customized services. This leads to a more satisfying customer experience, increased loyalty, and a stronger competitive position in the market.

### 2. Enhanced Financial Inclusion:

- Fintech innovations have the potential to broaden access to banking services, particularly for underserved populations. Digital wallets, microloans, and mobile banking solutions can provide financial services to individuals in remote or underserved areas, promoting greater financial inclusion and expanding the customer base for banks.

### **3. Increased Operational Efficiency:**

- The integration of fintech technologies can streamline banking operations, reduce costs, and improve efficiency. Automated processes, such as AI-driven transaction monitoring and blockchain-based payment systems, can minimize manual intervention, lower operational costs, and reduce errors, leading to more efficient banking operations.

### **4. Strengthened Security Measures:**

- With the rise of digital banking, robust cybersecurity measures are essential. Implementing advanced security technologies such as encryption, biometric authentication, and real-time fraud detection systems can protect customer data and build trust. Banks must prioritize cybersecurity to safeguard against potential threats and ensure a secure banking environment.

### **5. Strategic Partnerships and Innovation:**

- Banks can benefit from forming strategic partnerships with fintech startups to access new technologies and innovative solutions. Collaborations can accelerate the development and deployment of new financial products and services, allowing banks to stay at the forefront of technological advancements and meet evolving customer demands.

### **6. Tailored Financial Products and Services:**

- Utilizing data analytics and customer insights, banks can develop tailored financial products and services that address specific needs and preferences. Personalized offerings, such as customized investment advice or targeted loan products, can enhance customer satisfaction and drive greater adoption of banking services.

By addressing these practical implications, banks can effectively leverage fintech-driven innovations to enhance their customer-centric strategies, improve operational efficiency, and maintain a competitive edge in the evolving financial landscape.

## **Conclusions**

Fintech-driven customer-centric innovations have revolutionized the banking industry by enhancing service delivery, personalization, and accessibility, fundamentally reshaping customer experiences. The integration of advanced technologies such as AI, blockchain, and mobile platforms has enabled banks to offer more tailored, efficient, and secure financial services, thereby meeting the evolving needs and expectations of consumers. This



transformation not only improves customer satisfaction and financial inclusion but also presents new opportunities and challenges for banks in terms of operational efficiency, regulatory compliance, and strategic partnerships. As the fintech landscape continues to evolve, banks must remain agile, embrace innovation, and continuously adapt to sustain their competitive advantage and effectively address the diverse needs of their customers.

### Limitations of the study

1. Limited Longitudinal Data
2. Scope of Technological Coverage
3. Variability in Regional and Demographic Contexts
4. Data Availability and Quality
5. Regulatory and Compliance Constraints
6. Technological Adoption Variability

### Scope for Future Research

Future research on fintech-driven customer-centric innovations in banking could explore several promising areas to build on existing findings. Investigating the long-term effects and sustainability of fintech solutions will be crucial to understanding their enduring impact on customer behavior and banking operations. Additionally, examining a broader range of emerging technologies and their integration into the fintech ecosystem could provide a more comprehensive view of innovative trends. Research could also focus on the influence of regional and demographic differences on fintech adoption and effectiveness, offering insights into how varying regulatory, cultural, and infrastructural contexts shape the success of these innovations. Furthermore, studies could delve into the evolving regulatory landscape and its implications for fintech integration, addressing how banks can navigate compliance challenges. Lastly, exploring the variability in technological adoption among different institutions and customer segments will help refine strategies for effective fintech implementation and enhance overall customer satisfaction.

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# A Study of Challenges and Opportunities of Application Usage on Iphone A Special Focus on Chennai City

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## Abstract

*The usage of mobile applications in iPhones has become increasingly popular in recent years. While there are some challenges that users face while using these applications, such as slow loading times and frequent crashes, there are several prospects of application usage as well. With the growing number of smartphone users in Chennai city, there is a huge potential for businesses to reach out to their target audience through mobile applications. Additionally, with the advancements in technology, there are several new features and functionalities being introduced in mobile applications digitally, that can enhance the user experience. This abstract focuses on exploring the problems and prospects of application usage in iPhones with special reference to Chennai city.*

*Keywords: Problems, mobile applications, iPhone, prospects.*

## Introduction

The advent of smartphones and iPhones has revolutionized the way we interact with technology. With the vast array of applications available for download, users can perform a multitude of functions, from communication to entertainment, education, and shopping. This has made applications an essential part of our daily lives, particularly in cities like Chennai, where technology is an integral part of people's daily routines. However, with the increasing usage of applications, there are also several challenges and prospects associated with their usage in Chennai. These challenges include problems related to device compatibility, network connectivity, security, and privacy concerns. At the same time, the prospects of using applications in iPhones are numerous, including increased efficiency, productivity, and convenience. In this paper, we will explore the problems and prospects of application usage in iPhones in Chennai city. We will analyze the unique challenges faced by users in this region and suggest ways to address them to improve the overall user experience. Additionally, we will discuss the potential benefits of using applications in iPhones, which can enhance the quality of life for users in Chennai city.

## Objective of the Study

The objectives of studying the problems and prospects of application usage in iPhone with special reference to Chennai city are:

1. To identify the most popular iPhone applications used in Chennai city.
2. To determine the challenges faced by iPhone users in Chennai city while using applications.
3. To evaluate the prospects of the market for iPhone applications in Chennai city.
4. To analyze the impact of iPhone applications on the lifestyle of people in Chennai city.

## Review of Literature

The use of mobile applications has become increasingly popular in recent years, with the iPhone being one of the most widely used devices for this purpose. In Chennai city, there has been a significant increase in the usage of mobile applications among the younger generation. However, there are also several problems and challenges associated with the use of these applications in the city. One of the major problems faced by iPhone users in Chennai is the high Cost of data plans and internet usage. This has resulted in a significant number of users being unable to access or use applications due to the high cost of data plans. Additionally, there is also a lack of awareness and knowledge among users about the various features and functionalities of different applications.

On the other hand, there are several prospects and benefits of using applications on an iPhone in Chennai. For instance, the use of applications has made it easier for people to access various services and products, such as online shopping, food delivery, and transportation. Additionally, the use of applications has also helped in streamlining several processes, such as bill payments and booking appointments.

In terms of the literature review, several studies have been conducted on the usage of mobile applications in different contexts. These studies have highlighted the various benefits and challenges associated with the use of applications. For instance, a study conducted by Kuznekoff and Titsworth (2013) found that the use of mobile applications has a positive impact on academic performance among college students. Similarly, a study conducted by Kim and Lee (2015) found that the use of mobile applications has a positive impact on the quality of life among elderly individuals.

Overall, while there are several challenges associated with the use of applications on an

iPhone in Chennai, the benefits and prospects of using these applications are also significant. As such, it is important for users to be aware of these challenges and take steps to overcome them, while also making the most of the benefits and opportunities offered by these applications.

### Hypothesis

The hypothesis for "problems and prospects of application usage on iPhone with special reference to Chennai city" could be that there are unique challenges and opportunities associated with using iPhone applications in Chennai. This hypothesis could explore the specific problems and potential benefits of iPhone applications in addressing the city's needs, and how factors such as cultural norms, socioeconomic status, and geographic location influence their adoption and usage. The hypothesis could contribute to a better understanding of the challenges and opportunities of using iPhone applications in Chennai and provide insights into how stakeholders can work together to maximize the benefits of these applications while minimizing the risks and challenges associated with their usage.

### Research Methodology

The research methodology implemented involved surveying to gather data on the problems and prospects of application usage in iPhones within Chennai City. A single global rating method was utilized to frame the questions in the survey. The data used for analysis were purely extracted from primary sources. A structured questionnaire consisting of 15 questions was circulated among 100 current iPhone users. The survey was conducted through Google Forms, and the responses were collected and analyzed using percentage analysis.

### Analysis

#### 1). Identification of most popular iPhone applications used in Chennai city

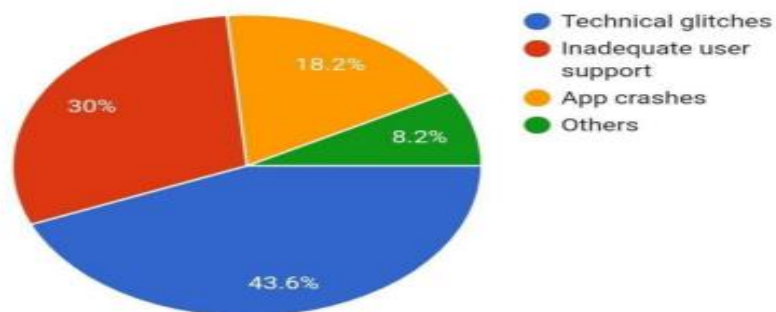
Category no. of. Respondance percentage		
Social media (e.g.: Facebook, Instagram)	53	52.48
Productivity apps (e.g., MS. Office)	16	15.84
Entertainment apps (e.g., Netflix, Spotify)	18	17.82
Communication apps (e.g., WhatsApp, zoom)	14	13.86
Total	101	100



First, social media applications have major values of **52.84%**, entertainment apps of **17.82%**, thirdly productivity apps have **15.84%**, and finally communication apps have **13.86%** of people goes for these applications.

## 2). Determination of Challenges Faced By Iphone Users in Chennai City

CATEGORIES	NO.OF. RESPONDANCE	PERCENTAGE
Technical glitches	43.6	44
Inadequate user support	30	30
App crashes	18.2	18
Others	8.2	8
Total	100	100

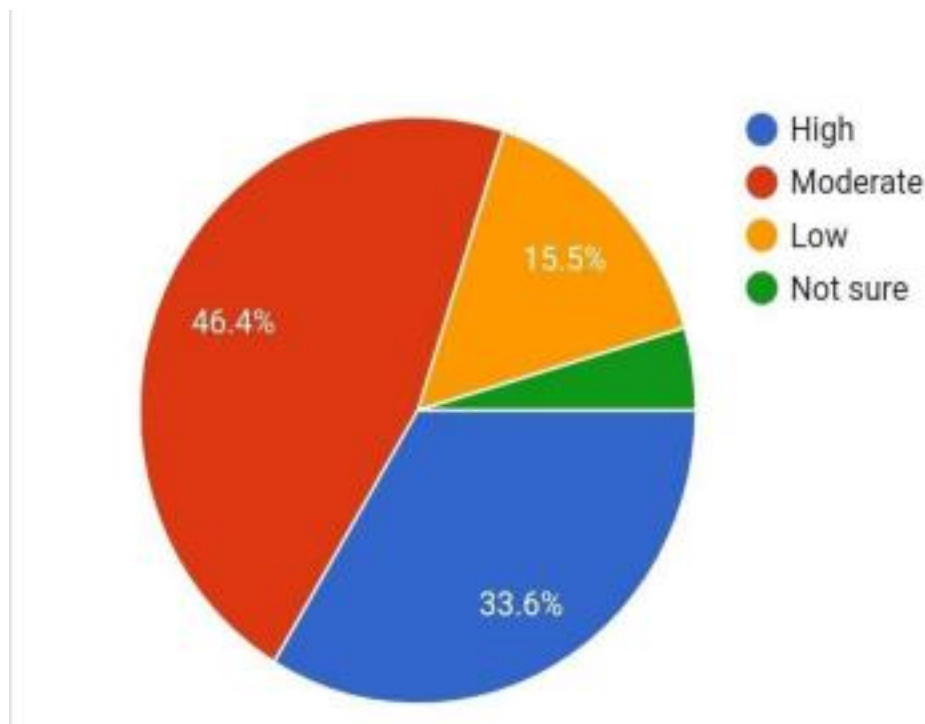


A total number of 100 people go with technical glitches (44%), Inadequate user

support (30%), App crashes (18%) and others (8%) are faced with the challenges in iPhone applications.

### 3). Ratings Of The Current Demand For Iphone Application In hennai City:

PARAMETERS	NO.OF. RESPONDANCE	PERCENTAGE
High	33.6	35.18
Moderate	46.4	48.59
Low	15.5	16.23
Not sure	0	0
Total	95.5	100

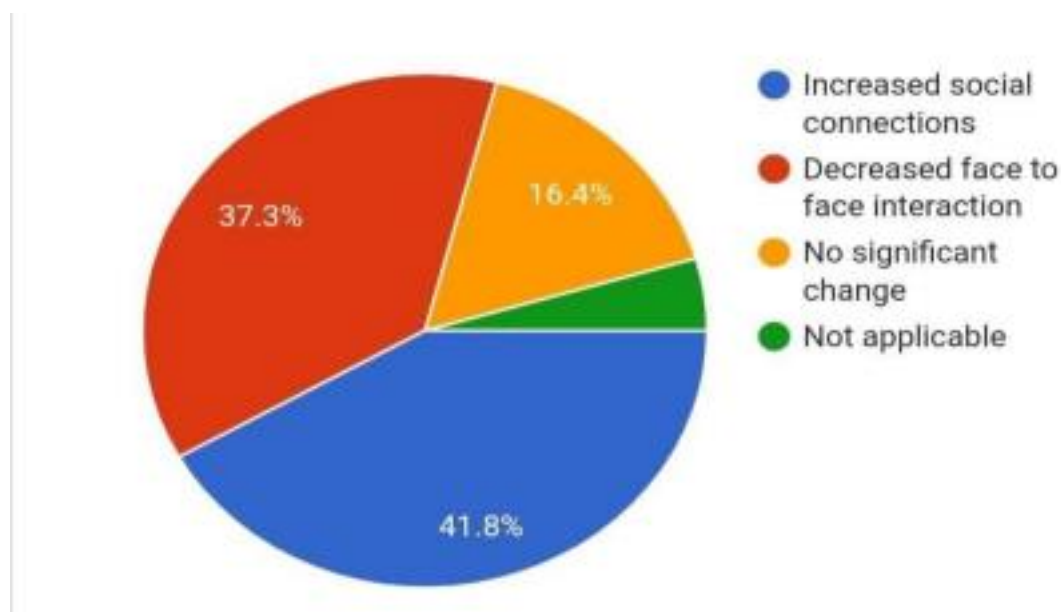


Here, **48.59%** of people responded to moderate rate of demand, **35.18%** of people responded high rate of demands and **16.23%** of people responses to low rate of demand at present.



#### 4). Analysing An Impact Of Iphone Application On Lifestyle Of Chennai People

CATEGORIES	NO.OF. RESPONDANCE	PERCENTAGE
Increased social connections.	41.8	42.01
Decreased face to face interactions.	37.3	37.49
No significant change.	16.4	16.48
Others.	4	4.02
Total	99.5	100



Impact of iPhone applications on lifestyle of Chennai people represents **42.01%** of people choose Increased social interactions, **37.49%** of people choose decreased face to face interactions, **16.48%** of people chosen no significant change and **4.02%** of people choose Not applicable.

## Findings

- Moreover, the most popularized application on iPhone is social media applications.
- Many people faced the challenges in technical glitches on iPhone applications.
- The current rate of demands for iPhone applications in Chennai city is at Moderate level.
- An iPhone application impacts on lifestyle of Chennai peoples is in increased social interactions.

## Suggestions

**Based on the findings, the following suggestions can be made:**

1. Developers should focus on addressing technical glitches and providing adequate user support to improve the user experience of iPhone applications in Chennai.
2. More emphasis should be placed on developing productivity and communication applications that cater to the specific needs of Chennai users.
3. There should be a concerted effort to promote the use of iPhone applications among the general population in Chennai, especially those who may not be familiar with the technology.
4. Users should be aware of the potential impact of iPhone applications on their lifestyle and take steps to ensure that they strike a balance between virtual and face-to-face interactions.
5. Further research should be conducted to explore the factors that influence the adoption and usage of iPhone applications in Chennai, including cultural norms, socioeconomic status, and geographic location.

## Conclusion

In conclusion, the suggestions provided above offer a comprehensive approach to improving the adoption and usage of iPhone applications in Chennai. By addressing technical issues, developing applications that cater to local needs, promoting usage among the general population, and encouraging users to strike a balance between virtual and face-to-face interactions, developers can enhance the overall user experience. Further research into the cultural and socioeconomic factors that influence adoption can also provide valuable insights for future development and marketing strategies.

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# Evaluating Credit Risk Management and Its Impact on Asset Quality: A Case Study of Urban Co-Operative Banks

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## Abstract

*This study focuses on the relationship between credit risk management practices and asset quality in the banking sector, with a particular focus on urban co-operative banks (UCBs). The study aims to understand how differences in credit risk management practices impact the asset quality and financial stability of UCBs. The research methodology involves an examination of credit risk management practices, including credit risk identification, measurement, control, and monitoring, across UCBs categorized based on their Non-Performing Asset (NPA) levels. Based on statistical analysis using independent t-test and one-way ANOVA, the study finds significant differences in credit risk management practices between UCBs with low and high NPAs. The results of this study highlight the important role of credit risk management practices in influencing asset quality in the banking sector, particularly in Urban Cooperative Banks (UCBs). Effective identification, measurement, control, and monitoring of credit risk is essential to mitigate credit-related risks, and maintaining financial stability.*

*Keywords: Credit risk management practices, Asset quality, Urban Co-operative Banks*

## Introduction

The banking sector plays a pivotal role in the economy by channeling funds from savers to borrowers, facilitating economic growth and development (A. A. AlZoughool et al., 2020; Kharche & Gupta, 2023). Central to the operations of banks is the management of credit risk, which involves identifying, measuring, controlling, and monitoring risks associated with lending activities. Effective credit risk management is crucial for maintaining sound asset quality, ensuring financial stability, and safeguarding against potential losses.

With a particular focus on Urban Cooperative Banks (UCBs), this study examines the impact of credit risk management practices on asset quality within the banking sector. UCBs represent a significant segment of the banking industry, catering to the financial needs of urban and semi-

urban areas, and their performance directly impacts economic resilience and stability (Sinha, n.d.). Urban Cooperative Banks (UCBs) possess a distinctive organizational structure that renders them highly effective in aiding the financial inclusion of the urban poor, and, this sector will necessitate particular focus in the coming years (The Institute of Chartered Accountants of India, 2013).

The relationship between credit risk management practices and asset quality is a critical aspect of banking operations and financial stability. Effective credit risk management practices play a crucial role in determining the level of asset quality within a bank (Sharifi, 2019). When credit risk management practices are efficient and proactive, they contribute to maintaining a healthy loan portfolio and minimizing non-performing assets (NPAs) or bad loans. On the other hand, poor credit risk management can lead to a deterioration in asset quality, increased NPAs, and potential losses for the bank.

### Objectives of the Study

- To analyse the credit risk management practices of Urban Co-operative Banks
- To examine the impact of credit risk management practices of Urban Co-operative Banks on asset quality

### Review of Literature

Previous studies have extensively explored credit risk management practices in the banking sector, highlighting the importance of robust risk identification, measurement, control, and monitoring strategies.

Research by (Fatemi & Fooladi, 2006) investigated the credit risk management practices employed by the largest financial institutions based in the US. The study found that the primary purpose of the credit risk models used by the largest US-based financial institutions is to identify counterparty default risk and only a minority of banks currently employ either proprietary or vendor-marketed models for credit risk management.

(Brahmaiah, 2022) examined the credit risk management techniques and practices employed by Indian commercial banks from 2017-2021, and compared the risk management practices between public sector banks and private sector banks. The study revealed that the credit risk management process encompasses risk identification, assessment, analysis, evaluation,

monitoring, and control, and found that private sector banks (PVBs) have superior credit risk management practices compared to public sector banks (PSBs).

(Srikanth & Kishore, 2014) critically evaluated the credit risk environment in Indian banks. The research used ratio analysis on time series data to assess credit risk management in Indian banks across various credit risk metrics. The findings indicate that Indian banks are well-capitalized to withstand shocks under the Basel III framework. Additionally, it is observed that Indian banks demonstrate stability in financial health parameters, including asset quality, cost efficiency, and earnings levels.

(Arora, 2021) evaluated the effectiveness of various credit risk management practices in Indian public sector banks by statistically analyzing the perceptions of their credit analysts. A thorough and systematic review of CRM systems in these banks revealed that the most effective CRM practices include: awareness of other banks' risk management strategies, a robust loan appraisal and review process, adherence to Know Your Customer (KYC) norms, a multi-tiered credit approval process, risk-based appraisals, and comprehensive measures to control wilful defaults.

(Sharifi, 2019) aimed to explore how various components of credit risk affect the effectiveness of credit risk management and the increase in non-performing assets (NPAs) in Indian commercial banks. The findings indicate that identifying credit risk significantly impacts credit risk performance. The results show a negative relationship between credit risk identification and the annual growth in NPAs or loans.

## **Methodology**

This research used both primary data and secondary data for analysis. The primary data was gathered via structured questionnaires that were completed by the General Managers of the fourteen selected UCBs. Fourteen UCBs were selected based on data availability. The questionnaire was adapted from the questionnaires of past studies such as (Alamelumangai & Scholar, n.d.; Hassan Al-Tamimi & Mohammed Al-Mazrooei, 2007; Kaimuri Evelyn & Mwangi, 2016). The questionnaire focused on examining how banks manage credit risk, with questions rated on a five-point scale. The questionnaire's data reliability was assessed using Cronbach's Alpha coefficients. Descriptive statistics outlined sample characteristics, and a One Way ANOVA test was used to identify statistical differences in credit risk management

practices among selected banks. Assumptions vital for ANOVA, like normality, variance homogeneity, and observation independence, were confirmed with the sample data meeting these criteria. Additionally, a post hoc analysis pinpointed banks making statistically significant differences within the group.

This research utilized secondary data to assess asset quality. This data was obtained from the audited financial statements of chosen UCBs, covering a period of ten years from 2012-13 to 2021-22. An independent samples t-test was employed to compare UCBs based on asset quality, and checks were made to make sure that assumptions like normality and variance homogeneity were met by the sample data.

## Results and Discussion

### Credit Risk Management Practices

Effective credit risk management practices are indispensable for banks to manage complex lending activities, mitigate potential risks, and maintain asset quality, contributing to overall financial stability and sustainable growth in the banking sector. The key components of credit risk management practices are credit risk identification, credit risk measurement, credit risk control, and credit risk monitoring.

### Credit Risk Identification

As per the consultative paper issued by the Basel Committee on Banking Supervision (Basel, 1999), banks must acquire sufficient information to comprehensively assess the true risk profile of borrowers or counterparties. Factors to be considered and documented when approving credits vary based on the type of credit exposure and the existing credit relationship. These factors include the purpose of the credit and repayment sources, the borrower's current risk profile and repayment history, their current ability to repay, the terms and conditions of the credit being proposed, the sufficiency and enforceability of collateral or guarantees, financial status of borrowers, and credit score or grade of borrowers.

In the selected UCBs all these factors are crucial in identifying credit risk, with particular emphasis placed on the sufficiency and enforceability of collateral or guarantees during this process. The overall mean score for credit risk identification practices is 4.38 with a standard deviation of 0.66. The mean score across all the banks is 4.38 with a standard deviation of 0.54 which indicates that the majority of the banks extensively evaluate all factors in identifying credit risk.

### **Credit Risk Measurement**

Credit risk measurement helps make informed credit decisions, set appropriate risk premiums, allocate capital efficiently, comply with regulations, and maintain a healthy credit portfolio. Additionally, it helps identify and address potential credit vulnerabilities, thereby contributing to the stability of the financial system. Credit risk measurement items included in the questionnaire were assessing the likelihood of occurring risks, use of quantitative analysis methods, use of qualitative analysis methods, assessment of the costs and benefits of addressing risks, prioritizing of risks, and selecting those that need active management.

The overall mean score for credit risk measurement strategies is 4.19 with a standard deviation of 0.95, indicating a generally high level of effectiveness and consistency in credit risk measurement practices in the selected UCBs. Among the credit risk measurement strategies, prioritizing of risks, and selecting those that need active management has the highest mean score. The average score among all banks is 4.19, with a standard deviation of 0.94, suggesting a moderate degree of variability in credit risk measurement practices among the surveyed banks.

### **Credit Risk Control**

Controlling credit risk is critical to managing potential financial losses due to loan defaults and impacts asset quality, profitability, and stability. Effective controls include strategies, policies, and mechanisms to proactively assess, monitor, mitigate, and manage credit-related risks. This study aims to assess the degree to which the selected banks adhere to credit risk control measures such as training bank staff on risk control, ascertaining the value of collateral, following a secured loan banking system, penalties upon default, ensuring the loan is used for the intended purpose, and ensuring the adequacy of provisions.

Descriptive statistics show that the selected UCBs have an overall mean score of 4.12 for credit risk control measures, with a standard deviation of 0.81, indicating a strong perception of their importance. Ensuring loans are used for their intended purpose has the highest mean score. Across banks, the mean score remains 4.12, with a standard deviation of 0.62.

### **Credit Risk Monitoring**

Credit risk monitoring encompasses ongoing assessment, analysis, and tracking of credit exposures to identify potential risks and enable timely implementation of mitigation strategies.



This practice is essential for maintaining asset quality, preserving capital, and protecting against financial losses. Variables of credit risk monitoring measures considered for the study are continuous monitoring of cash flows of borrowers, constant contact with borrowers, review of clients' loan repayment pattern, supporting distressed borrowers, frequent loan classification/provisioning, and revising credit risk control and appraisal measures.

The average score across all measures is 3.93, with a standard deviation of 0.85, indicating a generally positive perception of the effectiveness of credit risk monitoring measures. Overall, constant contact with borrowers, frequent loan classification/provisioning, and reviewing clients' loan repayment patterns are considered especially effective for monitoring credit risk. Conversely, there may be room for improvement or more variability in the effectiveness of supporting distressed borrowers and revising credit risk control measures. The overall mean score across the banks is 4.12 with a standard deviation of 0.62.

**Table 1. Result of ANOVA Test for testing significance of difference in credit risk management practices among selected UCBs**

*H<sub>0</sub>: There is no significant difference in credit risk management practices among selected UCBs*

Variables	Labels	SS	df	MS	F	Sig.
Credit Risk Identification	Between Groups	24.866	13	1.913	5.575	0.000*
	Within the Groups	33.625	98	0.343		
	Total	58.491	111			
Credit Risk Measurement	Between Groups	28.986	13	2.23	3.951	0.000*
	Within the Groups	31.6	56	0.564		
	Total	60.586	69			
Credit Risk Control	Between Groups	21.905	13	1.685	4.423	0.000*
	Within the Groups	26.667	70	0.381		
	Total	48.571	83			
Credit Risk Monitoring	Between Groups	37.24	13	2.864	5.840	0.000*
	Within the Groups	34.33	70	0.49		
	Total	71.57	83			

(Source: Computed from primary data)

\* 5 percent level of significance

The ANOVA test results in Table 1 show that there are significant differences in credit risk management practices among the selected UCBs. The null hypothesis, which states that there is no significant difference in credit risk management practices among the selected UCBs, is rejected for all the variables tested. Overall, the ANOVA test results strongly suggest that the selected UCBs differ significantly in their approaches to credit risk identification, measurement, control, and monitoring.

### **Asset Quality**

Asset quality pertains to the condition and performance of a bank's loan portfolio and other assets. It is essential for assessing a bank's financial stability and risk management efficacy. This aspect is vital in banking operations as it indicates a bank's capacity to handle credit risk and sustain a robust loan portfolio. The key ratios examined to evaluate the asset quality of the selected UCBs in this study are Gross NPAs to Gross Advances Ratio (GNPA Ratio), Net NPAs to Net Advances Ratio (NNPA Ratio), Provisions Held to Gross Advances Ratio, and Provisions Held to Gross NPAs Ratio. According to the Supervisory Action Framework (SAF) for UCBs, if a UCB's Gross NPAs exceed ten percent of its advances, or if there is an increase of three percentage points in Gross NPAs over each of the last two consecutive years, whichever occurs first, or when its Net NPAs exceed six percent of its net advances, the UCB is required to submit an action plan for NPA recovery.

The average GNPA Ratio for the majority of the banks remains below ten percent, and the average NNPA Ratio of the majority of the banks is less than six percent, although it has exceeded this threshold in certain years. A year-by-year analysis shows that the mean GNPA Ratio rose above ten percent and the NNPA Ratio rose above six percent in the years 2019-20, 2020-21, and 2021-22, peaking in 2020-21. This increase is attributed to the impact of the COVID-19 pandemic, which began affecting the global economy at the start of 2020. The average ratio of provisions held to gross advances reached its highest point in 2020-21 and its lowest point in 2012-13. All the UCBs, except for two, have a mean provision coverage ratio below the 70 percent threshold set by the RBI, although, RBI has directed banks to maintain a Provisions Held to Gross NPAs Ratio of at least 70 percent. The average provision coverage ratio peaked in 2015-16 and was at its lowest in 2020-21.

**Table 2. Result of ANOVA Test for testing significance of difference in asset quality among selected UCBs**

*H<sub>0</sub>: There is no significant difference in asset quality among selected UCBs*

Variables	Labels	SS	df	MS	F	Sig.
Gross NPAs to Gross Advances Ratio	Between Groups	1731.865	13	133.22	3.743	0.000*
	Within the Groups	4484.444	126	35.591		
	Total	6216.309	139			
Net NPAs to Net Advances Ratio	Between Groups	1129.696	13	86.900	3.448	0.000*
	Within the Groups	3175.525	126	25.203		
	Total	4305.221	139			
Provisions Held to Gross Advances Ratio	Between Groups	368.795	13	28.369	8.885	0.000*
	Within the Groups	402.309	126	3.193		
	Total	771.104	139			
Provisions Held to Gross NPAs Ratio	Between Groups	63327.108	13	4871.32	11.768	0.000*
	Within the Groups	52158.381	126	413.955		
	Total	115485.489	139			

(Source: Author's calculation based on annual reports of UCBs under study)

\* 5 percent level of significance

The findings of Table 2 indicate statistically significant differences in the asset quality ratios among the selected UCBs, leading to the rejection of the null hypothesis that there is no significant difference in asset quality among these UCBs. In other words, there are notable differences in the asset quality of the selected UCBs, which can be attributed to various factors such as differences in loan portfolio composition, credit risk management practices, economic conditions, geographical concentration, and management practices.

To determine if the statistical difference in asset quality among the selected UCBs is due to variations in credit risk management practices, further analysis was conducted. The selected UCBs were categorized based on their mean GNPA Ratio over the five-year period from 2017-18 to 2021-22, with UCBs having a mean GNPA Ratio of less than 10 percent classified as low NPA banks, and those with more than 10 percent classified as high NPA banks. This five-year

period was chosen because the GNPA Ratio increased in most of the selected UCBs during these years. An independent t-test was then used to examine whether there are significant differences in the credit risk management practices between UCBs with low NPA and those with high NPA.

**Table 3. Result of Independent t test for testing significance of difference in credit risk management practices between UCBs with low NPA and UCBs with high NPA**

*H<sub>0</sub>: There is no significant difference in credit risk management practices between UCBs with low NPA and UCBs with high NPA*

Variables	Labels	N	Mean	SD	t	Sig.
Credit Risk Identification	UCBs with low NPA	5	4.700	0.274	2.919	0.013*
	UCBs with high NPA	9	4.197	0.325		
Credit Risk Measurement	UCBs with low NPA	5	4.760	0.219	3.086	0.009*
	UCBs with high NPA	9	3.867	0.616		
Credit Risk Control	UCBs with low NPA	5	4.500	0.389	2.298	0.040*
	UCBs with high NPA	9	3.908	0.494		
Credit Risk Monitoring	UCBs with low NPA	5	4.202	0.639	2.514	0.027*
	UCBs with high NPA	9	3.499	0.416		

Source: Computed from primary data

\* 5 percent level of significance

Table 3 presents the result of an independent t-test aimed at determining if there is a significant difference in credit risk management practices between UCBs categorized as low NPA and those designated as high NPA. The calculated p-values for credit risk management aspects like Credit Risk Identification, Credit Risk Measurement, Credit Risk Control, and Credit Risk Monitoring are below 0.05, indicating a notable difference in credit risk management practices between these two groups. Consequently, the null hypothesis is rejected. The analysis reveals that UCBs with low NPA levels demonstrate high proficiency across all dimensions of credit risk management (credit risk identification, measurement, control, and monitoring) compared to UCBs with high NPA levels. Therefore, the differences in credit risk management practices are assumed to be the cause of statistical variance in asset quality among the selected UCBs.

## Conclusion

The findings of the study indicate that the selected Urban Cooperative Banks (UCBs) demonstrate strong credit risk management practices, particularly in risk identification, measurement, control, and monitoring. These practices contribute to maintaining healthy asset quality metrics, as evidenced by significant differences in asset quality ratios among the UCBs. Furthermore, UCBs with low Non-Performing Asset (NPA) levels exhibit superior proficiency in credit risk management compared to those with high NPAs, highlighting a direct correlation between effective credit risk management and improved asset quality outcomes. The study pinpoints the importance of continuous monitoring, technological integration, and regulatory compliance to sustain robust credit risk management frameworks and ensure long-term financial stability in the banking sector.

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# Goods and Service Tax's Impact on Promoting Environmental Sustainable Development through MSME Sectors in India

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## Abstract

*Environmental sustainable development is critical in addressing global challenges such as climate change, resource depletion, and environmental degradation. This development model seeks to balance economic growth, social inclusion, and environmental protection, ensuring that the needs of the present are met without compromising the ability of future generations to meet their own needs. The Micro, Small, and Medium Enterprises (MSME) sector plays a pivotal role in this transition by adopting sustainable practices, innovating eco-friendly products, and contributing to local economies. This paper examines the contribution of the MSME sector to environmental sustainable development, highlighting its potential to drive green innovation and reduce the environmental footprint of industrial activities. MSMEs, due to their flexibility and innovative capabilities, are uniquely positioned to implement sustainable practices rapidly and effectively. They are key players in the shift towards a circular economy, where waste is minimized, and resources are reused. Furthermore, this research explores how government tax policies, particularly the Goods and Services Tax (GST), are promoting the MSME sector's efforts in environmental sustainable development. The GST framework, through tax incentives and lower rates for green products and services, encourages MSMEs to adopt environmentally friendly practices. These policies not only reduce the financial burden on MSMEs but also make sustainable options more competitive in the market. The analysis includes studies of successful MSMEs that have leveraged GST benefits to enhance their sustainability initiatives. It also provides policy recommendations to strengthen the alignment of GST with environmental goals, ensuring that tax policies effectively support the MSME sector in contributing to a sustainable future. Through this research, we aim to underscore the critical intersection of tax policy, economic growth, and environmental sustainability, advocating for robust frameworks that empower MSMEs to lead the green transition.*

*Keywords: Good and Service Tax (GST), Micro, Small, and Medium Enterprises (MSME), Sustainable Development*

## **Introduction**

Micro, small, and medium enterprises (MSMEs) are vital to the economic development of many emerging economies, acting as a primary engine of growth. Unlike large corporations, MSMEs typically need less capital to start and sustain their operations, making them more accessible for entrepreneurs with limited resources. This lower barrier to entry allows a diverse range of individuals to start businesses, contributing to a more dynamic and competitive economy. Moreover, MSMEs play a significant role in job creation across various skill levels. They are capable of providing employment opportunities not just for highly skilled professionals but also for semi-skilled and unskilled labor, thereby addressing unemployment and underemployment issues more comprehensively.

In addition to their economic impact, MSMEs are instrumental in fostering inclusive growth. These enterprises often adopt inclusive business models, which are designed to integrate low-income and marginalized groups into the value chain. By doing so, MSMEs help to bridge economic gaps and promote broader societal participation in economic activities. This inclusive approach not only benefits those directly involved but also strengthens the overall economy by creating a more equitable distribution of wealth and opportunities.

The environment is a fundamental aspect of our existence, closely tied to the activities we undertake to earn a living. Industrialization, business operations, and environmental stewardship are interconnected, and to thrive in both areas economic growth and environmental protection. We must embrace green technologies that guide us toward sustainable development. Environmental sustainability involves making eco-conscious decisions and taking actions that safeguard nature, ensuring the environment retains its ability to support life. This has become a pressing issue today, as society becomes increasingly aware of the significant impact businesses and individuals have on the natural world. Sustainability goes beyond simply reducing waste or conserving energy; it is about developing long-term processes that enable businesses to operate in a way that supports the future while preserving the planet through innovative, eco-friendly solutions.



This research aims to investigate the role of MSMEs in contributing to sustainable development in India, with a particular focus on their efforts to promote environmentally friendly or green practices. The study will also examine the government's role in facilitating this green transformation by analyzing how various GST (Goods and Services Tax) provisions are structured to support MSMEs. The GST framework plays a crucial role in incentivizing sustainability initiatives by offering tax benefits, rebates, and simplified compliance procedures for MSMEs engaging in eco-friendly practices. By investigating the interplay between MSMEs' sustainability efforts and government policies, this research aims to highlight the effectiveness of these initiatives and suggest potential improvements for fostering long-term sustainable development in India.

This elaborated version provides a comprehensive overview of the research focus, emphasizing the contributions of MSMEs to sustainability and the government's supportive role through the GST framework. To accomplish this, the researcher formulated the following research questions:

1. What specific sustainable or green practices are MSMEs adopting to contribute to sustainable development in India?
2. What challenges do MSMEs face in implementing sustainable business practices?
3. How do GST provisions (such as tax benefits, rebates, and compliance procedures) influence the adoption of sustainable practices by MSMEs?
4. Are MSMEs aware of the GST incentives available for promoting green development, and how do they utilize these benefits?
5. How effective are current government policies, particularly GST-related incentives, in promoting sustainable development within the MSME sector?

## Literature Review

Small and Medium Enterprises (SMEs) have been considered as the primary growth driver of the Indian economy for decades Ibrahim Siddiq (2021). the role of the government, specifically through the Goods and Services Tax (GST) framework, in supporting MSMEs' transition towards sustainable development remains underexplored. Goods and Services Tax (GST) is an indirect tax which was introduced in India on 1 July 2017 and was applicable throughout India which replaced multiple cascading taxes levied by the central and state governments. It's true that GST means 'Great Step towards Transformation', 'Great Step

towards Transparency' in India and it is also true that someone gives 'birth' while someone else 'nurtures it' M. Jayalakshmi & G.Venkateswarlu (2018). GST levied only on consumption of goods or services. This leads to eliminate economic distortions in taxation amongst states and also helps in free movement of goods, further it also minimize the complexity of taxation Dr.Namita Mishra (2018). GST without tax barriers will leads to economies of scale in manufacturing industry and reduces the supply chain cost Madhu Bala (2018, March 21). Sustainability assessment, according to Hacking and Guthrie (2008), is a wide term that incorporates multiple dimensions such as environmental, economic, social, etc. Methodologies for assessing industrial sustainability have been developed by several scholars. Helleno et al. (2017) proposed a value stream mapping approach for sustainability evaluation based on sustainability indicators. Although much research has been conducted on the measurement of the environmental impact of manufacturing MSMEs, it is still an unexplored subject (Nulkar, 2014; Singh et al., 2018; Virmani et al., 2021). There is a lack of studies addressing how government policies like GST directly incentivize or support MSMEs in adopting sustainable or green practices.

### Research Objective

1. To analyze the contributions of MSMEs in promoting sustainable development in India  
This objective focuses on identifying how MSMEs integrate sustainable or green practices into their business operations, such as resource efficiency, waste management, and the adoption of renewable energy.
2. To evaluate the impact of GST provisions on supporting sustainability initiatives among MSMEs - this objective aims to assess how the GST framework, including tax incentives, rebates, and simplified compliance procedures, influences MSMEs' ability to adopt eco-friendly practices.
3. To examine the effectiveness of government policies, including GST, in encouraging sustainable growth within the MSME sector - this objective seeks to determine how well current government initiatives and GST-related policies foster long-term sustainable development in MSMEs, and identify potential areas for improvement in policy design or implementation.

## Research Methodology

This study employs a qualitative research approach to gain insights into the perspectives of experts on the contributions of MSMEs to sustainable development and the role of GST provisions in supporting these efforts. Semi-structured interviews will be conducted with 15 experts, including industry leaders, and sustainability consultants, who possess in-depth knowledge of MSMEs and their sustainability initiatives. Open-ended discussions will enable participants to share their experiences and insights freely, allowing for a more comprehensive exploration of the research questions. The study will utilize snowball sampling, where initial interviewees will recommend other experts in the field, thereby ensuring a diverse pool of participants with relevant expertise. This approach is particularly suitable for identifying knowledgeable respondents within niche areas of MSME sustainability and government policy. For data analysis, both content analysis and thematic analysis has been employed to systematically examine the qualitative data collected through interviews. Content analysis is used to categorize and quantify recurring themes related to the integration of green practices by MSMEs, while thematic analysis will help identify patterns and deeper insights concerning the influence of GST provisions and government policies on MSME sustainability efforts. The analysis will address the three main research objectives: understanding the contributions of MSMEs to sustainable development, evaluating the impact of GST on sustainability initiatives, and assessing the overall effectiveness of government policies. This methodology allows for a rich, nuanced understanding of how MSMEs and the government are contributing to sustainable growth in India.

## Result and Discussion

MSMEs in India are making meaningful contributions to sustainable development by gradually integrating eco-friendly practices into their operations. Many MSMEs are adopting resource-efficient technologies, including energy-saving equipment, and promoting waste management practices such as recycling and waste-to-energy conversion. Additionally, some MSMEs, especially in the manufacturing and agricultural sectors, are embracing renewable energy sources like solar power, driven by both environmental responsibility and cost-saving incentives. However, the pace of adoption is uneven due to limited awareness, financial constraints, and access to green technologies. MSMEs with better access to information and financial support are able to integrate sustainability practices more effectively, but smaller enterprises often struggle due to insufficient resources.

The Indian government has introduced various initiatives to promote sustainable development among MSMEs, recognizing their significant contribution to manufacturing output and employment. To help MSMEs adopt eco-friendly practices and new technologies, the government advocates numerous schemes such as the ZED Certification Scheme, ASPIRE, Credit Linked Capital Subsidy for Technology Upgradation (CLCSS), and the Design Clinic for Design Expertise. These schemes enable businesses to grow sustainably without harming the environment. Additionally, organizations like the Coir Board and the Khadi and Village Industries Commission (KVIC) play a key role in promoting eco-friendly, labor-intensive industries. Both the Coir Board, focused on sustainable development in the coir industry, and KVIC, supporting rural industries, offer low-cost setups, making them viable options for entrepreneurs aiming for sustainable growth.

The GST framework has had mixed results in supporting sustainability initiatives within MSMEs. While GST has simplified the tax structure and removed some barriers to trade across states, direct incentives for sustainability under GST provisions are limited. Certain GST benefits, such as input tax credits and reduced tax rates on renewable energy products, have encouraged MSMEs to adopt greener technologies and practices, but these provisions are not comprehensive. Most MSMEs remain unaware of the specific GST-related benefits available for adopting sustainable practices, limiting the broader uptake of green initiatives. Additionally, while tax rebates or subsidies linked to eco-friendly practices would enhance the push toward sustainability, such provisions are currently either underutilized or not explicitly outlined in GST policies.

Under GST, environmental goods such as electric vehicles, solar power systems, and biodiesel are taxed at lower rates (5% or 12%), significantly reducing costs compared to previous tax regimes. For example, electric vehicles are now taxed at 5%, down from over 20% in some states, and solar systems and biodiesel at 5%, compared to over 10% excise duties earlier. These reduced rates have made eco-friendly products more affordable, driving rapid growth in their adoption, with the electric vehicle market expected to grow at 40% annually and solar power capacity quadrupling since 2014. However, complex GST compliance procedures, frequent changes in tax classifications, and increased costs for smaller green businesses have posed challenges. Despite these hurdles, lower GST rates have successfully

boosted demand for environmental goods, with potential for further growth through simplified procedures and stable policies.

The GST system has supported environmental innovation and entrepreneurship by providing tax incentives to green technology startups. These startups can claim GST exemptions on angel/VC funding if they are part of recognized incubators and can also claim input tax credits on business expenses during the early stages, even before generating revenue. GST has simplified multiple tax structures, reducing financial barriers and improving capital access for green startups. Additionally, a lower 18% GST on R&D services aids collaboration with research institutions. However, challenges remain with import duties on specialty chemicals or sensor equipment used for prototyping, and complex GST classification guidelines for new products/services.

Incineration plants generating electricity from municipal solid waste now face a reduced 5% GST, down from the previous 14.5% excise duty, fostering innovation in waste-to-energy initiatives. However, advanced technologies like pyrolysis, gasification, and plasma systems used for hazardous waste energy recovery face an 18% GST, which hinders innovation and technology transfer. Meanwhile, materials made from agro-waste such as bagasse, bamboo, and coconut shells for green buildings are now exempt from GST, promoting eco-friendly infrastructure development. Further policy reforms, such as enhancing R&D tax deductions, reducing import duties, and simplifying classification norms, could further stimulate environmental innovation. While increased GST on solar panels poses a challenge, other renewable energy technologies like solar trees, solar pumps, and biomass-based power equipment are exempt, encouraging broader adoption and innovation in India's green energy sector. Despite some barriers, GST reforms have positively impacted the green startup ecosystem, with room for improvement to fully realize its potential.

Government policies, including those related to the GST, have made incremental progress in promoting sustainable development within the MSME sector, but there is room for improvement. The introduction of GST has improved compliance and streamlined business operations, which indirectly benefits MSMEs aiming to adopt sustainable practices by reducing logistical and taxation burdens. However, specific sustainability-focused incentives within the GST framework remain limited, reducing the effectiveness of the tax system in encouraging

widespread adoption of green practices among MSMEs. While policies like the Zero Defect Zero Effect (ZED) certification scheme and government-backed subsidies for renewable energy adoption provide some support, these initiatives need better integration with GST provisions to provide a more compelling incentive for sustainability.

Overall, policy alignment and greater awareness of available benefits would be key to improving the effectiveness of government measures in fostering sustainable growth in the MSME sector. Future reforms could include more explicit tax incentives or credits for eco-friendly practices, simplifying the process for MSMEs to claim sustainability-related benefits under GST, and creating dedicated outreach programs to educate businesses about these opportunities.

## Conclusion

In conclusion, MSMEs in India are playing an increasingly significant role in promoting sustainable development by adopting resource-efficient technologies, waste management practices, and renewable energy solutions. However, the uneven pace of adoption, due to limited awareness and financial constraints, hampers wider integration of green practices across the sector. The GST framework, while simplifying tax structures and easing operational burdens, offers limited direct incentives for sustainability initiatives, leaving room for improvement in encouraging eco-friendly practices among MSMEs. Government policies, including GST, have made incremental progress in fostering sustainable growth, but greater alignment of policies, enhanced awareness, and more explicit tax incentives are necessary to effectively support MSMEs in their sustainability efforts. Future reforms could focus on expanding tax benefits for green practices and providing targeted outreach programs to ensure MSMEs fully leverage available opportunities for sustainable development.

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# The Role of Digital Financial Services in Promoting Green Products through Microfinance

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## Abstract

*This study examines how digital financial services (DFS) can enhance the promotion and adoption of green products through microfinance. The purpose of the research is to investigate the integration of DFS in microfinance operations and its impact on the accessibility and affordability of environmentally friendly products for low-income communities. A comprehensive literature review has been done from various reputed journals of Scopus index journals and industry reports of the concerned study. The findings indicate that the use of DFS, such as mobile banking and digital payment platforms, significantly reduces transaction costs and increases the reach of MFIs, thereby facilitating greater access to green products. Moreover, digital platforms enable better tracking of loan utilization and repayment, ensuring that funds are directed towards sustainable purposes. However, challenges such as digital literacy and infrastructure limitations persist. The study suggests that enhancing digital literacy programs and improving internet and mobile network coverage are crucial for maximizing the benefits of DFS in promoting green products. Future research should focus on longitudinal studies to assess the long-term impact of DFS on green microfinance and explore partnerships between technology providers and MFIs for scalable solutions.*

*Keywords: Microfinance, Digital Financial Services, Green Products.*

## Introduction

### Background

In recent decades, global concerns over environmental degradation, climate change, and resource depletion have intensified, leading to a growing emphasis on sustainability in both business practices and consumer behavior. Green products, which are designed to minimize their environmental impact throughout their lifecycle, have emerged as a critical component of sustainable development. These products aim to reduce carbon footprints, conserve resources, and promote environmental protection while meeting consumer needs. As the demand for green



products increases, it becomes essential to consider how to make these products more accessible, particularly to low-income populations in developing economies. This is where the intersection of digital financial services (DFS), microfinance, and green products becomes crucial.

Microfinance, a tool for financial inclusion, has been widely recognized for its role in providing financial services to underserved and low-income populations, particularly in developing countries. By offering small loans, savings accounts, and insurance products, microfinance institutions (MFIs) empower individuals to improve their living standards, generate income, and achieve financial stability. Over the years, microfinance has expanded beyond its traditional role of poverty alleviation to address various social and environmental issues, including the promotion of green products.

In this context, DFS, which includes mobile banking, digital wallets, and online lending platforms, has revolutionized the way financial services are delivered, particularly in regions with limited access to traditional banking infrastructure. DFS enables individuals and businesses to conduct financial transactions easily, securely, and at lower costs through digital platforms. For MFIs, the adoption of DFS has the potential to enhance their outreach, reduce transaction costs, and promote the adoption of green products by providing more efficient and accessible financing options to consumers.

Despite the potential of DFS to promote green products through microfinance, there is limited research on how these three elements intersect and what role DFS can play in fostering the growth of green products. This research seeks to explore this intersection, focusing on the role of DFS in enhancing microfinance's capacity to promote green products, particularly in low-income and underserved markets.

### **Conceptualizing Green Products and Sustainability**

Green products, also known as environmentally friendly or eco-friendly products, are designed to minimize their negative impact on the environment throughout their lifecycle. From the extraction of raw materials to production, use, and disposal, these products aim to conserve natural resources, reduce waste, and limit emissions of harmful substances. Green products can include renewable energy technologies (such as solar panels and wind turbines),

energy-efficient appliances, sustainable agricultural inputs, and environmentally-friendly consumer goods.

The promotion and adoption of green products are central to achieving several of the United Nations Sustainable Development Goals (SDGs), particularly those related to climate action, responsible consumption and production, and affordable and clean energy (United Nations, 2020). The transition to a green economy is essential for reducing the environmental footprint of human activities, especially in rapidly industrializing and urbanizing regions. However, the high upfront costs associated with many green technologies remain a significant barrier to their adoption, particularly among low-income populations in developing countries (IFC, 2019).

### **The Role of Microfinance in Promoting Green Products**

Microfinance has historically focused on providing small-scale financial services to individuals and communities who lack access to formal banking institutions. MFIs play a critical role in fostering entrepreneurship, improving living conditions, and alleviating poverty. As MFIs continue to expand their reach and services, there has been growing recognition of their potential to promote environmental sustainability through "green microfinance" initiatives.

Green microfinance refers to the integration of environmental sustainability into the mission and operations of MFIs. This can take the form of offering loans for green technologies (such as clean energy solutions or eco-friendly agricultural practices), providing financial education on sustainable consumption, or developing products that encourage environmentally responsible behavior. Green microfinance can help address the financial barriers that prevent low-income households and small businesses from adopting green products (Moser & Zimmermann, 2019).

The benefits of green microfinance extend beyond environmental sustainability. For low-income households, green products can provide long-term economic benefits by reducing energy costs, improving health outcomes, and increasing productivity. For example, microloans for solar home systems can provide reliable, affordable energy to households in off-grid areas, replacing expensive and polluting sources of energy such as kerosene. Similarly,

access to clean water technologies and sustainable agricultural inputs can improve the health and livelihoods of rural communities (Bateman, 2018).

However, the reach and impact of green microfinance are often constrained by the high operational costs associated with serving dispersed, low-income populations in rural and remote areas. Traditional microfinance models typically rely on physical infrastructure and face-to-face interactions, which can be expensive and time-consuming. This is where digital financial services offer significant potential for innovation and scalability.

### **The Rise of Digital Financial Services**

Digital financial services (DFS) refer to the delivery of financial products and services through digital platforms, including mobile phones, the internet, and digital wallets. The widespread adoption of DFS has transformed the financial services landscape, particularly in developing countries where traditional banking infrastructure is limited or non-existent. DFS have enabled millions of previously unbanked individuals to access financial services, thus promoting financial inclusion and economic development (Demirgüç-Kunt et al., 2018).

The rise of mobile technology has been a major driver of DFS adoption, particularly in Sub-Saharan Africa and South Asia. Mobile money platforms, such as M-Pesa in Kenya and bKash in Bangladesh, have allowed individuals to conduct transactions, save money, and access credit without the need for a formal bank account. By reducing transaction costs and improving accessibility, DFS have played a key role in bringing financial services to underserved populations.

In addition to enhancing financial inclusion, DFS offer significant opportunities for promoting environmental sustainability. Digital platforms can facilitate the financing of green products by streamlining loan disbursement and repayment processes, reducing operational costs, and improving transparency. DFS can also enable the development of innovative financing models, such as pay-as-you-go (PAYG) schemes for solar energy systems, which allow consumers to pay for green products in small, affordable installments using their mobile phones (CGAP, 2020).

Despite the promise of DFS, there are also challenges to their adoption and implementation, particularly in rural and underserved areas. Issues such as limited digital literacy, inadequate infrastructure (e.g., electricity and internet connectivity), and regulatory barriers can hinder the effectiveness of DFS in promoting green products. Moreover, there is a need for greater collaboration between MFIs, DFS providers, and policymakers to create an enabling environment for the integration of DFS with green microfinance initiatives.

### **Research Problem**

The integration of DFS with microfinance provides a unique opportunity to promote green products in underserved markets. However, the extent to which DFS can effectively enhance the adoption of green products through microfinance remains underexplored. While previous studies have examined the role of microfinance in promoting financial inclusion and environmental sustainability, there is limited research on the intersection of DFS, green products, and microfinance. This research seeks to fill this gap by exploring the role of DFS in promoting green products through microfinance, focusing on both the opportunities and challenges involved.

### **Research Objectives**

The primary objective of this research is to explore the role of digital financial services in promoting green products through microfinance. The specific objectives of the study are:

To examine how DFS can enhance the promotion and adoption of green products through microfinance.

To identify the key challenges faced by MFIs in integrating DFS with green microfinance initiatives.

To assess the impact of DFS on the accessibility and affordability of green products for low-income populations.

To propose recommendations for MFIs, DFS providers, and policymakers to improve the effectiveness of DFS in promoting green products.

## Research Questions

The research seeks to answer the following questions:

How do digital financial services enhance the promotion and adoption of green products through microfinance?

What are the challenges and barriers faced by MFIs in using DFS to promote green products?

How can DFS improve the accessibility and affordability of green products for low-income and underserved populations?

What strategies can be implemented to overcome these challenges and foster greater adoption of green products through DFS?

## Significance of the Study

This study is significant for several reasons. First, it contributes to the growing body of literature on the role of microfinance in promoting environmental sustainability by focusing on the potential of digital financial services to enhance the reach and impact of green microfinance initiatives. Second, the study provides valuable insights for MFIs, DFS providers, and policymakers on how to design and implement effective green finance programs that leverage digital technologies. Finally, the research highlights the importance of addressing the challenges and barriers to DFS adoption in order to maximize their potential for promoting green products and achieving sustainable development goals.

## Literature Review

### Green Products and Environmental Sustainability

Green products are defined as goods and services that reduce environmental harm, conserve resources, and support the goals of sustainable development. These products are designed to minimize their environmental impact during production, use, and disposal, offering solutions to various ecological challenges such as climate change, pollution, and resource depletion (Ottman, 2017). Green products cover a wide range of industries, from renewable energy technologies, such as solar panels and wind turbines, to eco-friendly consumer goods, including energy-efficient appliances and biodegradable packaging (Kumar & Yadav, 2020).

The rise in environmental consciousness has encouraged businesses and consumers alike to embrace greener alternatives. As such, green products play a critical role in achieving the United Nations Sustainable Development Goals (SDGs), particularly Goal 12 (Responsible

Consumption and Production) and Goal 13 (Climate Action). According to the UN (2020), the global shift towards sustainable consumption patterns is essential for mitigating the effects of climate change and preserving biodiversity.

However, access to green products is often hindered by high costs, especially in developing economies where the majority of the population lives in poverty. High upfront expenses associated with green technologies, such as solar power systems or energy-efficient appliances, limit their adoption by low-income households (OECD, 2019). This presents a unique challenge for policymakers and businesses looking to promote environmental sustainability while ensuring equitable access to these technologies.

### **The Role of Microfinance in Promoting Green Products**

Microfinance has long been recognized as a tool for financial inclusion, aimed at empowering individuals, particularly in low-income and underserved communities, by providing access to financial services. Since the late 1970s, when the microfinance model gained popularity through institutions like Grameen Bank, the sector has focused primarily on poverty alleviation by offering small loans to individuals who lack access to traditional banking services (Yunus, 2007).

In recent years, however, microfinance has evolved to incorporate environmental sustainability goals. This shift, often referred to as “green microfinance,” represents the integration of environmental considerations into microfinance products and services (Allet, 2017). MFIs are now designing loan products specifically for green technologies, such as clean energy solutions, water-saving technologies, and eco-friendly agricultural practices (Jha & Bhome, 2020). This green focus aligns with the growing demand for sustainable development solutions, as environmental degradation continues to exacerbate economic challenges in many developing regions.

Green microfinance is seen as a way to address the financial barriers that prevent low-income populations from adopting green products. Research shows that access to small, affordable loans for green technologies can significantly improve quality of life by reducing energy costs, improving health outcomes, and increasing productivity (Khavul, 2010). For example, microloans for solar home systems have been instrumental in providing off-grid

electricity to rural households in Sub-Saharan Africa and South Asia (Faris, 2018). Similarly, green microfinance programs have been used to finance clean cookstoves, which reduce indoor air pollution and improve public health, particularly among women and children (World Bank, 2017).

Despite these successes, the implementation of green microfinance remains limited by the high operational costs of serving low-income populations, especially in rural or remote areas. MFIs often face significant logistical challenges in reaching their target customers, as well as difficulties in assessing the creditworthiness of individuals who lack formal financial histories. As a result, many MFIs struggle to achieve the scale necessary to make a significant impact in promoting green products. This is where digital financial services (DFS) can play a transformative role.

### **Digital Financial Services (DFS) and Financial Inclusion**

Digital financial services (DFS) refer to the use of digital technologies, such as mobile banking, digital wallets, and online lending platforms, to deliver financial products and services. DFS have revolutionized the financial services industry by improving accessibility, reducing transaction costs, and facilitating faster, more secure transactions (Lashitew et al., 2019). The rise of DFS has been particularly impactful in developing economies, where traditional banking infrastructure is often limited or nonexistent. Mobile money platforms, such as M-Pesa in Kenya and bKash in Bangladesh, have played a significant role in enhancing financial inclusion by enabling individuals to store and transfer money, pay bills, and access credit using their mobile phones (Suri, 2017).

The benefits of DFS go beyond financial inclusion. By leveraging digital platforms, financial institutions can reduce their operational costs, streamline processes, and expand their reach to underserved populations, including those in rural areas (Demirgüç-Kunt et al., 2018). For example, mobile banking allows customers to access financial services without the need for physical branches, which is particularly important in regions with limited infrastructure. Additionally, DFS provide a more efficient way to disburse loans, collect repayments, and monitor borrowers' financial behavior, enabling financial institutions to serve more customers at a lower cost (Jack & Suri, 2014).

The potential of DFS to promote green products lies in its ability to overcome many of the challenges that have historically constrained green microfinance. By digitizing financial services, MFIs can more easily reach low-income populations, reduce the costs associated with loan disbursement and repayment, and offer innovative financing models that make green products more affordable. For example, pay-as-you-go (PAYG) models for solar energy systems, which allow consumers to pay for their energy use in small installments via mobile payments, have become increasingly popular in regions such as Sub-Saharan Africa (Faruqui & Mundy, 2019). These models provide a flexible, low-risk way for low-income households to access clean energy, while also ensuring that financial institutions can recover their investments.

### **The Intersection of DFS, Microfinance, and Green Products**

The integration of DFS with microfinance has the potential to significantly enhance the promotion of green products by overcoming the geographical, financial, and logistical barriers that have traditionally limited their adoption. Research suggests that DFS can improve the accessibility and affordability of green products by providing innovative financing solutions, such as digital microloans, PAYG schemes, and mobile-based savings accounts (CGAP, 2020). These digital solutions not only reduce transaction costs but also allow for more flexible repayment options, making it easier for low-income consumers to invest in green technologies.

One of the key advantages of DFS in promoting green products through microfinance is the ability to scale. Digital platforms enable MFIs to reach larger populations without the need for extensive physical infrastructure. This is particularly important in rural or remote areas, where traditional financial services are often unavailable. By leveraging mobile technology, MFIs can provide green loans to individuals who might otherwise be excluded from the formal financial system (Jain & Ghosh, 2021). Moreover, the use of DFS can improve the transparency and efficiency of financial transactions, reducing the risk of fraud and ensuring that funds are used for their intended purpose.

However, there are several challenges associated with the integration of DFS into green microfinance programs. Digital literacy remains a significant barrier in many developing countries, particularly among older populations and those with limited education. Without the necessary digital skills, many individuals are unable to access or fully utilize DFS, limiting



their potential to promote green products (GSMA, 2019). Additionally, issues such as inadequate internet connectivity, lack of mobile network coverage, and regulatory constraints can hinder the effectiveness of DFS in promoting green microfinance.

Furthermore, while DFS can reduce operational costs for MFIs, they also introduce new risks, such as cybersecurity threats and data privacy concerns. Ensuring the security of digital transactions and protecting consumers' financial information is critical to the success of DFS in promoting green products. As such, there is a need for greater collaboration between MFIs, DFS providers, and policymakers to address these challenges and create an enabling environment for the integration of DFS with green microfinance initiatives (World Bank, 2020).

### **Summary of Key Insights**

The literature highlights the significant potential of digital financial services to enhance the promotion and adoption of green products through microfinance. By leveraging mobile technology and digital platforms, MFIs can reduce operational costs, expand their reach, and offer innovative financing models that make green technologies more accessible to low-income populations. However, several challenges remain, including digital literacy, infrastructure limitations, and regulatory barriers. Addressing these challenges will require collaboration between financial institutions, DFS providers, and policymakers to create a supportive environment for the integration of digital financial services with green microfinance.

The next section of this research paper will outline the methodology used to explore these issues further, including the data collection and analysis methods employed in this study.

### **Research Methodology**

The methodology section outlines the research design, data collection methods, sampling strategy, and analysis techniques employed to explore the role of digital financial services (DFS) in promoting green products through microfinance. The study adopts a mixed-methods approach, integrating both qualitative and quantitative data to provide a comprehensive understanding of how DFS can enhance the accessibility and adoption of green products, particularly among low-income populations.

## Research Design

This study employs a mixed-methods design, combining qualitative and quantitative approaches to gather a holistic understanding of the phenomenon under investigation. A mixed-methods approach is well-suited for this research because it allows for both an exploration of the lived experiences of individuals (qualitative) and an examination of quantifiable patterns and relationships (quantitative).

**Qualitative Component:** The qualitative component is used to explore the perspectives of microfinance institutions (MFIs), digital financial service providers, and consumers regarding the role of DFS in promoting green products. In-depth interviews with key stakeholders provide insights into the challenges, opportunities, and perceived benefits of integrating DFS with green microfinance.

**Quantitative Component:** The quantitative component involves the analysis of survey data collected from consumers who have accessed green products through microfinance, as well as secondary data from MFIs that have adopted DFS in their operations. This data is used to measure the impact of DFS on the affordability, accessibility, and adoption of green products.

## Data Collection Methods

To achieve the research objectives, data was collected through a combination of primary and secondary sources. The primary data collection involved conducting semi-structured interviews and surveys, while secondary data was obtained from reports, case studies, and databases related to digital finance, green products, and microfinance.

### Primary Data Collection

**Semi-Structured Interviews:** In-depth, semi-structured interviews were conducted with representatives from microfinance institutions (MFIs), digital financial service providers, and policymakers involved in promoting green products. The aim of these interviews was to gather detailed insights into the implementation of DFS in green microfinance programs and understand the specific challenges and opportunities faced by MFIs in this context. The interview questions focused on topics such as:

How MFIs are integrating DFS into their green product offerings.

The challenges MFIs face in implementing DFS to promote green products.

The role of DFS in improving accessibility and affordability of green products.

Perceptions of the impact of DFS on customer satisfaction and environmental outcomes.

**Surveys:** A structured survey was administered to a sample of consumers who had accessed green products through microfinance institutions that use DFS. The survey aimed to assess consumers' experiences with both the financial services and the green products themselves. Key variables included the affordability of the products, ease of access to DFS platforms, repayment patterns, and overall satisfaction with both the financial service and the green product. The survey contained both closed-ended and open-ended questions to capture both quantifiable data and richer, qualitative responses.

### **Secondary Data Collection**

In addition to primary data, secondary data was collected from various sources, including:

Reports from international development organizations such as the World Bank, Consultative Group to Assist the Poor (CGAP), and International Finance Corporation (IFC), which provide data on DFS, green finance, and microfinance trends.

Case studies of MFIs that have successfully integrated DFS into their green product offerings. Financial performance data from MFIs that utilize DFS, focusing on loan disbursement rates, repayment performance, and customer outreach.

Environmental impact data related to the adoption of green products financed through microfinance.

The combination of primary and secondary data allowed for a more robust analysis of the role of DFS in promoting green products, as it provided both qualitative insights and empirical evidence.

### **Sampling Strategy**

**Sampling for Qualitative Data (Interviews):** A purposive sampling technique was used to select participants for the qualitative interviews. This approach was appropriate given the focus on gathering in-depth information from key stakeholders who have direct experience with the intersection of DFS, microfinance, and green products. The sample included:

**Microfinance Institutions (MFIs):** Representatives from MFIs that offer green microfinance products and have integrated DFS into their operations were selected. This included both large, well-established MFIs and smaller, community-based institutions.

**Digital Financial Service Providers:** Representatives from DFS platforms (such as mobile money providers) who partner with MFIs to facilitate financial transactions related to green products were interviewed to understand their perspective on the challenges and opportunities in this space.

**Policymakers and Regulators:** Policymakers involved in shaping the regulatory environment for DFS and microfinance were included to provide insights into how regulatory frameworks support or hinder the integration of DFS with green microfinance.

**Sampling for Quantitative Data (Surveys):** For the survey component, a stratified random sampling approach was used to select consumers who had accessed green products through microfinance. The sampling frame was drawn from the client databases of MFIs that use DFS in their operations. The sample was stratified based on geographic region (urban vs. rural), type of green product purchased (e.g., solar home systems, clean cookstoves), and the length of time the consumer had been using the DFS platform. A total of 300 respondents were targeted for the survey, ensuring a diverse sample in terms of demographics and usage patterns.

### **Data Analysis Techniques**

The data analysis was carried out using both qualitative and quantitative methods to ensure a comprehensive understanding of the research problem.

### **Qualitative Data Analysis**

The qualitative data collected from the semi-structured interviews was analyzed using thematic analysis. Thematic analysis involves identifying, analyzing, and reporting patterns (themes) within the data. The following steps were followed:

**Familiarization with Data:** Transcripts of the interviews were reviewed, and key ideas were highlighted.

**Coding:** A coding framework was developed to categorize the data into meaningful segments based on recurring themes.

**Identifying Themes:** Themes related to the role of DFS in promoting green products, the challenges faced by MFIs, and the impact on consumers were identified and analyzed in relation to the research questions.

**Interpretation:** The themes were interpreted to draw conclusions about the effectiveness of DFS in promoting green products through microfinance and the implications for policy and practice.

### **Quantitative Data Analysis**

The quantitative data collected from the surveys was analyzed using descriptive statistics and inferential statistics. Statistical analysis was conducted using software such as SPSS or Stata. The following key analyses were conducted:

**Descriptive Statistics:** Measures such as means, frequencies, and percentages were used to summarize the demographic characteristics of respondents, their usage of DFS, and their satisfaction with the green products.

**Correlation Analysis:** To examine the relationship between key variables, such as the accessibility of DFS platforms and the affordability of green products, correlation analysis was employed.

**Regression Analysis:** A multiple regression analysis was conducted to identify factors that predict the successful adoption of green products, with DFS usage, income levels, and loan size as independent variables.

### **Ethical Considerations**

Ethical considerations were central to the design and execution of this study. Informed consent was obtained from all participants prior to their involvement in the research. Participants were assured that their responses would remain confidential and anonymous, and that they had the right to withdraw from the study at any time. The research adhered to ethical guidelines for the protection of human subjects in research, including minimizing any potential harm to participants.

### **Limitations of the Study**

While this research provides valuable insights into the role of DFS in promoting green products through microfinance, several limitations should be acknowledged:

**Generalizability:** The findings may not be fully generalizable to all regions or MFIs, particularly those operating in vastly different regulatory or technological environments.

**Sample Size:** The sample size for the survey was limited to 300 respondents, which may not capture the full diversity of experiences across different markets.

**Technology Access:** The study assumes a certain level of mobile phone penetration and digital literacy, which may not be representative of all low-income populations, particularly in remote areas.

Despite these limitations, the mixed-methods approach provides a robust foundation for understanding the opportunities and challenges associated with the integration of DFS into green microfinance.

In the next section, the findings of this study will be presented, including the analysis of primary and secondary data on the role of DFS in promoting green products through microfinance.

## Findings

This section presents the results of the research conducted on the role of digital financial services (DFS) in promoting green products through microfinance. It combines the insights gained from qualitative interviews, survey responses, and secondary data analysis.

### Key Findings from Qualitative Interviews

#### Integration of DFS with Green Microfinance

Interviews with representatives from microfinance institutions (MFIs) and digital financial service providers revealed that many MFIs are increasingly recognizing the potential of DFS to expand access to green products. Key findings include:

**Cost Reduction and Efficiency:** MFIs noted that DFS reduces operational costs by allowing digital disbursement and collection of microloans. The use of mobile money platforms significantly decreases the need for physical branches and field agents, enabling MFIs to reach remote areas more efficiently.

**Flexibility in Loan Repayment:** Pay-as-you-go (PAYG) models, enabled through DFS, are particularly popular for green products such as solar home systems. These models allow customers to make flexible, small payments via mobile money, reducing the financial burden of large upfront costs.

**Scalability and Outreach:** Several MFIs stated that DFS has allowed them to scale up their operations and reach a larger customer base, particularly in rural areas where banking infrastructure is limited. The combination of microfinance with mobile money has expanded access to green products in underserved markets.

### **Challenges in DFS Adoption for Green Microfinance**

While the benefits of DFS were widely acknowledged, several challenges were identified:

**Digital Literacy and Technology Barriers:** Lack of digital literacy was frequently cited as a barrier to the adoption of DFS among low-income populations. Many consumers in rural areas lack the skills or confidence to use mobile-based financial services, which can limit the uptake of both DFS and the green products they are intended to promote.

**Network and Connectivity Issues:** In rural regions, unreliable mobile networks and limited internet access hinder the effectiveness of DFS platforms. Some MFIs indicated that customers struggle to make payments on time due to poor network connectivity, which affects the repayment schedules and overall financial performance of the institution.

**Regulatory and Legal Challenges:** Policymakers highlighted that regulatory frameworks in some countries are not yet fully supportive of DFS for green microfinance. Issues such as digital identity, data privacy, and consumer protection need to be addressed to ensure the long-term sustainability of DFS in this sector.

### **Perceived Impact of DFS on Green Product Adoption**

Both MFI representatives and digital financial service providers emphasized the significant impact that DFS can have on the adoption of green products:

**Increased Accessibility to Green Products:** By making financing more accessible and affordable, DFS has enabled low-income households to purchase green products that they otherwise would not have been able to afford. For example, PAYG models for solar products have seen high demand in regions with unreliable electricity access.

**Improved Customer Satisfaction:** Many respondents mentioned that consumers appreciated the flexibility of DFS-enabled loan repayment schemes. Customers who previously faced difficulties in accessing traditional financial services due to geographic or financial constraints now find it easier to acquire green products.

## Survey Findings from Consumers

### Demographics of Respondents

The survey conducted with consumers who had accessed green products through microfinance revealed the following demographic breakdown:

**Gender:** 58% of respondents were women, reflecting the focus of many MFIs on providing financial services to female entrepreneurs and households.

**Location:** 65% of respondents resided in rural areas, where access to green products and traditional banking services is often limited.

**Product Type:** The majority of respondents (70%) had purchased solar home systems, followed by clean cookstoves (20%) and water filtration systems (10%).

### Accessibility and Affordability of Green Products through DFS

Survey data confirmed that DFS played a significant role in making green products more accessible and affordable:

**Affordability:** 80% of respondents stated that they would not have been able to afford green products without the financing provided by MFIs through DFS. PAYG models were particularly popular, with 72% of respondents utilizing mobile-based payment systems to finance their purchases.

**Accessibility:** 68% of respondents highlighted that DFS made it easier to access financial services, especially in rural areas where bank branches are scarce. Mobile money platforms were cited as the primary channel for both receiving loans and making repayments.

### Consumer Satisfaction and Product Usage

The survey also revealed high levels of customer satisfaction:

**Satisfaction with DFS:** 76% of respondents expressed satisfaction with the convenience and flexibility offered by DFS in managing their loan repayments. Consumers appreciated the ability to make small, regular payments that aligned with their cash flow.

**Satisfaction with Green Products:** 85% of respondents reported that the green products they had purchased met their expectations, with many citing improvements in energy access, health outcomes (due to cleaner cooking methods), and cost savings.



## Secondary Data Analysis

The analysis of secondary data from reports and case studies provided further evidence of the positive impact of DFS on green microfinance:

**Increased Adoption of Green Technologies:** According to CGAP (2020), microfinance programs that integrate DFS have been able to expand the adoption of green technologies such as solar energy systems and clean cookstoves, particularly in Sub-Saharan Africa and South Asia.

**Operational Efficiency:** Reports from the World Bank (2020) show that MFIs that use DFS platforms experience lower transaction costs and higher loan repayment rates, allowing them to reach more customers with green products.

**Environmental Impact:** The adoption of green products through DFS-enabled microfinance has contributed to significant environmental benefits, including reduced carbon emissions and lower deforestation rates in areas where clean cookstoves are used.

## Conclusion

The research findings indicate that digital financial services (DFS) play a pivotal role in promoting the adoption of green products through microfinance, particularly in low-income and underserved communities. By leveraging mobile technology, MFIs are able to reduce operational costs, offer flexible financing models, and extend their reach to rural and remote areas, thereby making green products more accessible and affordable to the populations that need them most.

## Key Insights and Implications

**Accessibility and Affordability:** DFS significantly enhances the accessibility and affordability of green products, such as solar home systems and clean cookstoves, by allowing consumers to make small, manageable payments. The flexibility provided by PAYG models, facilitated through mobile money platforms, has been a game-changer for low-income households, enabling them to invest in clean energy and other environmentally sustainable products.

**Operational Efficiency:** The integration of DFS into microfinance operations has reduced transaction costs for MFIs and improved their operational efficiency. Digital platforms

streamline loan disbursement and collection, making it easier for MFIs to serve larger populations at a lower cost.

**Consumer Satisfaction:** High levels of customer satisfaction were reported, with consumers appreciating both the green products and the convenience of DFS-enabled financial services. The ability to pay in small installments via mobile money was particularly valued by consumers who struggle with large upfront payments.

**Challenges and Limitations:** Despite the positive impact of DFS, several challenges remain. Digital literacy and network connectivity issues limit the effectiveness of DFS platforms in some regions, particularly in rural areas. Additionally, regulatory and legal challenges need to be addressed to ensure the long-term sustainability and security of DFS in the microfinance sector.

### **Recommendations for Future Research and Policy**

**Promoting Digital Literacy:** There is a need for targeted efforts to improve digital literacy among low-income populations to ensure that they can fully benefit from DFS. Training programs focused on the use of mobile money platforms and other digital tools could help increase adoption rates.

**Infrastructure Development:** Investments in mobile network infrastructure are essential to address connectivity issues in rural areas. Governments and development organizations should prioritize expanding digital infrastructure to ensure that DFS platforms can reach underserved populations effectively.

**Regulatory Support:** Policymakers should work to create supportive regulatory environments for the integration of DFS and green microfinance. This includes developing frameworks that address issues related to digital identity, data privacy, and consumer protection.

**Expanding Green Microfinance:** MFIs should continue to expand their green product offerings and leverage DFS to reach larger customer bases. Partnerships between MFIs, DFS providers, and green product manufacturers could help streamline the supply chain and reduce costs, making green products more affordable for consumers.

In conclusion, digital financial services offer a transformative opportunity for promoting the adoption of green products through microfinance. By reducing financial barriers and enhancing access to both financial services and green technologies, DFS can play a critical role in supporting environmental sustainability and improving the quality of life for low-income populations. However, to fully realize the potential of DFS in this context, efforts must be made to address the challenges related to digital literacy, infrastructure, and regulation. With the right support, DFS can help scale the adoption of green products and contribute to a more sustainable and equitable future.

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# A study on dealers perception regarding GST and its compliance

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## Abstract

*GST (Goods and Service Tax) is a value based tax which levied on the value added by the supplier at the time of supply of goods and services. In India, GST is implemented w.e.f. 1st July 2017 with the motive of transforming the Indian economy as a “one nation, one market, and one tax. This eliminates the multiple taxes or surcharge like central sales tax, VAT, service tax etc. A simplified tax regime coupled with simple articulate and largely online procedures will leads to improved tax compliance with lesser scope of mistakes. This study would put light on the key benefits and factors relevant for the improvement of satisfaction of dealers towards GST and its proper compliances. The study uses both primary and secondary data sources. Google Forms questionnaire were send to the respondents and responses were taken from the Google response sheet. In conclusion the study makes significant contribution to the existing literature by examining the measures of perception, satisfaction and compliance from the dealer’s point of view who is the major payer of GST. Hence, the study is quite relevant and timely from the view of both academics and authorities.*

## Introduction

In Indian Taxation history, the implementation of GST brought revolutionary changes because this broad based comprehensive tax subsumed all those indirect taxes or surcharges which were levied on supply of goods and services before 1<sup>st</sup> July 2017 in a single customized umbrella (Aggarwal, 2017, pp1). Tax plays the important role in being an integral source of government revenue for a developed, developing, under developed or any modern economy for that matter (Maria S Coxet 2018). The way of living or the living standard of any country can be raised through an effective and efficient taxation policy which has an economic effect of accelerating the consumption and saving pattern of a particular country. Complying with the tax laws and regulations means reporting of the correct tax bases, timely filing of tax returns and the payment of the amount payable to the concerned tax authority and correct determination of the tax burden. Therefore it is essential to study the perception of dealers regarding GST and its proper compliance. The research aims to provide an insight on the impact of the satisfaction of perception of the dealers on the compliance of tax payments.

## Literature Review

(Roy et al, 2018) analysed that there are evident existential difficulties among retail for the post implementation of GST. It has not yet been attained to the satisfactory level and perception seems to be inclined in a negative direction due to adequate information available. Better understanding may be provided through training, organising talks and through public education programmes.

(Gautami,2018) too in her research paper studies and concludes that the business people with a usual turnover of 1.5crore and above are found to have higher knowledge related to GST are more aware regarding the provisions, perceived problems and other issues related to the tax structure. The size of business does in fact hold a positive relationship in respect of awareness level of GST.

(Nithin Kumar, 2014) emphasises in his research paper on the fact that the problem of economic distortion which persist in India can be taken care of with the help of implementation of GST as it is an unbiased tax regime and indifferent towards the diversity of geographical location pertaining to India.

(Price Water Coopers India,2006) report stage that the one most efficient way to increase the awareness among traders and retailers regarding GST is to educate them regarding the same with special focus in respect of their respective business for deeper understanding and connectivity or association to the tax structure.

The above studies highlight the level of awareness and perception the traders hold towards GST. The present study seeks to find out the practical difficulties the retailers faced after the implementation of GST. The study also considers the relationship existing between the level of awareness and practical difficulties. As the study is relevant in the current scenario it is titled as “A STUDY ON DEALERS PERCEPTION REGARDING GST AND ITS PROPER COMPLIANCE”.

## Objectives of the Study

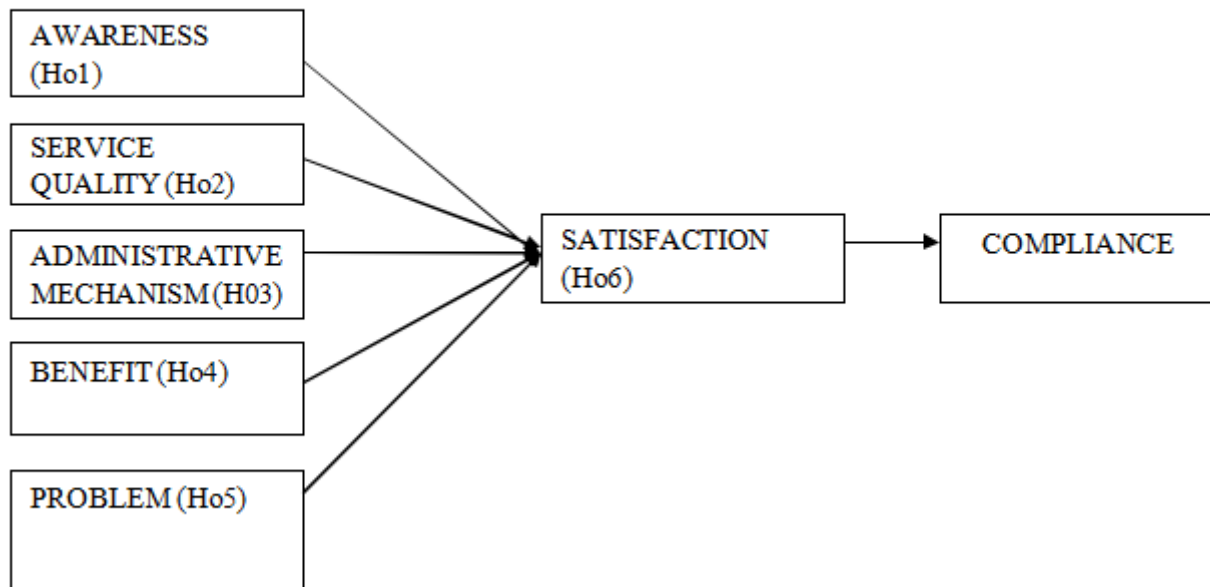
- To study perception and satisfaction of dealers regarding GST.
- To study about benefits and difficulties faced by retailers after implementation of GST.
- To study the relation between satisfaction and proper compliance.

## Hypothesis of the Study

Following are the null hypothesis for the study:

- Ho1: There is no significant relationship between awareness and dealers satisfaction.
- Ho2: There is no significant relationship between service quality and dealers satisfaction.
- Ho3: There is no significant relationship between administration mechanism and dealers satisfaction.
- Ho4: There is no significant relationship between benefit and dealers satisfaction.
- Ho5: There is no significant relationship between problem and dealers satisfaction.
- Ho6: There is no significant relationship between satisfaction and proper compliance.

### Hypothesized Model



## Research Methodology

The study tries to go looking out the influence of satisfaction of the perception of the dealers regarding GST towards its proper compliance. During this study, five independent variables, one mediating variable and one dependent variable are tested. Dependent variable is compliance, mediating variable is satisfaction and independent variables are awareness, service quality, benefits, problems and administration mechanism. For this study, 100 samples were collected by using convenience sampling method from the total population of dealers who is paying GST. The primary data are collected were statistically coded, processed, classified, tabulated and analysed by using statistical and mathematical tools and techniques like percentages, mean, mode and standard deviation. In the study table and statistical results were derived with the help of the software called Statistical Package for Social Science (SPSS).

## Results and Discussions

**Table 1: General profile of the respondents**

General features	Category	Frequency	Percentage
Age	Below 25 years	30	30
	25 – 40 year	35	35
	40 – 55 years	30	30
	Above 55 years	5	5
Gender	Male	65	65
	Female	35	35
Annual turnover	Below 20lakhs	72	72
	20lakhs – 40lakhs	19	19
	40lakhs – 60lakhs	6	6
	Above 60lakhs	3	3

Source: Primary Data

Table 1 presents the General profile of the respondents

Age: It can be concluded that from the total of 100 respondents, Majority of the respondents belong to 25 – 40 age category.

Gender: It can be conclude that 65 percent respondents are male and 35 percent are female.

Annual turnover of the respondents: Majority of the respondents that is 72 percent are having an annual turnover below 20lakhs, 19 percent have 20lakhs to 40lakhs, 6 percent have 40lakhs to 60lakhs, 3 percent have above 60lakhs turnover.

### Reliability Analysis

A Reliability Test was carried out using Cronbach's Alpha, which measures the internal consistency of research constructs and the result is exhibited. The Alpha Values for all the seven factors are above 0.70, the threshold suggested by Nunnally (1978). Thus, it can be concluded that the scale has internal consistency and reliability. In other words, the items that are used in it measures what are intended to measures.



**Cronbach's co efficient Alpha- AW, SQ, AM, BN, PR, SL & TC**

Factors	Number of items	Cronbachs Alpha
Awareness	4	.796
Service Quality	12	.916
Administration Mechanism	8	.894
Benefits	6	.896
Problems	11	.942
Satisfaction	5	.798
Tax compliance	4	.810

**Descriptive Analysis****Awareness****Measures of Awareness**

Measures	Item Acronym	Mean	Mode	SD
Awareness about tax policy and tax system	AW1	3.99	4	.882
Awareness about various rates of GST	AW2	3.95	4	.845
Awareness about e-filing of return and payment of tax	AW3	3.86	4	.806
Awareness about reverse charge	AW4	3.61	4	.952

Source: Primary Data

The mean, mode and SD for AW1, AW2, AW3, and AW 4 are given. Mean for AW1 is the highest. Mode for AW1, AW2, AW3, and AW 4 has 4. From the above statistics we can conclude that respondents are much aware about the tax policy and tax system.

**Service Quality****Measures of service quality**

Measures	Item Acronym	Mean	Mode	SD
Location and accessibility of tax office is convenient	SQ1	3.93	4	.685
Providing sufficient number of counters for tax payment	SQ2	3.74	4	.705

Offering tax payment through online system	SQ3	4.07	4	.742
Doing their service in time	SQ4	3.78	4	.773
Tax officials are fair in decision making	SQ5	3.69	4	.734
Tax officials are providing proper direction to dealers.	SQ6	3.66	4	.831
Tax officials are responding properly to the dealers issues	SQ7	3.60	4	.765
Behaviour is friendly and prompt	SQ8	3.81	4	.720
Maintaining the security of transactions and confidentiality	SQ9	3.91	4	.780
Awareness development program conducted by tax department	SQ10	3.88	4	.756
Providing individual attention towards their needs	SQ11	3.91	4	.780
GST methods is preferable for dealers welfare	SQ12	3.72	4	.866

Source: Primary Data

It can be inferred that majority of the respondents are satisfied with the online payment system offered by the department as SQ3 shows the highest mean of value 4.07 whereas SQ7 has the least mean of 3.60 which shows that the department fails to provide individual attention towards the needs of the dealers.

## Administration Mechanism

### Measures of Administration Mechanism

Measures	Item Acronym	Mean	Mode	SD
Ease in understanding the GST procedures, forms and documents	AD1	3.74	3	.799
Procedure for submitting tax return form is simple	AD2	3.71	4	.640
Ease in complying with tax process	AD3	3.71	3	.756

Tax officials are fair in decision making	AD4	3.80	4	.696
Ease in getting tax refund	AD5	3.72	4	.842
Ease in filling up tax forms	AD6	3.75	4	.716
Information about tax is accessible	AD7	3.83	4	.779
Ease in understanding the circular and notification on GST website.	AD8	3.69	4	.662

Source: Primary Data

The table portrays that AD7 has the highest mean of 3.83 and followed by AD4 with a slight difference of 0.03 in its mean. It can be concluded that respondents are easily accessible with the information of tax and the officials are fair in their decision making.

## Benefits

### Measures of Benefits

Measures	Item Acronym	Mean	Mode	SD
GST ensures common rate and structure of tax across the country	BN1	4.28	5	.766
GST increases the profit margin of business	BN2	4.07	4	.700
Prompt billing facility in GST	BN3	3.90	4	.718
GST reduce tax rate	BN4	3.91	4	.793
GST helps in growth of retail market	BN5	3.88	4	.782
GST is more transparent	BN6	3.93	4	.742

Source: Primary Data

Table portrays the various measures of benefits of GST. BN1 has the highest mean of 4.28 and mode value of 5. It can be concluded that GST ensures common rates and structures of tax across the country which is having the highest value of mean as well as mode.

## Problems

### Measures of problems

Measures	Item Acronym	Mean	Mode	SD
GST leads to imposition of more tax	PR1	2.33	2	.995
Price of the products increased	PR2	2.32	2	1.014
GST leads to decrease in profit	PR3	2.64	3	.959
Sales volume of business decreases	PR4	2.68	2	.920
Complications in registration	PR5	2.70	3	1.010
Inefficient web portal	PR6	2.51	2	1.030
Push to form new sales strategies	PR7	2.60	2	1.092
Increase black marketing	PR8	2.46	2	.958
Cost of business increased	PR9	2.34	2	1.066
Problems in distribution channel	PR10	2.47	2	.969
Difficult to avail the benefits of input tax credit	PR11	2.44	2	.978

Source: Primary Data

Table displays the various measures of problems. PR5 has the highest mean of 2.70 followed by PR4 with 2.68. It indicates that respondents feel certain complexities regarding the registration and they felt the sales volume of business also decreases.

## Satisfaction Level

### Measures of Satisfaction

Measures	Item Acronym	Mean	Mode	SD
Overall satisfaction with clarity in GST document and procedures	SL1	3.94	4	.750
Overall satisfaction with the service provided	SL2	3.78	4	.799

Overall satisfaction with attitude of tax officials	SL3	3.89	4	.777
Overall satisfaction with audit, investigation and assessment methods	SL4	3.76	4	.726
Overall satisfaction with tax administration systems	SL5	3.81	4	.748

Source: Primary Data

Table implies the various measures of satisfaction of dealers regarding GST. Mean for SL1 is highest of 3.94 where majority of the respondents feel satisfaction with clarity in GST document and procedures.

## Tax Compliance

### Measures of Tax Compliance

Measures	Item Acronym	Mean	Mode	SD
I have been paying my tax obligations correctly	TC1	4.23	4	.709
I have been paying my obligations on time	TC2	4.10	4	.718
I have no problem in complying my tax obligations	TC3	4.00	4	.682
I am fully satisfied with all the requirements imposed by the authorities	TC4	3.84	4	.788

Source: Primary Data

Table points out the various measures of Tax Compliance regarding GST. TC1 has the highest mean of 4.23. It indicates that the respondents are paying their tax obligations correctly. The mode is 4 for all the measures which convey the positive compliance behaviour of majority respondents.

### Measures of Variables

Measures	Item Acronym	Mean	SD
Awareness	AW	3.7820	.69171
Service Quality	SQ	3.7942	.55587
Benefits	BN	3.9950	.60879

Problems	PR	2.5050	.78244
Administration Mechanism	AM	3.7438	.55969
Satisfaction	SL	3.8360	.56524
Tax Compliance	TC	4.0425	.57850

Source: Primary Data

The mean and standard deviation of independent and dependent variables are given in Table. Mean is highest for Tax Compliance (TC) which is 4.0425 followed by Benefits (BN) with mean 3.9950. The mean of problem (PR) is lowest with 2.5050.

## Regression Analysis, Model Validation And Hypothesis Testing

### Correlation Analysis

Correlation analysis is carried out before conducting regression analysis in order to quantify the strength of relationship between the variables. It tests the linear relationship between the variables. Each correlation appears twice: above and below the main diagonal. The correlations on the main diagonal are the correlations between each variable itself.

#### Correlation between independent and dependent variable

Variable	AW	SQ	BN	PR	AM	SL	TC
Awareness	1						
Service Quality	.544**	1					
Benefits	.572**	.652**	1				
Problems	-.226*	-.221*	-.207*	1			
Administration Mechanism	.407**	.596**	.626**	.380**	1		
Satisfaction	.450**	.538**	.647*	-.225**	.803**	1	
Tax Compliance	.536**	.521**	.642**	-.295**	.529**	.551**	1

Source: Compiled by the researcher

\*\*Correlation is significant at the 0.01 level

\*Correlation is significant at the 0.05 level

The correlation coefficients between the independent variables like Awareness, Service Quality, Benefits, Problems and Administration Mechanism and the dependent variable Satisfaction and tax compliance are reported in the table. The correlation coefficient should always be in the range -1 to 1. A correlation is statistically significant if its P value  $<$  0.05 and P value  $<$  0.01. From the above table we can understand that there exists a high positive correlation between all variables except the variable problem. The variable problem has negative correlation with the other entire variable.

The correlation between various variables is as follows:

- The correlation between awareness and service quality is 54.4 percent
- The correlation between awareness and problem is – 22.6 percent
- The correlation between awareness and benefit is 57.2 percent.
- The correlation between awareness and administration mechanism is 40.7 percent
- The correlation between awareness and satisfaction is 45.0 percent
- The correlation between awareness and compliance is 53.6 percent
- The correlation between service quality and problem is -22.1 percent
- The correlation between service quality and benefit is 65.2 percent
- The correlation between service quality and administration mechanism is 59.6 percent
- The correlation between service quality and satisfaction is 53.8 percent
- The correlation between service quality and compliance is 52.1 percent
- The correlation between problem and benefit is -20.7 percent
- The correlation between problem and administration mechanism is -38.0 percent
- The correlation between problem and satisfaction is 53.8 percent
- The correlation between problem and compliance is -29.5 percent
- The correlation between benefit and administration mechanism is 62.6 percent
- The correlation between benefit and satisfaction is 64.7 percent
- The correlation between benefit and compliance is 64.2 percent
- The correlation between administration mechanism and satisfaction is 80.3 percent
- The correlation between administration mechanism and compliance is 52.9 percent
- The correlation between satisfaction and compliance is 55.1 percent.

## Regression Analysis

Regression analysis was conducted to measure the influence of AW, SQ, BN, PR and AD on SL and TC. The independent variables are AW, SQ, BN, PR, AD and dependent variables are

SL and TC. The main objective of regression analysis is to explain the variation in one variable (called dependent variable) based on the variations in one or more other variables (independent variables). If multiple independent variables are used to explain variation in a dependent variable, it is called a multiple regression model. The output of multiple regression analysis was used to test the hypothesis.

**Regression analysis between AW, SQ, BN, PR, AM and SL**

**Model Summary**

Model	R	R square	Adjusted R square	Standard Error of estimate	Durbin - Watson
1	.831	.691	.674	.32262	1.986

a. Predictor: (Constant) AW,SQ,BN,PR,AM

R square is the percent of the variance in the dependent explained uniquely or jointly by the independents. The R square and adjusted R square will be same when used for the case of few independents. The R square and adjusted R square shown in is almost the same.

Hence, adjusted R square value is used for interpreting the results.

Table shows that 32.36 percent variation in SL is explained by AW, SQ, BN, PR and AM. The Durbin – Watson statistic tests for autocorrelation. As rule of thumb, the value should be between 1.5 and 2.5 to indicate independence of observations (Garson 2010).The value of test is 1.986, which indicates independence of observations.

**ANOVA of regression model**

Model		Sum of Square	df	Mean Square	F	sig
1	Regression	21.846	5	4.369	41.979	000**
	Residual	9.784	94	.104		
	Total	31.630	99			

Predictors: (Constant), AW, SQ, BN, PR,

AM Dependent Variable: SL

\*\*denotes significant at 1 percent level.



ANOVA table showing the regression model fit presented in Table shows that the model is statistically significant at 1 percent significance level ( $F=41.979$ ).

#### Coefficients of regression analysis

Factors ( Constructs)	Item Acronym	Standard Beta Co-efficient ( $\beta$ )	Sig ( P value)
Awareness	AW	.308	.005**
Service quality	SQ	.241	.009**
Benefits	BN	.203	.022*
Problems	PR	-.157	.044*
Administration Mechanism	AM	.698	.000**

Source: Compiled by the Researcher

\*\*Denotes significance at 1 percent level

\*Denotes significance at 5 percent level

Table presents the Standardized Beta coefficient values and the significant values of independent variables awareness, service quality, benefits, problems and administration mechanism. The independent variable Awareness (AW), Administration Mechanism (AM) and Service Quality (SQ) are statistically significant at 1 percent significance level and the independent variables Benefits (BN) and Problems (PR) are statistically significant at 5 percent significance level. It means that four of the independent variables have positive effect on satisfaction level. From the Standard Beta Co-efficient value of the independent variable Problem (PR) we can understand that it has negative effect on satisfaction level. The beta coefficient gives a measure of the contribution of each variable to the model. Higher the beta value, greater is the effect of independent variable on the dependent variable. Among the independent variables Administration Mechanism (AM) has the greatest effect followed by Awareness (AW), Service Quality (SQ), Benefit (BN) and Problems (PR). Therefore, it is clear that these five independent variables have significant relationship with satisfaction of the dealers.

Hence, **H01, H02, H03, H04 and H05 are rejected.**

## Regression Analysis between SL and TC

### Model Summary

Model	R	R square	Adjusted R square	Standard error of estimate	Durbin - Watson
1	.551	.304	.297	.48510	2.260

Predictors (constant) SL

The R square and adjusted R square shown in Table is almost the same. Hence, adjusted R square value is used for interpreting the results.

Table shows that 48.510 percent variation in TC is explained by SL. The Durbin – Watson statistic tests for auto correlation which should be between 1.5 and 2.5 to indicate independence of observations. The value of the test is 2.260 which indicate independence of observations.

### ANOVA of regression model

Model		Sum of Squares	df	Mean Square	F	Sig
1	Regression	10.070	1	10.070	42.791	.000**
	Residual	23.062	98	.235		
	Total	33.132	99			

\*\*denotes significant at 1 percent level

ANOVA Table showing the regression model fit presented in Table shows that the model is statistically significant at 1 percent significance level (F=42.791).

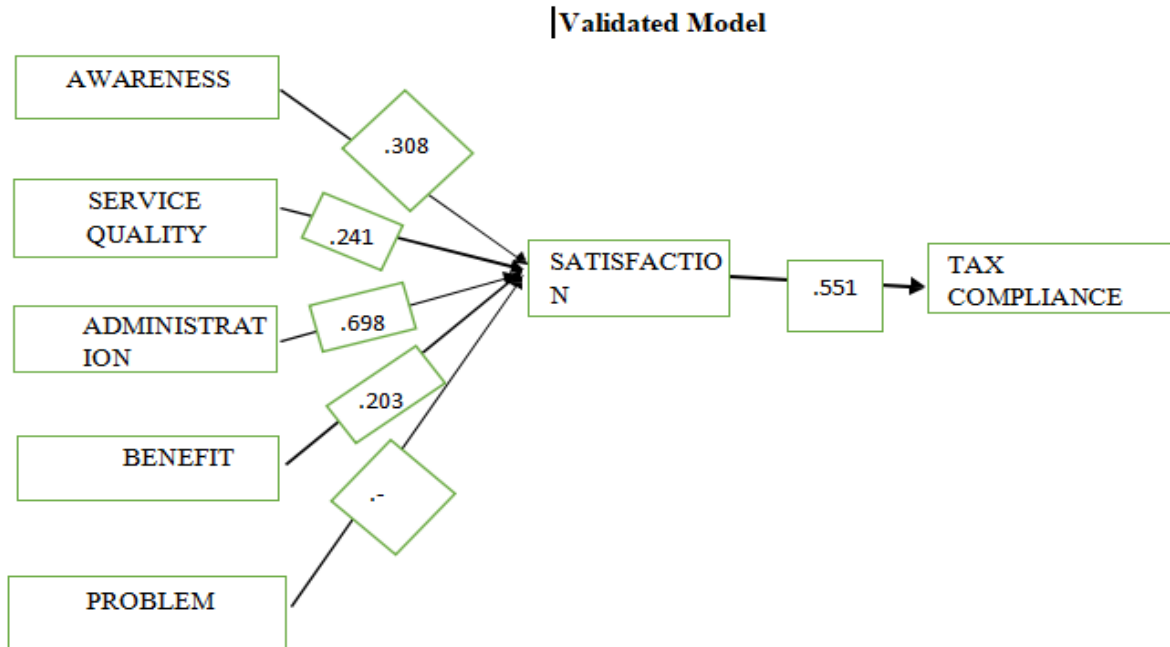
### Coefficients of regression analysis

Factors (Constructs)	Item Acronym	Standardized Beta coefficient ( $\beta$ )	Sig (P value)
Satisfaction	SL	.551	.000**

Source: Compiled by the Researcher

\*\*Denotes significance at 1 percent level

Table presents the Standardized Beta coefficient value and the significant value of independent variable Satisfaction. Satisfaction (SL), the independent variable is statistically significant at 1 percent significance level. Therefore, it is clear that the independent variable Satisfaction (SL) have significant relationship with the dependent variable Tax compliance (TC). **Hence, H06 are rejected.**



Source: Compiled by the Researcher based on Hypothesis tested.

Empirically validated model is portrayed in the Figure. Administration Mechanism ( $\beta = 0.698$ ) has the highest beta coefficient followed by Awareness ( $\beta = 0.308$ ), Service Quality ( $\beta = 0.241$ ), Benefit ( $\beta = 0.203$ ) and problem ( $\beta = -.157$ ). The beta coefficients of Awareness, Administration Mechanism, Service quality and satisfaction are statistically significant at 1 percent significance level ( $p < 0.01$ ) and Benefit and Problem are statistically significant at 5 percent significance level ( $p < 0.05$ ).

Based on the above model it is understood that all 6 null hypothesis are reject and there exists a strong relation between variables. Based on the Standardised beta co-efficient given in the above table following interpretations can be made:

**H01:** Awareness – Satisfaction: Since the P value is .005, the beta coefficient of the variable is significant and the coefficient (.308) being positive proves there exist a positive relation between awareness and satisfaction of dealers regarding GST. In short Awareness has relationship of 30.8 percent over satisfaction of dealers.

**H02:** Service Quality – Satisfaction: Since the P value is .009, the beta coefficient of the variable is significant and the coefficient (.241) being positive proves there exist a positive relation

between Service Quality and Satisfaction of dealers regarding GST. In short Service Quality has relationship of 24.1 percent over Satisfaction of dealers.

**H03:** Administration Mechanism – Satisfaction: Since the P value is.000, the beta coefficient of the variable is significant and the coefficient (.698) being positive proves there exist a positive relation between Administration Mechanism and Satisfaction of dealers regarding GST. In short Administration Mechanism has relationship of 69.8 percent over Satisfaction of dealers.

**H04:** Benefit – Satisfaction: Since the P value is.022, the beta coefficient of the variable is significant and the coefficient (.203) being positive proves there exist a positive relation between Benefit and Satisfaction of dealers regarding GST. In short Benefit has relationship of 20.3 percent over Satisfaction of dealers.

**H05:** Problem – Satisfaction: Since the P value is.044, the beta coefficient of the variable is significant and the coefficient (-.157) being negative proves there exist a negative relation between Problem and Satisfaction of dealers regarding GST. In short Problem has negative relationship of 15.7 percent over Satisfaction of dealers.

**H06:** Satisfaction – Compliance: Since the P value is.000, the beta coefficient of the variable is significant and the coefficient (.551) being positive proves there exist a positive relation between Satisfaction and Compliance among dealers regarding GST. In short Satisfaction has relationship of 55.1 percent over Compliance of GST.

### Summarized Findings

The major perceptions of dealers which have significant relationship with Satisfaction are Administration Mechanism and Awareness. Quality of Service offered by the officials also plays an important role in the satisfaction of dealers.

- I. The variables benefit positively influence the satisfaction of dealers while the variable problems have a negative impact on satisfaction of dealers.
- II. From the analysis we can come to an inference that the satisfaction of perception of dealers regarding GST contributes to the proper Compliance of the system.

### Suggestions (Practical contribution or Managerial Implications)

Following are the suggestions to be considered:

- ❖ Sufficient measures should be taken by the department and authorities to increase awareness among dealers about the negative list and composition scheme of GST.
- ❖ Departments should give special and individual attention towards the need of dealers.
- ❖ Findings of the study show that the people are facing certain complexities while filing

of returns during the relevant periods. It should be addressed.

- ❖ Certain measures are required to satisfy dealers with all tax requirements imposed by the authorities.
- ❖ Take necessary actions to make the dealers satisfy with Audit, Investigation and Assessment method.

### Scope of Further Study

The research study is limited to a few factors. It explores only the relationship between perception, satisfaction and compliance of dealers regarding GST. The scale of experiment can be further enlarged. Some extraneous variables which ignored in the present study can be further controlled and the experiment can be strengthened as a standardized research tool. There are various factors that affect the satisfaction and compliance of dealers towards GST system other than mentioned in the study.

### Conclusion

In this context the present study attempts to unearth the answers to the research questions of satisfaction of perception of dealers affecting compliance. It was found that satisfaction is dependent on various measures of perception such as Awareness, Service Quality, Benefits, Problems and Administration Mechanism. Satisfying the perception of dealers may lead to the proper compliance of the system some measures are to be taken for making them satisfied which will automatically resulted in the voluntary and proper compliance of the system. It can bring a positive change in the attitude of the dealers towards compliance of GST especially when their perception regarding the system is satisfied. Hence, the study is quite relevant and timely from the view of both academics and authorities.

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# A study on examination of rise in resale and second-hand markets

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## Abstract

*Over the last decade, the global expansion of resale and second-hand marketplaces has altered consumer behaviour and retail dynamics. These marketplaces have grown significantly across a variety of sectors, including fashion, electronics, and furniture, owing to increased environmental consciousness, economic considerations, and the appeal of distinctive, vintage things. Technological improvements and the proliferation of internet platforms have exacerbated this trend by making it easier for people to acquire and sell used products. As customers prioritise affordability, sustainability, and originality, the second-hand market is expected to play a significant part in the future of commerce.*

*Keywords: Fututre Trends, Quality, Popularity*

## Introduction

Purchasing and selling used goods is a notion that is as old as trade itself. But the second-hand and resale market has seen a remarkable comeback in recent years, moving from being a specialized industry to a major player in the economy. This emerging business is transforming the way we consume things due to a variety of issues, including as shifting customer tastes, environmental concerns, and economic pressures. Reselling was formerly limited to garage sales and thrift stores, but these days it has a thriving internet presence with specific platforms that link buyers and sellers worldwide.

This change has made previously inaccessible goods more widely available, promoting a circular economy that puts an emphasis on resource efficiency and sustainability. In this analysis of the resale market, we will look at the variables influencing its expansion. These marketplaces, which were formerly deemed niche, have now become mainstream, thanks to a mix of economic, environmental, and social factors. Consumers are increasingly using resale

and second-hand options to acquire unique things, save money, and lessen their environmental impact.

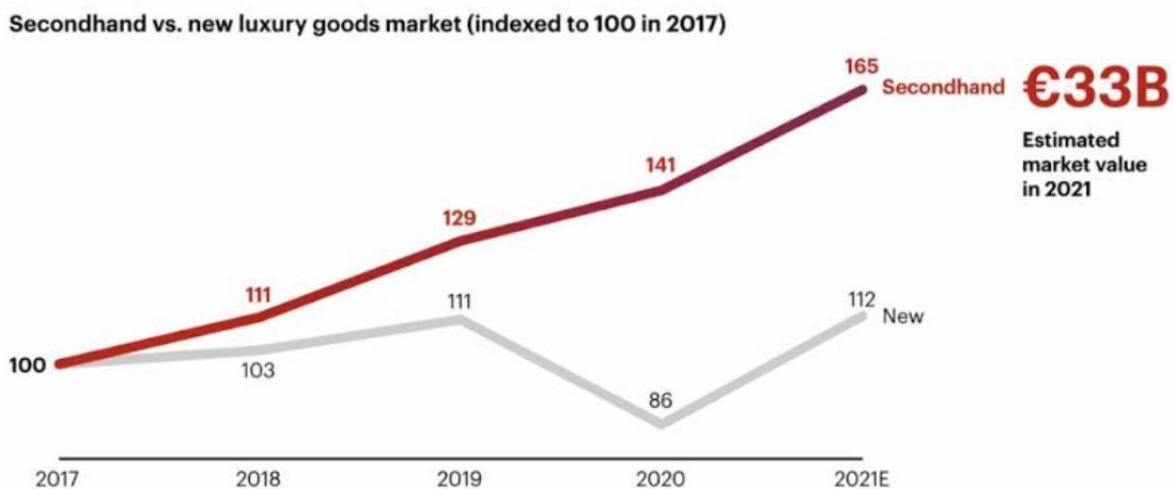
This trend is redefining traditional retail environments and changing the way brands and merchants operate. To understand the growth of these markets, it's important to examine consumer motives, environmental impact, and emerging business structures.

### Objectives

- To analyse the key factors driving the surge in popularity of resale and second-hand markets
- To examine how the rise of resale is impacting traditional retail businesses
- To explore potential future trends in the resale market

### Statement of Problem

The expanding second-hand sector poses a challenging dilemma. While it provides environmental and economic benefits, it presents challenges in assuring authenticity, upholding quality standards, promoting equal access, reducing environmental footprint, protecting customer data, and adjusting to a quickly changing regulatory context. These difficulties need creative solutions for establishing a sustainable and inclusive second-hand ecosystem that benefits both customers and traditional retail. The research study involves a thorough examination of the projected outcomes and data has additionally been gathered from periodicals and the internet.





## Review of Literature

- **Thamoda Geegamage and Dr. H.R Achini Ranaweera (2021)** presumes that the 2019 Pulse of the fashion industry report discovers that the series of sustainability progress in the industry of fashion has slowed by third in the previous year and not moving fast to counter balance the misdeed impact of rapid growth in the fashion industry. Fashion industry will be the net contributor for the climate change, increasing the obstacles which that promising of keeping global warming below one and half degrees Celsius during the reminding years will be not achieved if this circumstance of the fashion industry continue in the future, as long as fashion industry ranks the first place out of environment polluting industries. The state of the environmental pollution caused by the fashion industry has no recover but rising day by day. This systematic literature review identified four main themes related to circular economy, sustainable consumption, and second-hand fashion consumption.
- **Assist. Prof. PhD Yulia Hristova (2019)** assumes that Second-hand goods have been popular in their use since the time of bartering, and in the context of digitalization, they are gaining popularity among consumers around the world, especially the X, Y and Z generations. The resale market is a worthy alternative and a competitive threat to the new consumer goods one not only for economic consumer reasons but also on a social and ethical ones. Content analysis of research papers shows that studies related to the development of the second-hand goods market and the factors that motivate consumers to participate are therefore few and there is no systematized statistical information for this type market segment. Considering the rapid development of the resale market which is scarcely researched, this paper investigate some of the major trends in the second hand goods market, their causes and impact on retail in the digital society.

## Research Methodology

The study employed a descriptive research design to explore the factors influencing purchasing decisions in resale markets and to understand the perceptions and behaviors of young adults regarding these markets.

## Participants

Participants were young adults aged 18 to 25 years. The sample was selected using random sampling to ensure a representative mix of demographics and backgrounds. A total of [number] respondents participated in the survey.

## Data Collection

Data was collected through an online survey, which included structured questions designed to capture various aspects of purchasing behavior in resale markets. The survey consisted of both closed-ended and open-ended questions to gather quantitative and qualitative data. The survey questionnaire was divided into sections, each focusing on different aspects of the research:

- Demographics and participation in resale markets.
- Factors influencing purchasing decisions (price, uniqueness, sustainability).
- Perceptions of quality and reasons for purchasing in resale markets.
- Types of products purchased and preferences.
- Recommendations and future trends in resale markets.

The questionnaire used a Likert scale to measure the level of agreement or disagreement with various statements.

## Data Analysis

Data analysis was performed using descriptive and inferential statistics:

- **Descriptive Statistics:** Frequencies, percentages, and means were calculated to summarize the data.

### Data Analysis and Interpretation

- ✓ From the below image 1.1 and 1.2 it is evident that majority of the respondents are in the age of 18 to 25 and also majority of them have not purchased the resale process

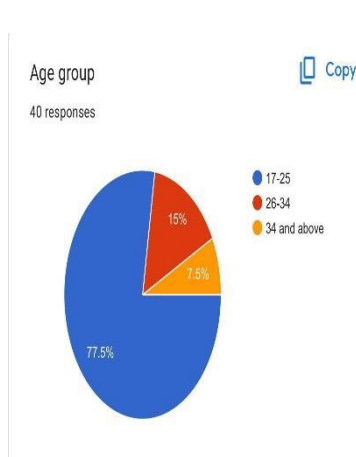


Fig.1.1

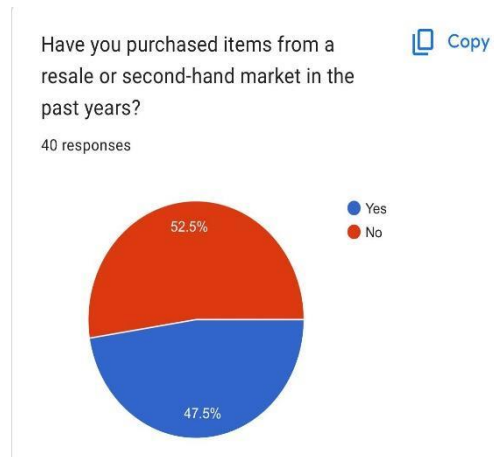


Fig 1.2

✓ From the below image 1.3 and 1.4, it is inferred that the major respondents consider sustainability when making purchasing decisions and it is understood that minority of the respondents believe that resale markets offer better value for money as compared to traditional retail.

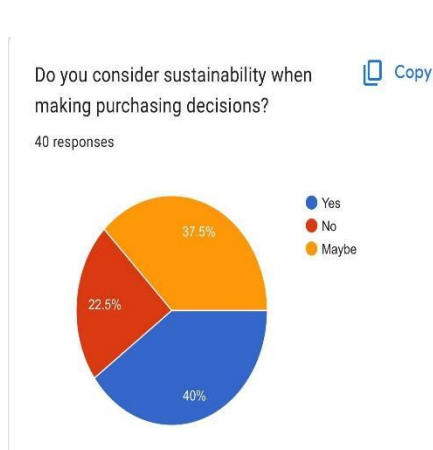


Fig.1.3

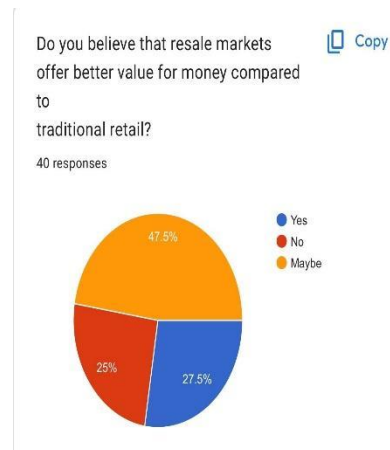


Fig.1.4

✓ From the below image of 1.5 and 1.6, major respondents consider price as an important factor in making purchasing decisions in the aspects of resale markets and also consider uniqueness of the product as a key factor.



Fig.1.5

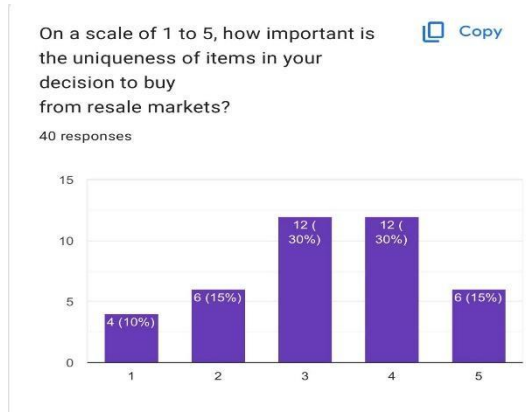


Fig.1.6

- ✓ From the below image 1.7 and 1.8, the major respondents say that quality of the product in resale market is more likely that of the traditional market and also it is understood that the major reason for the purchase in second hand markets is due to lower prices.



Fig.1.7

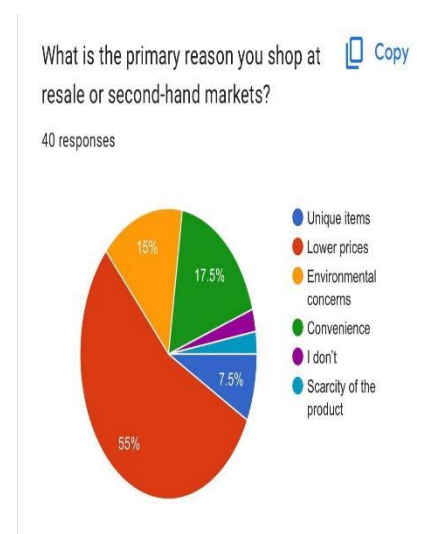


Fig.1.8

- ✓ From the below image of 1.9 and 1.10, the major purchasers in second hand markets are likely to buy books and it is understood that people are more likely to purchase on second hand markets over traditional retail stores.

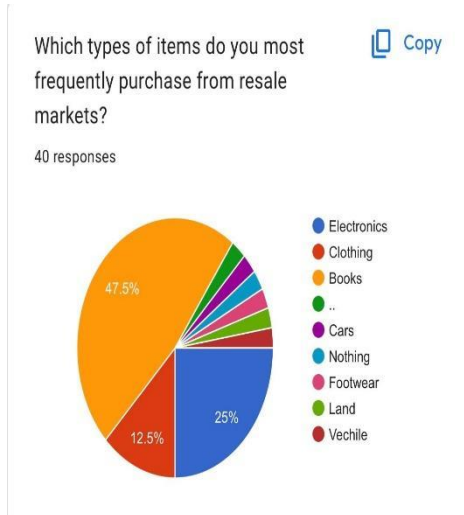


Fig.1.9

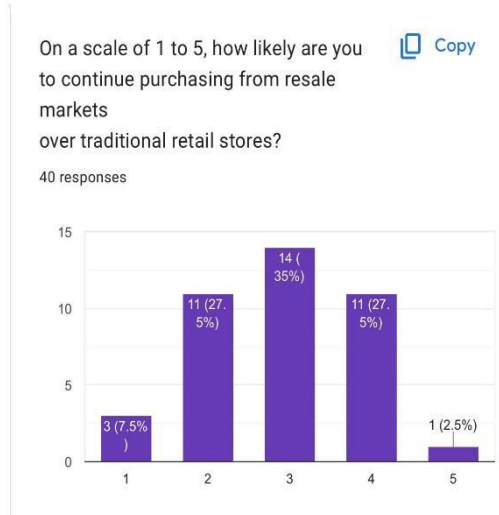


Fig.1.10

- ✓ From the image 1.11 and 1.12, most of the respondents are likely to recommend resale and second hand markets to friends and families and it is also inferred that the enhanced quality and authenticity will shape the future of resale and second hand markets.

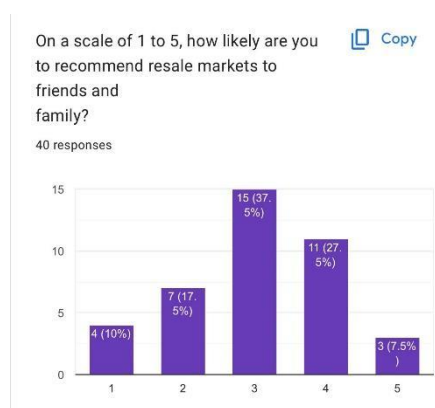


Fig.1.11

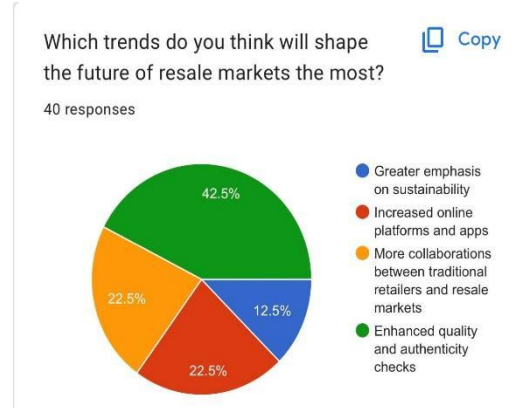


Fig.1.12

## Findings

- Majority of respondents are aged between 18 to 25 years.
- Most respondents have not engaged in the resale process.
- Price is a crucial factor for the majority when making purchasing decisions in resale markets.

- Uniqueness of the product is also a key factor in purchasing decisions.
- A significant number of respondents consider sustainability when making purchasing decisions.
- A minority believe that resale markets offer better value for money compared to traditional retail.
- Many respondents perceive the quality of products in resale markets to be similar to that of traditional markets.
- The primary reason for purchasing in second-hand markets is lower prices.
- Books are the most commonly purchased items in second-hand markets.
- There is a preference for purchasing from second-hand markets over traditional retail stores.
- Most respondents are likely to recommend resale and second-hand markets to friends and family.
- Enhanced quality and authenticity are believed to shape the future of resale and second-hand markets.

## Suggestions

Suggestions: Increase awareness about the benefits of resale markets among those who have not yet participated.

- Highlight success stories and positive experiences of current users to encourage new participants.
- Ensure competitive pricing and highlight the unique aspects of products to attract more buyers.
- Offer special deals or discounts to make resale markets more appealing.
- Promote the sustainability benefits of purchasing from resale markets.
- Partner with environmental organizations to create campaigns that emphasize the eco-friendly nature of resale shopping.
- Maintain high quality standards to build trust and attract more customers.
- Implement quality checks and provide authenticity guarantees to reassure buyers.
- Encourage sellers to offer a wider range of products to cater to diverse interests.
- Focus on categories like books, which are popular among buyers, and explore other potential high-demand categories.

## Conclusion

The study reveals that young adults aged 18 to 25 are the primary demographic engaging with resale markets, with price and uniqueness being key factors in their purchasing decisions. Sustainability is also an important consideration for many, although only a minority see resale markets as offering better value than traditional retail. The quality of products in resale markets is generally perceived as comparable to traditional markets, and the lower prices are a significant draw. Books are the most frequently purchased items, and most respondents are likely to recommend resale markets to others. Ensuring high quality and authenticity is crucial for the future growth of resale markets. The rise of the resale and second-hand market represents a significant shift in consumer behaviour, fuelled by a variety of factors such as economic considerations, environmental consciousness, and a desire for distinctive, frequently high-quality products. This booming market has upended established retail methods, opening new opportunities for both enterprises and consumers.

As customers become more aware of the environmental impact of rapid fashion, the second-hand market provides a sustainable option by minimising waste and prolonging product lifecycles. Furthermore, the economic benefits are apparent, since they provide affordable options for customers while still earning cash for sellers. While difficulties such as authenticity, quality control, and logistics must be addressed, the general trend of the resale and second-hand markets is indisputably positive. Technology continues to improve.

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# An analysis of Indian consumers' purchasing patterns for green items

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## Abstract

*In an effort to preserve natural resources and safeguard the environment for sustainable development, consumers, businesses, and governments worldwide have recently embraced green marketing. First and foremost, one of the reasons green marketing emerged as a novel approach for organic products was environmental concerns. In order to make "green products" more affordable and environmentally friendly for consumers in various social strata, green marketing can expedite and cover this process. It's true what they say, "Charity begins at home," thus each and every person should take the required actions to promote environmentally friendly items in order to slow global warming. Keywords: eco-friendly marketing, problems with eco-friendly products, green code, green p's.*

*Keywords: green marketing, green market evolution, green code, green p's, eco friendly*

## Introduction

The late 1980s and early 1990s saw the introduction of green marketing, a relatively recent trend in business. Sales of the product started in Europe in the early 1980s when consumers switched to green items altogether because they believed that some products were bad for the environment and society. Producers and consumers alike are growing increasingly attuned to the quick transition from conventional to environmentally friendly goods and services in order to fulfill demanding environmental standards.

Consequently, the concept of "green marketing" emerged, referring to the rise in sales of sustainable growth and socially conscious goods and services in the market. Sustainable progress is defined as "meeting the needs of the current generations without compromising the capability of future generations to meet their own requirements" by the World Commission on Environment and Development. It is also closely related to topics like producer responsibility, life-cycle analysis, material consumption and resource flows, eco-efficiency, and industrial ecology and environmental sustainability.

Renowned economist Lionel Robinson believes that all financial resources are limited and have other uses for the people. Since human demands are limitless and income is finite, it is critical for producers to use their resources wisely and efficiently to meet the organization's goals without wasting any. Accordingly, green marketing cannot be avoided (Nadaf, 2014) [1].

A product is deemed "green" if it:

- It produces the least amount of herbal effect.
- Make the product with consideration for the environment.
- Prevents air pollution, water pollution, and regional infections.
- It protects the natural resources, such as water and energy.
- Uses materials produced from recyclable sources.
- Is using a person's own luggage instead of plastic baggage.
- It is synthesized domestically (Diglel & Yazdanifard, 2014) [2].

### Evaluation of the literature

Climate change, the quick depletion of natural resources, and biodiversity loss are some of the issues facing civilization in the twenty-first century. Green marketing is a vast topic with significant effects on public policy and commercial strategy. It makes it very evident that green marketing is integrated into the broader business plan (Elemeen, 2015) [3].

Elkington defines a "green consumer" as someone who steers clear of goods that could endanger their health or the health of others, cause significant harm to the products being manufactured, use an excessive amount of energy, waste unnecessary resources, contain materials derived from endangered species or environments, involve the needless use of or cruelty to animals, or have a negative impact on other nations (Boztepe, 2012). [4]

After reviewing the relevant research, Polonsky (1994) identified a number of potential justifications for businesses to use green marketing. Going green is just smart business. The goal of green marketing is to help the company reach its goals (Singh S. P., 2008) [5]. Only 10% of all customers in Europe are able to identify the natural product or green energy labels on the goods that are sold in supermarkets across the continent, according to the European Union's consumption survey.

While environmental development has advanced at a rapid pace in our nation's businesses, we cannot claim to have attained the same level of consumer sensitivity. In the West, corporate organizations are implementing environmental consciousness through "green policies."

### **Interpretation and explanation**

"All activities designed to generate and facilitate any exchange intended to satisfy human needs or wants such that satisfying these needs and wants occur with minimal detrimental input on the national environment" is how Mr. J. Polonsky defines "green marketing." *Multidisciplinary Research and Development: An International Journal* 81 "Green marketing" is a comprehensive marketing concept that generates a wide variety of actions wherein goods and services are manufactured, promoted, used, and disposed of in a way that is less detrimental to the environment and society.

Advertising and marketing of items that are assumed to be ecologically secure is considered inexperienced marketing, according to the American Marketing Association. A wide range of actions are included in inexperienced advertising, including as product notice, production process improvements, packaging changes, and improved marketing. Ecological marketing and environmental marketing are other terms that are used similarly.

### **Green marketing's evolution**

Over time, the unskilled advertising has grown in sophistication. Peattie identifies three phases in the development of inexperienced advertising. During this time, the first phase of green marketing was referred to as "ecological" marketing. It entailed informing consumers about environmental concerns and offering solutions. The second phase of "environmental" green marketing saw a shift in emphasis toward clean technologies used in the creation of new goods that address waste and pollution problems. The third stage of green marketing was "sustainable," which gained popularity in the late 1990s and early 2000s (Chitra, 2015) [6].

**Green code G:** Use caution when making generalizations. Consumer behavior won't be consistent across product variations, and certain market segments may react favorably to some green agenda items while other segments won't.

**R:** Keep in mind that the degree to which a piece of market research supports your favored choice does not necessarily correspond with its strength.

**E:** Examines the context in which market research data is obtained. It must be evident what sort of samples to use, what questions to ask the consumers, how they should respond, and when and where the replies are coming from.

**E:** Ensures that the terms and explanations are consistent while doing market research across international borders. It is not always the case that terms like "environment," "green," and "conservation" translate precisely between languages.

**N:** Assures that neutrality is crucial. Make sure that when you pose questions to customers, they are free to respond in any way without feeling pressured or awkward. Additionally, make sure that the questions do not contain any implicit assumptions about the green. Finally, one or more of the aforementioned green words may be included when referring to a good or service when using the term "green." Generally speaking, it refers to green consumption in its whole (Aggarwal, 2014). [7]

Several theories have been put out by the literature research as to why more organizations are using green marketing. Five factors explain why they are. Numerous organizations note that environmental marketing presents a chance to leverage in order to accomplish the organization's goal.

- The organization considers it their moral duty to take more social responsibility.
- The government pressuring businesses to take greater responsibility.
- Firms are compelled to alter their environmental marketing strategies due to competition.
- Businesses are forced to change their ways due to the high cost of items related to trash disposal or material consumption reductions (Bhalerao, 2014). [8].

### **Difficulties with Environmental Marketing**

The area of green marketing has several obstacles, some of which may be listed below.

#### **Standardization of the items is necessary**

It is well recognized that just a small percentage of the green movement's claims are valid and that they represent doable, everyday actions. The green product cannot be measured with a yardstick because it is an organic product.

## **Novel Idea**

Customers come from all walks of life, and they are progressively raising awareness about environmentally friendly products. However, it's a novel idea for a lot of individuals. It is crucial for each and every person to educate others about how we are destroying our environment. They may increase the market's sales of green products by leveraging the Indian Ayurvedic legacy.

## **Long gestation times need perseverance and patience**

It's been noted that corporations and investors ought to see the environment as a long-term investment opportunity. The reason for this is that green product projects take a while to provide the intended outcomes (Singh S., 2012) [9].

## **Eight essentials for effective green advertising**

There are several approaches to successfully use green marketing. Green marketing is a method that may help you increase sales and client base, not just a catchphrase. We need to conduct things correctly if we want to attract more and more clients. We should take the following actions in order to effectively implement green marketing. They're Being Sincere

## **The four green Ps**

**Green Product:** Features such as energy efficiency and organic origin are indicative of green products. Pollution and resource usage are thereby decreased.

**Green Price:** If a product has a good value in the market, a lot of people are willing to pay more for it.

**Green Place:** The primary goal is to lessen the carbon footprint associated with transportation logistics.

**Green promotion:** It establishes a connection between a product and the environment to encourage a green lifestyle and presents a business image that is environmentally conscious.

## **Environmental labeling**

It offers details on how well the items perform in terms of the environment.

- The primary goal of eco-labelling is to certify genuine claims made by businesses on the environmental effect of their processes and goods.

- Since 1981, the Indian government has introduced the eco-mark label program. The initiative aims to lessen the unfavorable environmental effect of its products by offering incentives to importers and producers.
- To acknowledge the sincere efforts made by the firms to lessen the unfavorable effects of their goods' environmental impact.
- To assist customers in adopting a more ecologically conscious lifestyle.
- To motivate consumers to buy items with little environmental effect.

#### **Programs for eco-labeling in India**

- The Indian government's Ministry of Environment and Forests has established the following standards for items.
- The environmentally friendly items that lessen pollutants in a comparable manner to other products.
- Certain things cannot be recycled or reused, but green products can.
- Green goods help lessen health issues related to the environment.
- Green products comply with environmental laws, norms, and regulations.
- The cost of green items is not significantly higher than that of regular products.

#### **Eco-labelling results in**

- It enhances the items' sales and image.
- It is important to educate consumers about the items that cause more environmental harm.
- It has resemblance to goods that comply with the BIS equal vent standard.
- One possible application for the packing material is recycling.
- Manufacturers ought to provide customers with comprehensive usage instructions (Anand, Sharma, & Khanna, 2014) [10].

#### **Eco-friendly advertising instruments**

Tools like environmental advertising, eco-labels, and eco-brands will facilitate thinking and raise awareness of the qualities and attributes of green products. The results will direct customers toward buying environmentally friendly goods. These tools are crucial in changing customer buying habits so that they purchase environmentally friendly goods. Hartmann and Ibanez state that green marketing often concentrates on the effectiveness of cognitive persuasion techniques and holds that consumers' high level of engagement with

environmental concerns is a result of their increasing environmental awareness (Delafrooz, Taleghani, & Nouri, 2014) [11].

According to Stanton and Futrell, "actions intended to replace current needs and wants with minimal harmful impact on our environment" are what constitute green or environmental marketing.

According to Ginsberg and Bloom, not every company would benefit from the same marketing instrument. Instead, tactics must to vary according to various markets and the level of environmental awareness among consumers (Shah & Pillai, 2012). [12]

### **Green marketing's advantages**

As technology advances these days, a large number of new items are available on the market thanks to customer demand. They are becoming aware of the surroundings now. As a result, an organization adopts the same philosophy as its customers and continues to uphold their morals by decreasing the manufacturing of products that hurt the environment. If businesses ever want to become green, there are several benefits to consider. The benefits are

- Workers who work for environmentally conscious organizations do so with pride and joy; in other words, they are inspired by the organization to give their all in whatever they do.
- Every organization will incur higher initial costs, but after a few years, they usually result in long-term cost savings.
- By keeping environmental problems in mind, new inventions or products provide the firm a chance to expand into new markets for their goods and services.
- It ensures the business will grow profitably and for the long run.
- Producers get the advantage over rivals and are granted access into new markets.
- Manufacturers may claim a higher price for goods that are visible.
- A green product is one that is beneficial to the environment or the ecology. Green products, according to Shamdasami, won't harm the environment or belittle finite resources since they will be recycled or preserved. These days, businesspeople are more concerned about the environment, which increases market rivalry.
- Any of the following characteristics can qualify a product as green. They're
- Products that are environmentally friendly, refillable, and recyclable.
- Products that are safe for eating and cover or restore harmless biological substances.

- The goods that do not harm or pollute the environment.
- Products that have not been tested on animals for the first time.

### **In summary**

Regarding green marketing, the customers made it clear that they were aware of and eager to purchase items under the green brand. Although switching from traditional to green marketing is challenging in the current environment, customers are becoming more conscious of the value of eco-friendly products. It indicates that both the business and the environment are doing well. For manufacturers, green marketing is a useful tool for product sales, but it must be used responsibly. The company is unable to spearhead green marketing.

Revolution until consumers begin to consider that becoming green is preferable. The only thing that can rescue the environment is to love the natural world. We, as humans, are responsible for conserving fuel, water, and other resources.

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# Integrating circular economy principles into business models: aligning corporate strategies with SDGs 9 and 12 for sustainable development

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## Abstract

*This paper examines the connection between SDG 9 (Industry, Innovation, and Infrastructure) and SDG 12 (Responsible Consumption and Production) in corporate strategies, focusing on the rise of circular business models. The circular economy concept is emerging through a process of learning by doing, while traditional linear production models dominate the old economy. SDG 9 aims to promote resilient settlements, sustainable industrialization, and innovation, while SDG 12 emphasizes the need to change consumption habits, efficiently use resources, and reduce waste. Together, these goals encourage a shift from consumption of goods to services that support the circular economy. The study using qualitative methods, highlights how businesses are transitioning from linear models to circular and green approaches, reducing waste through practices like recycling, reuse, and remanufacturing. These efforts are reinforced by three key components: innovation, infrastructure investments, and policy support. By embedding circular economy principles into their operations, companies can improve resource efficiency, reduce environmental pollution, and establish sustainable production patterns in alignment with SDGs 9 and 12. The study underscores the importance of collaboration between industry, government, and consumers in achieving these sustainability goals. It positions the circular economy as a vital pathway toward long-term sustainability, fostering a balance between economic growth and environmental protection.*

*Keywords: Circular Economy, Sustainable Development Goals (SDGs), SDG 9, SDG 12, Responsible Consumption, Sustainable Production, Recycling, Reuse, Remanufacturing.*

## Introduction

Circular Economy (CE) and the Sustainable Development Goals (SDG) are principles of great importance that are gaining momentum in the world today. Their primary aim is to

conserve the environment through reduction in wastage, proper use of resources and conservation of the ecosystems. The Circular Economy encompasses the concept of development of infrastructure that will entail that products, materials and any other resources will be reused, repaired and recycled that will lead to lower environments footprints while as for SDGs it is a wider blue print which has been designed by the United Nations in order to promote development that is sustainable in terms of economic expansion, upliftment of the society and conservation of the environment. This study aims to penetrate the understanding, viewpoint and impact that CE principles and SDGs has on consumer behaviour and the business practices. Therefore, awareness of these aspects will be employed to assess the importance attached to Business strategy alignment with CE and SDG principles. Moreover it will be conducted that an analytical research study regarding the various impacts of linking the cost of designing C.E. practices and implementing them regarding the quality products returned within the market and their cost to clients.

### Objectives

The particular study focuses on the level of awareness and importance given by consumers/ businesses to principles of sustainable economy and SDG. Further, to investigate how new practices of the circular economy together with the reduction of effluents, increased recycling, longer life products and more efficient resource management resonate in consumer purchases and business innovation.

The study is done to reflect the transformation of the market through adoption of methods for sustainable business regarding environmental sustainability and development. Serving those goals, the study tries to elucidate on how the market trends are influenced by default.

### Review of Literature

**Trollman & Colwill (2021)** in the research article “The imperative of embedding sustainability in business: A model for transformational sustainable development” emphasizes the necessity of embedding sustainability within business frameworks, suggesting that a clear understanding of the relationship between societal purpose and business operations is crucial for transformative change.

**França et al. (2017)** in the research article "An approach to business model innovation and design for strategic sustainable development" argue that business models must articulate their purpose in terms of sustainability, advocating for a strategic approach that clarifies the connection between business operations and sustainable development. Their model indicates that sustainability can act as a catalyst for organizational change, which is vital for aligning with SDGs

**Tapaninaho & Heikkinen, (2022)**, in the research article "Value creation in circular economy business for sustainability: A stakeholder relationship perspective" illustrates the role of circular economy practices in enhancing business sustainability is further supported by their findings. Who illustrate how stakeholder relationships contribute to value creation in circular economy business models. Their research underscores the importance of aligning business strategies with sustainability goals, thereby reinforcing the connection to SDGs 9 and 12.

**Sun et al. (2021)** in the research paper titled "Improving the E-Commerce Business Model in a Sustainable Environment" provide a framework for assessing business model sustainability, highlighting the competitive advantages that can be gained through sustainable practices. Their findings demonstrate that businesses prioritizing sustainability not only contribute to global environmental goals but also gain resilience against regulatory pressures and shifting market expectations.

**Matinaro et al., (2019)**, in the research paper "Extracting key factors for sustainable development of enterprises: Case study of SMEs in Taiwan" who identify key factors that contribute to the sustainable development of enterprises. Their findings suggest that transitioning from traditional business models to sustainable ones is essential for long-term success.

**Stewart & Niero, (2018)**, in the research article "Circular economy in corporate sustainability strategies: A review of corporate sustainability reports in the fast-moving consumer goods sector" who review corporate sustainability reports and find that many companies are beginning to incorporate circular economy practices into their sustainability agendas.

**Khan et al. (2020)**, in his research paper titled "Micro foundations of dynamic capabilities: Insights from circular economy business cases" further support this by discussing how circular

economy strategies can enhance corporate sustainability, providing insights into the micro foundations of dynamic capabilities necessary for such transitions.

**Ho et al., (2022)**, in the research article “ The collaborative and contested interplay between business and civil society in circular economy transitions” who explore the interplay between businesses and civil society organizations in advancing circular economy practices. This collaboration is essential for fostering responsible business models that align with societal expectations and sustainability goals and also highlights the collaborative role of civil society in facilitating these transitions.

**Bocken et al. (2019)**, in the research article titled “Sustainable business model experimentation by understanding ecologies of business models” explores extensively on sustainable business model experimentation illustrates the necessity of intentional design in business models to achieve desired sustainability impacts. Their research emphasizes the importance of understanding the ecological and social contexts in which businesses operate, thereby reinforcing the need for alignment with the SDGs.

### Statement of Problem

This paper analyses and explores the integration of Circular Economy (CE) principles and Sustainable Development Goals (SDGs), in particular SDG 9 (Industry, Innovation, and Infrastructure) and SDG 12 (Responsible Consumption and Production), in business models. The issues are investigated across the spectrum of businesses and consumers, looking at the awareness and perception of CE and SDGs, and how this shapes corporate strategies. This paper attempts to investigate the effects of CE practices including, recycling, reuse, and remanufacturing on product quality, cost, availability; and it shows how innovation, infrastructure development and policy supports these associations.

### Research Methodology

This research was conducted with the help of both primary and secondary research to examine how circular economy (CE) and Sustainable Development Goals (SDGs) are integrated into business models. First-hand information was initially collected through an online structured questionnaire that was distributed to a pool of 100 respondents who are a mix of students, business owners, and industry professionals. The research investigated issues such as the environment-friendly manufacturing of waste materials e.g. recycling and product redesign,

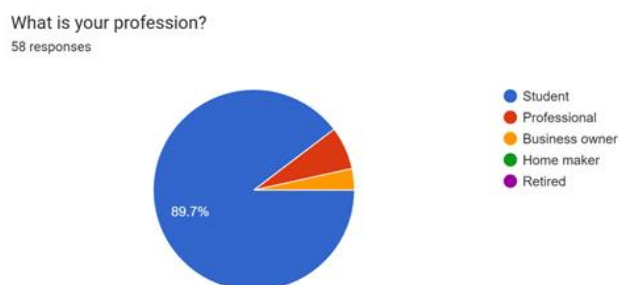
the compatibility of the set goals with SDGs with SDG 12 (responsible consumption) and SDG 13 (climate action) and the impediments in practicing a sustainable way of model. The insights offered by the respondents also included the relationship between CE principles and business productivity and their impact on personal sustainability goals.

For the secondary research, first went through detailed existing literature, case studies, and reports on the issues of the integration of circular economy principles and SDGs into the corporate policies of companies. Named companies were included as well for this study such as Patagonia, Unilever, and IKEA, which are among those that embody the concept of sustainability in their strategic plans. Thus, the parallel approach employed in the research allows the detection of the key issues yielding the integration of circular economy principles and gives a systematic view of the sustainability landscape.

## Data Analysis and Interpretation

### Professional Demographics and Their Role in the Integration of Circular Economy Principles into Corporate Strategies

**Chart 1: Profession of the respondents**



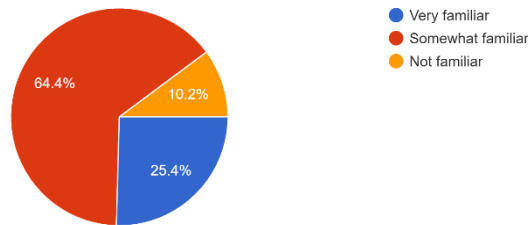
The survey data shows that 89.7% of respondents are students, making them the dominant group. A smaller percentage consists of professionals and business owners, with even fewer homemakers and retirees. This suggests that interest in circular economy principles is particularly high among younger, academic individuals, likely reflecting a strong engagement with sustainability and future-oriented business strategies. While professionals and business owners have more practical experience with corporate strategies, their lower representation highlights the need for greater outreach to these groups to understand the real-world integration of circular economy principles.

## Familiarity with Circular Economy Concepts and SDGs Among Respondents

Chart 2

How familiar are you with the concepts of the Circular Economy (reuse and regeneration of materials or products) and the Sustainable Development Goals ?

59 responses



Data from the survey indicates that a majority of respondents (63.8%) had knowledge about circular economy and sustainable development goals. This point towards an increasing concern and interest in the sustainable practices by the target audience. A small fraction (10.3%) revealed that they are familiar with it to some extent but only 25.9% were completely oblivious to it. This implies a solid basis for incorporating circular economy principles into corporate strategies yet widespread understanding and acceptance of such practices need proper targeting through outreach and education initiatives.

### Key Circular Economy Practices Observed (Rank in order of importance)

Chart 3

Which aspects of circular economy business practices have you observed in products or services within your industry or as a consumer? (Rank in order of importance, 1 being most important)

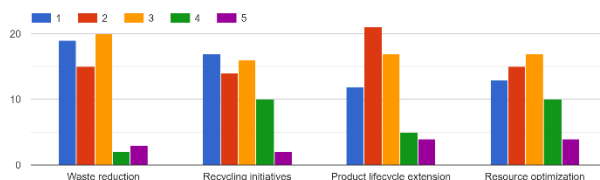
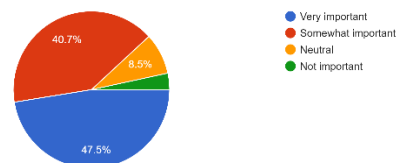


Chart 4

How important is it to you that businesses in your sector or those you purchase from align their strategies with sustainable goals like SDG 9 (Ind...SDG 12 (Responsible Consumption and Production)?

59 responses



Recycling initiatives were valued, this means that consumers are more and more willing to pay for companies which would help reduce their environmental effects and thereby engage in sustainable practices. In fact, those firms that properly adopt waste reduction measures and take part in recycling schemes have higher chances of achieving a competitive edge as demand for products and services associated with circular economy continues to rise. Furthermore, another significant point raised by respondents is the need for organizations' strategies to align with UN's Sustainable Development Goals (SDGs) especially number nine (SDG9) and twelve (SDG12); hence showing how such firms can secure their competitiveness through their commitment towards sustainability policies.

To what extent do circular economy (reuse and regeneration of materials or products) principles impact your purchasing or business decisions?  
59 responses

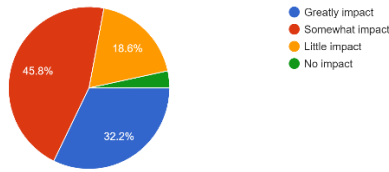


Chart 5

Would you be more likely to support businesses that fully integrate circular economy principles, whether as a consumer, professional, or entrepreneur?  
59 responses

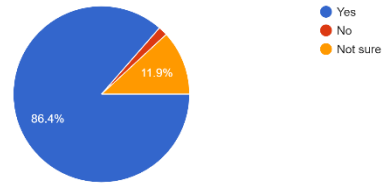


Chart 6

## Impact of Circular Economy Principles on Purchasing and Business Support Decisions

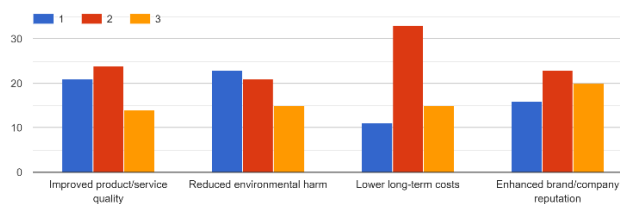
An overwhelming majority of respondents (78%) indicated that circular economy principles significantly impact their purchasing or business decisions, highlighting the growing demand for sustainable products and services. Companies that effectively integrate these practices into their operations are likely to gain a competitive advantage.

Additionally, 86.4% of respondents expressed strong support for businesses fully embracing circular economy principles, with only 11.9% less likely to support such businesses and 1.7% uncertain.

## Key Benefits of Adopting Circular Economy Principles in Business and Consumer Behavior

Chart 7

How would you rank the following benefits of businesses adopting circular economy principles in terms of relevance to your field or personal purchase...nk in order of importance, 1 being most important)



The most significant benefit perceived by embracing the principles of the circular economy includes highly reduced long-term costs, with financial sustainability being central to business and consumer purchasing decisions. Improved product and service quality, as well as greater brand reputations, were also other benefits that scored highly, indicating these areas were essentials for many.

While its lowered environmental impact was constantly appreciated, it obtained lower scores than the merit factors of cost and brand. In other words, the findings imply that firms which



are lowering their costs and offering quality products besides sustainable process can have an edge over others in serving needs to customers and ensuring competitive advantages.

## Result and Discussion

This research paper focuses on the integration of circular economy principles into corporate strategies, specifically aligning with SDG 9 (Industry, Innovation, and Infrastructure) and SDG 12 (Responsible Consumption and Production). Here, a study reveals that though linear models seem to rule the corporate world, there is a massive shift to circular approaches, which include recycling, reuse, and remanufacturing. The study based on qualitative data indicates most respondents are students with a high interest in sustainability, though knowledge about circular economy concepts varies. Some crucial findings are that recycling practices are highly valued, and businesses adopting these principles will likely gain a competitive edge. About 78% of respondents say that circular economy principles influence purchasing decisions, while 86.4% reported to show strong support for businesses embracing these practices. Compared to the traditional linear economy, embracing circular economy principles provides for savings in the long run, better quality products, and increased brand reputation, albeit with acknowledged effects on the environment.

## Conclusion

There is increasing interest in embracing the principles of the circular economy especially among the younger generations. The wide knowledge of these principles and SDGs takes little deeper steps in integrating these into corporate strategies. The practice of recycling and waste reduction is favored and forms core circular economy activities; hence the need to create support toward these by SDG 9 and SDG 12. Adoption of circular economy principles in purchasing and business decisions, bringing to light the need for companies to adopt sustainable practices as a way to stay competitive, is another area that this study upon conducts. Generally, embracing principles of circular economy as a way provides long-term reductions in cost, better quality, and improved reputation for brands-a critical premise for sustainable business development.

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# A Study on Buyer Perception towards Branded Fashion Industry

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## Abstract

*This research provides valuable insights into sustainable marketing strategies that fashion brands can use to promote culture and policies in local markets. It provides guiding concepts for marketers and marketers in the fashion industry. Presenting a positive image of the country of origin and focusing on the brand's image and quality will influence purchasing decisions. The fast fashion business has come under fire for its detrimental effects on social justice, the environment, and the economy. This method helps to understand consumer attitudes and shows the complex interaction between economic considerations, ethical awareness and environmental awareness in fashion choices. The purpose of this study is to examine the role of game values in relation to consumers' perceptions of brands, and its effects on consumer relationships and brand value. The research shows growing consumer awareness of the negative effects of fast fashion, including environmental degradation and questionable labor practices, the demand for value and attention to condition. As a result, a lot of companies use sustainable marketing techniques to support environmentally friendly production and motivate sustainable consumer behavior.*

*Keywords: Brand equity, Purchase Behavior, Fashion Industry, Consumer Perception.*

## Introduction

This research is about the fast fashion industry, which has seen a huge growth in profits and sales. This growth can be attributed to improvements in design, manufacturing, logistics and marketing that encourage consumers to buy more product. As a result, the industry has introduced sustainability programs that focus on environmental, social and economic issues. These programs also consider various aspects of the marketing mix such as product, price, location and marketing, which organizations focus on sustainability to maintain growth. Liu et al It implies that sustainability includes economic, social and environmental responsibility.

A dynamic and multifaceted sector, the fashion industry has long been at the forefront of international business and culture. The evolution from traditional methods to a new fast fashion, and now to a sustainable fashion, reflects the changing attitudes of consumers and the challenges of life.

This research paper explores this shift, assessing consumer perceptions of the fast-paced versus sustainable trend and its implications for marketing strategies. Characterized by fast production, turnover and affordable prices, fast fashion changes the fashion world by bringing the latest trends from the runway to the stores in record time.

### Literature of Review

- **Choi et al., (2022),** Identified three basic components of positioning: strategy, product and market. A strategy is a customer-focused business approach that uses a bottom-up approach to meet the unique needs of a small market that is growing its customer base.
- **Kakambi and Phiri, (2022),** The study focus on social media platforms allow fashion companies to engage with consumers, promote their products, and sell them.
- **KEN KUMAGAI (2020),** Author defines consumer attitude based on product sustainability and brand loyalty. The purpose is to give strategic suggestion to vesture companies trying to invest in sustainable development of plastic apparel. The result was founded the sustainable plastic clothes raises on branded attitude.
- **JUNG-HWANKIM (2019),** Analyzed the High /Low/Middle income generation y luxury fashion brand own Sanctioned website. The Study Compared tradition VS modern retail. It was founded unbelievable values and benefits to fortune brands focus on consumer richness.
- **McNeill and Moore (2015),** Examined the three categories of fashion consumers: "personal", "social", and a broader group of mainly "affected" consumers. These groups look at fast fashion in conflicting ways, which is important for the marketing of the right fashion products for each group. Understanding these customer segments can help fashion brands adjust their marketing strategies.

### Objective of the Study

- To determine the demographic profile of respondent.
- To analyze the factor influencing buyer perception towards branded fashion industry.

### Limitation of the Study

- The survey is limited to brand stores and the responses collected from the sample size are based only on the current situation.
- The survey was conducted over a short period and included 120 consumers from the city of Chennai.

## Data Collection and Analysis

The data has been collected both using primary and secondary sources. Primary data includes information gathered through questionnaire based on perception of customers using branded fashion industry. Secondary data includes the information gathered from periodicals, Journals, Newspaper, Magazines and more websites.

## Research Tools

Following research tools were used to draw the wind-up.

- Multi Regression Analysis.
- Factor Analysis.

## Hypothesis

**H0:** There is no significant relationship between Demographic and Brand.

**H1:** There is a significant relationship between Demographic and Brand.

**H0:** There is no significant relationship between Factor Effects and Fashion Industry.

**H1:** There is a significant relationship between Factor Effects and Fashion Industry.

## Data Analysis and Interpretation

**Table: 1 Variables in the Multi Regression Analysis**

Predictor variable	Criterion variable		
	B Value	T Value	P Value
Constant	.928	3.662	.000
Income level	.414	2.930	.004
Amount spend for shopping	1.006	6.345	.000
Educational status	.148	2.469	.015
Branded fashion industry	2.080	6.304	.000
R =.260;R Square =.068;F = 8.587;P = .004			

The buying behavior of the respondent will serve as significant predictor and explain the variance in independent variables.

## Inference

The above table explains the model summary of the coefficient of regression by taking buying behavior as a predictor variable to explain its relationship towards the independent variable like Income level, Amount spend for shopping, Educational status, and branded fashion industry.

**Table : 2 Explained A Factor Analysis Total Variance Explained**

Component	Initial Eigen values			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	11.405	42.241	42.241	11.405	42.241	42.241	8.581	31.782	31.782
2	2.122	7.858	50.099	2.122	7.858	50.099	4.946	18.317	50.099

**Extraction Method: Principal Component Analysis.**

## Interpretation

Factor analysis is used in data reduction to identify number of factors that explain most of the variance observed in a much larger number of manifest variables . In order to simplify the findings, a varimax orthogonal rotation was performed on an initial factor solution. Factor analysis of this variable set with varimax rotation extracted twenty seven factors which explained 50.099% of the total variance.

## Findings and Suggestions

- Branded retail should be started in many areas. So that customer will be profitable in terms of locations.
- Competition is likely to excite and keep domestic players on their toes.

## Conclusion

Consumers get satisfied as the outlets meet their hopes, good quality of services, Satisfied purchase decision where all the variables lead to customer loyalty and in turn initial repurchase. Innovate and create strategy to satisfy existing consumers and to attract new customers by offering more existing discounts. People are adapting themselves to the changing environment day by day which enables them to gain more knowledge and intelligences. The acquisition made an increase in

the needs, wants and expectations of customers, where they expect to gain higher satisfaction from each and every product they consume.

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# Consumer Buying Behaviour of Organic Products towards Online Shopping with Special Reference to Cosmetics (Theoretical Framework)

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## Abstract

*The market for the Organic product is immensely increasing. The main purpose of this study is to understand the consumer buying behaviour of organic cosmetic products. Health and environmental consciousness is the primary reason to shop the organic cosmetic products. Health conscious Consumers, quality hunter and environmentalist prefer organic cosmetic products more. Label contains product certification makes the consumer to trust the product which shapes consumers buying decision. Consumers are still finding difficult to identify the online platform to shop organic cosmetic products. College students and working women are the major respondents seeking more for the organic cosmetic products. The online marketer needs to implement strategically to build trust, to increase awareness and opportunities for both seller and the consumer.*

*Keywords: Organic cosmetic products, Consumer behaviour, online shopping, cosmetic industry.*

## Introduction

Organic Products are naturally safe, manufactured ecologically and environmentally Which does not contain any synthetic inputs such as pesticides and chemical fertilizers, and do not processed with irradiation, industrial solvents etc. Now-a-days cosmetics have become an essential part of people's daily lifestyles. In this internet era consumers have been aware of Ingredients used in the cosmetic products which create negative impact on both healthy life and environmental sustainability. Thus the market players in the cosmetic industry strategize on promoting their organic cosmetic products on online platforms.



## Objectives

1. The main aim is to study the consumer buying behaviour of organic cosmetic products.
2. To identify the values of consumer that induces to use organic products.
3. To study the types of consumers using organic cosmetics.

## Significance of the study

This study provides insights into the factors influencing online purchase decisions to marketer to adopt sustainable business practices in production, packing and distribution. Understanding the characteristics of organic cosmetic products valued by consumers can guide the organic cosmetic start-ups in developing new products or improving the existing as per consumer taste and preferences.

## Review of Literature

WararatWiwatanaputit (2007): This study spotted the reason that the preference of organic products by consumers is high quality and USDA organic certification. The Non users were difficult to buythe organic products through online.Key findings highlighted that there is an increase in the purchasing of products or a transformation from the status of being a non user or former user to become the current user of organic products.

Matea Matić & Barbara Puh (2016): Determined the variables influences consumer's intentions towards purchasing natural cosmetics. Statistical analysis derived that consumers purchase tendency towards new natural cosmetics brands have an influence on consumer purchase intentions. His key findings says thatconsumers' tendency towards health consciousness has no influence on consumers' intentions towards purchasing natural cosmetics. Results of the analysis indicate that there is a strong positive correlation between purchase intentions towards natural cosmetics and consumer Preferences of natural cosmetics.

Johri and Sahasakmontri (1998): Defined Female consumers shopping behavioural pattern and purchase attitude towards organic cosmetic products. Findings revealed that the consumers are strongly believed, that only chemical-free cosmetic products will maintain and improve the youthful look. Derived the results that the purchase intention and shopping behaviour of female consumers towards organic cosmetics are influenced by their health and environmental consciousness.

Soyoung Kim, Yoo-KyoungSeock (2009): Investigated college students shopping behavioural patterns and their attitude towards purchase of natural products. The results showed that health and environmental consciousness significantly influenced the importance placed on cosmetic product attributes. The findings states that health and environmental consciousness are significantly related to the young respondents' perceived level of knowledge of beauty products and ability to differentiate organic cosmetics from non organic. This leads to have frequent purchase of natural cosmetic products.

Rachita Kapoor, Anurupa B Singh, RichaMisra (2009): Empirical analysis represented that business marketer should focus on the labelling and certification of the organic cosmetics which would satisfy the consumers concern for organic environment. This paper attempted to identify the various hidden difficulties faced by consumers while switch over from chemical cosmetics to chemical free Cosmetics products

Sara teixeira, zailaoliveira, sandrineteixeira (2023): This research aimed at understanding the impact online communication strategies on consumer purchase intention on organic cosmetics. Theory of planned behaviour were adopted which measured specifically attitude and subjective norms. The findings interprets other variables such as electronic word of mouth (e-WOM), influencer marketing and brand content also influence the consumer buying intention. The result of the study reveals valuable information for professional and academics, to understand the factors that motivate the intention to purchase green cosmetics, contributes to the implementation of better online communication strategies.

### **Organic cosmetic products**

Organic cosmetics are more popular among the female consumers especially working women and college girls as they use skin and hair products daily. The organic cosmetics are eco-friendly, skin – friendly, and non chemical substances. These products are manufactured out of plant & fruit extract, seeds, natural oil and others. Now-a-days online shoppers are aware of the harmfulness of chemical substances and goodness of chemical free substances used in the cosmetic products. Conventionally the Para ban and sulphate free hair care products and PH level point based skin care products are generally preferred by the consumers. Some of the most commonly used kinds cosmetic products are skin care, Hair care, and Oral care. Apart from these basic needs makeup products are also the most

important of cosmetics. These personal care, skin care and oral care can be used to cleanse or protect the body and skin.

### **Background of Organic Cosmetic industry**

Cosmetic market has rapidly increasing in India. More number of natural cosmetic brands of foreign countries has entered our domestic market. The segment of this market has categorised into cosmetic skin care, hair care, oral care, fragrances and colour cosmetics, perfumes and colour cosmetics. Due to healthy lifestyles and other environmental reasons consumer's choice is to prioritise organic, herbal and ayurvedic cosmetics. The market for organic cosmetics is expanding globally (Onel, 2016). India also is the leading country which has biggest organic cosmetic market like Japan and Korea. In India the organic cosmetics market generated as estimated valuation of US\$ 17601.4million in 2019. During this 2024 the organic cosmetic market is projected to generate revenue of INR US\$0.94 bn. The reason to rise in revenue is to support eco – friendly products, increasing consumer awareness, influence of social media, expansion of distribution channels and clean label products which strongly trusted as safer and healthier. Organic cosmetics contains natural ingredients which contribute anti-oxidation properties improves skin immunity is the most beneficial factor for the market growth. Thus it is evident that the demand for organic cosmetics has increased by frequent shopping globally by worldwide consumers.

### **Organic Cosmetic firms**

Earlier, people did not have much knowledge, so they used chemical based products. Now with advancement of technology and growing business world, people become more aware about pure organic products. So the demand for organic beauty products has increased. Investing in beauty products would be more profitable for the entrepreneurs. Some of the organic cosmetic firms are Black pearl cosmetic manufacturer, AG organic, Blushbee etc. Some of the organic cosmetic brands are Tattvalogy, Pahadi local, Forest essentials, purearth much more.

### **Global Certification Agencies**

Obtaining cosmetic certifications represents quality standards of the product. Label of cosmetic products with certification transforms that the product are pure natural, safe and ethical. NPA Label for cosmetics and personal care product is an essential which indicates truly made up of natural ingredients. The major certification agencies for natural and organic

products are: Bundesverband Deutscher Industrie und Handelsunternehmen (BDIH) in Germany; National Association for Sustainable Agriculture, Australia (NASAA) in Australia; Soil Association Organic Standard in United Kingdom; Instituto Biodinâmico de Certificações (IBD) in Brazil; ECOCERT in France; Istituto per la Certificazione Eticae Ambientale (ICEA) in Italy; Quality Assurance International (QAI) in United States of America; Oregon Tilth in United States of America; Cosmetics Organic Standard (Cosmos) in European Union (EU).

### **Consumer behaviour**

Understanding consumer buying behaviour by marketer is very difficult. Still certain factors like age, gender, income level of consumer, influence consumer decisions, marketer should determine the buying reasons like how and in which circumstances purchase and consume the product. Consumer behaviour is a continuous process, because there can be continuous changes in taste, ideas, preferences, perceptions and activities of consumer. After pandemic consumers are well realised that intake of organic food is not only determines health benefits and nutritional value, but have gained knowledge about usage of organic cosmetic is also significant for their healthier lifestyle. However the Social media marketing plays a crucial role in consumer behaviour, It helps the consumer to obtain the product knowledge. Product knowledge persist the quality, certification, brand, advertising, discount, Price and online platform.

### **Types of Consumers**

In olden times, Women used organic and homemade cosmetics for skin, hair and oral care. Due to environmental factors both gender is interested in consuming organic cosmetic products. Consumers are generally categorised as health-conscious consumer who derives health benefits from the product; the environmentalist, who is always seeking for environmental protection; and quality product hunter who realize that natural products are safe and do not cause health hazards.

### **Specific values of consumer in consumer behaviour**

According to kotler and keller (2018) consumer buying behaviour is related to how consumers purchase goods, services, ideas or experiences to meet their needs and desires. Consumer buying pattern is generally based on certain factors such as cultural, social, personal, and psychological realms, which finds the basic attitudes and views of consumers.

So Understanding the Health, Social, and environmental values in consumer behaviour is complex. Consumers are deeply influenced by health aspects. Health information described in the label of the product shows the quality and standard of the product. Since the organic skincare, hair care and oral care products used for personal hygiene, and provide a luxurious experience, especially makeup products used to enhance their features and boost confidence, consumers do not consider though it is expensive.

According to Milton Rokeach, social values are the most significant concept in Social science. He briefly discussed about consumer behaviour in his pivotal 1973 book, in a section titled "Inconsequential Findings"(alluding to the acquisition of a car), his viewpoint as implemented to consumer research appears well-founded because studies investigating customer means-end chains repeatedly finds that value fulfilment is frequently the primary reason why consumers choose products. Consumer derives emotional and intangible benefits from the organic products. These values have an impact in product selection and particularly brand selection.

### **Personal Care Products**

Skincare products are the products used to improve skin health and appearance. Generally, it includes cleansers, moisturizers, serums, and sunscreens. These products cleanse, hydrates and protect the skin. Skincare professionals help to choose the right products for consumer needs. Haircare products include shampoo, conditioner, hair oil, hair serums and hair styling equipments. These products cleanse, nourish and shine the hairs. Consumers believe in regular use of hair care products like oil, promotes the growth of hairs.

Makeup products are cosmetic items used to enhance consumer's face appearance. Generally, these products include products like foundation, blush, eyeshadow, mascara, lipstick, and more. These products are used to express creativity, enhance their features and boost confidence. Bath and body products are used for personal hygiene, skin care and self-care. These include products like washes, soaps, body lotions, scrubs, and more. These products help to maintain personal hygiene, nourish the skin and provide a luxurious experience.

## Conclusion

The consumer buying behaviour of organic cosmetic product is mainly based on consumers health & environmental consciousness. Social and economic values also determine the purchase intention to choose the product. Though social media platform supports the marketer to reach the targeted consumer, purchase cosmetics through online is difficult. Online shopping of organic cosmetics has still not been widely accepted by the consumers due to trustworthiness of the brand or the company. The online marketer needs to be an establish trust, to increase awareness and opportunities for both seller and the consumer.

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# A study on the consumer preference on Google Pay, PhonePe mobile application other than mobile banking

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## Abstract

*The advent of mobile payment applications has transformed the way consumers engage with financial transactions, offering a modern alternative to traditional mobile and net banking services. This study investigates consumer preferences among Google Pay, PhonePe, and conventional banking services, aiming to understand the factors driving the adoption of these technologies. The research employs a mixed-methods approach, including quantitative surveys and qualitative interviews, to capture a comprehensive view of user experiences and preferences. The study begins by analyzing the key attributes of Google Pay and PhonePe, such as user interface, transaction speed, security features, and integration with other services. These attributes are compared against traditional banking services, which include mobile banking apps and online banking platforms. Data collected from a diverse sample of users provides insights into their preferences and attitudes toward each platform. The study also identifies demographic variations in preferences, with younger users showing a stronger inclination towards mobile payment apps due to their tech-savvy nature and desire for streamlined financial management. Older demographics, however, tend to prefer traditional banking methods, valuing the established security and personal support offered by these services. Overall, the research highlights the growing acceptance of mobile payment applications while underscoring the need for continued improvements in security and user experience. These findings offer actionable insights for financial institutions and mobile payment providers to enhance their services and better align with consumer expectations in the evolving digital payments landscape.*

*Keywords:-Google Pay, Consumer Preferences, Digital Payments, Security Features*

## Introduction

The landscape of financial transactions has undergone a significant transformation with the rise of mobile payment applications. As technology continues to advance, consumers are increasingly turning to platforms like Google Pay and PhonePe for their convenience and



efficiency, moving away from traditional mobile and net banking services. These mobile payment applications offer innovative features that promise to simplify transactions, enhance user experience, and integrate seamlessly with other digital services. Google Pay and PhonePe are among the leading mobile payment platforms in the market, each offering unique benefits and functionalities. Google Pay, known for its integration with the broader Google ecosystem and its ease of use, provides a streamlined payment experience. PhonePe, with its extensive range of services including bill payments, recharges, and financial investments, caters to a diverse user base with its versatile offerings. By examining factors such as user experience, security, transaction speed, and overall convenience, the research seeks to provide a comprehensive understanding of why users choose one service over another. Additionally, the study will investigate demographic differences in preferences to uncover how age, technological familiarity, and other factors influence user choices. Understanding these preferences is crucial for financial service providers as they navigate the competitive digital payments landscape.

### Statement of the Problem

The study aim to find out the features available in mobile payment applications .To analyse why most of the customer preferring mobile payment application than mobile banking.

### Significance of the Study

E-payment app services are widely used by all people in the world, especially youth more prefer nowadays. All the business man are reducing cash transaction for the purpose of claiming deduction in total income for return filing of income tax, so all of them prefer electronic payment. In that e-payment app services plays a major role and it becomes the part of the life. So this study is based on customer satisfaction level and perception towards usage of e-payment app services.

### Review of Literature

**SatinderBal Gupta, R. K. (2020)** The use of E-payment system is increasing at a very fast rate. Day by day the numbers of users are moving towards online payment systems instead of using plastic money like cash etc. Making online transactions is very convenient and time saving. People can pay online not only for shopping but also for different purposes as many different apps are available that offers many services to the users. This paper studies the reasons of increasing popularity and use of payment apps by the people of India for making payments online and the

continuous growth of these payment apps in India. The authors of this paper analysed three most popular payment Apps used in India namely, Google Pay, Phone Pay and Paytm.

**Dr. S. Poongodi, D. P. (2021)** Digital payment system is gaining popularity due to the 'Digital India' campaign introduced by the government of India. There are various forms of digital payment system. Data for the study have been collected from 150 customers through issue of structured questionnaire by adopting snowball sampling technique. Simple Percentage, Weighted Average Ranking and Chi-square test have been used to analyze the data. The study reveals that majority of the customers are female with the age of below 30 years and majority of them are undergraduates employed in private sector with an earning of up to Rs.20000 per month and they are aware about Google pay through friends, relatives and by themselves. The reasons for using Google Pay are mobile recharge followed by payment of EMI, DTH recharge, payment of insurance premium, settlement of hotel bill, payment of electricity bill, ticket booking, bank transfer and online purchase. Chi-square test reveals that age, educational qualification, occupation, period of usage, frequency of usage, level of awareness are significantly associated with the level of usage of Google Pay

### Objective of the Study

1. To find out the feature available in mobile payment applications.
2. To analyse the factors that drive consumer preference for mobile payment applications.
3. The identify demographic variations in preferences, examining how factors such as age, technological proficiency, and income influence the choosing the mobile payment applications.

### Research Methodology

The primary data were used for the study. Data have been collected through questionnaire method and survey method. 80responses have been collected from vellore district. Secondary data have also been used for the study. Percentage method is used for analyzing the gathering data.

## Data Analysis and Interpretation

**Table -1 Demographic profile of the bank customers**

Particulars	No. of Respondents	Percentage
<b>Gender</b>		
Male	44	54
Female	36	45
Total	80	100
<b>Age</b>		
Below 30 years	60	75
31-45 years	16	20
45-60 years	3	3.75
Above 61 years	1	1.25
Total	80	100
<b>Educational Qualification</b>		
Up to Higher secondary	16	20
Undergraduate	46	58
Postgraduate	17	21
Diploma	1	1
Total	80	100
<b>Type of bank</b>		
Private bank	24	30
Nationalised bank	56	70
Total	80	100
<b>Monthly income</b>		
Below Rs.10000	27	33.75
10001 to 20000	21	26.25
20000 to 50000	23	28.75
Above Rs.50000	9	11.25
Total	80	100

1. It is inferred that majority of the respondents are male.
2. Majority of the respondents are in the age category of less than 30 years.
3. It is concluded that majority of the respondents are undergraduate.
4. Majority of the respondents are having bank account in Nationalised bank.
5. Most of the respondents come under the income group of less than Rs.10000.

**Table 2 The Features Available In Mobile Payment Application**

Factors	V.G	Good	Avg	Poor	V.P	Total scores	Mean scores
Simplicity	5	29	42	3	1	274	3.43
Speed	3	45	28	3	1	286	4.65
Good Image Resolutions	6	24	40	9	1	265	3.31
Flexibility	4	40	24	6	3	267	3.34
Search options	9	26	39	5	1	277	3.46
Security	5	30	29	15	4	260	3.25
Bright and bold colour schemes	4	40	32	3	3	243	3.56
Push notification	3	45	25	5	2	235	3.75
User feedback	6	24	24	8	1	210	3.85
Updates	5	25	24	8	1	310	3.68

It is informed that statement speed has secured maximum scores, followed by statement user feed back. The statement push notification, updates, bright and coloured scheme have secured third, fourth, fifth and sixth places respectively.

**Table 3 Customer Prefer Mobile Payment Application**

Factors	V.G	Good	Avg	Poor	V.P	Total scores	Mean scores
Device used(Smartphones, tablets)	7	22	51	4	0	264	3.3
Services offered (Limited)	5	30	36	8	1	270	3.38
How to access (Customers only require a User ID and password to use banking services online)	8	33	36	4	0	288	3.6
Ease (Easy to use and can be used on the go)	5	32	31	9	3	267	3.34
Push notifications (Customers receive notifications regarding banking offers, exciting deals and more)	8	19	45	3	3	264	3.3
Other service(Mobile banking can be access through SMS)	10	24	24	5	1	272	3.4

It is concluded from Table 2 that the statement services offered has got maximum scores followed by the statement easy to use. The statement how to access, other service, services offered, push notifications, device used have secured third ,fourth ,fifth, sixth, places respectively.

## Suggestions

To enhance consumer satisfaction and foster greater adoption of mobile payment applications such as Google Pay and PhonePe, while addressing the continuing relevance of traditional banking services, several key suggestions can be made.

Firstly, it is crucial to invest in advanced security technologies for mobile payment platforms. Incorporating features such as biometric authentication and multi-factor authentication can significantly improve user trust by addressing concerns about fraud and data breaches. Additionally, transparency in communicating security measures can help build confidence among users. Simplifying navigation and reducing the number of steps required for transactions can enhance overall satisfaction. Furthermore, enhancing customer support with responsive and accessible channels, including live chat and 24/7 assistance, can address user issues more effectively. Integrating additional features such as budgeting tools, investment options, and loyalty programs can make these platforms more attractive. Collaborating with merchants and service providers to offer seamless payment experiences and rewards can further increase user engagement. Addressing the needs of different demographic groups is essential. Tailoring features and services to cater to the preferences of various age groups and technological proficiency levels can make mobile payment applications more appealing.

Promoting awareness and adoption of mobile payment apps can be achieved through targeted marketing strategies. Highlighting the unique benefits of these apps, such as convenience and ease of use, while addressing security concerns, can attract new users. Offering incentives such as discounts, cash backs, or referral bonuses can further encourage the use of mobile payment applications. Integrating digital tools and services into traditional banking can offer a more cohesive and efficient financial experience, helping to retain users who value established security and personal support. Implementing these suggestions can help financial service providers and mobile payment developers better meet consumer needs, improve satisfaction, and navigate the dynamic landscape of digital and traditional financial services.

## Conclusion

In conclusion, the study of consumer preferences between mobile payment applications such as Google Pay and PhonePe highlights significant shifts in the financial services landscape. Mobile payment applications have rapidly gained popularity due to their convenience, speed, and innovative features. However, concerns about security and data privacy remain crucial factors influencing user choices. Traditional banking services continue to be valued for their established security measures and reliability, even though they may lack the user-friendly interface and swift transaction capabilities of mobile apps.

To address these evolving consumer preferences, it is essential for mobile payment providers to enhance their security features, streamline user experiences, and broaden their service offerings. By investing in advanced technologies and transparent security measures, providers can build trust and address concerns that impact adoption rates. Additionally, understanding and catering to demographic differences in user

Overall, both mobile payment applications and traditional banking services have unique strengths and challenges. Financial service providers should strive to blend the best aspects of both worlds, ensuring that they meet the evolving needs of consumers while maintaining high standards of security and service. By doing so, they can better position themselves in a competitive market and enhance the overall financial experience for users.

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# The Role of Artificial Intelligence in Achieving the Sustainable Development Goals

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## Abstract

*Artificial intelligence (AI) has emerged as a transformative technology with the potential to significantly influence global efforts towards achieving the Sustainable Development Goals (SDGs) set by the United Nations in the 2030 Agenda for Sustainable Development. This paper explores the dual role of AI as both an enabler and a potential inhibitor of progress towards these goals. By examining AI's applications across various sectors, including agriculture, healthcare, education, and energy, the study highlights how AI can accelerate progress, improve efficiency, and address complex global challenges. However, it also underscores the risks associated with AI, such as exacerbating inequalities, data privacy concerns, and ethical dilemmas. The paper calls for responsible AI governance, increased collaboration among stakeholders, and further research to fully harness AI's potential while mitigating its risks. Ultimately, AI has the capacity to drive transformative change, but its successful integration into sustainable development efforts requires careful consideration of ethical and equitable practices.*

*Keywords: Artificial Intelligence, Sustainable Development Goals (SDGs), AI Governance, Ethical AI, Global Development*

## Introduction

### Overview of SDGs

The Sustainable Development Goals (SDGs) were assembled by the United Nations in 2015 at the heart of the United Nations 2030 Agenda for sustainable development, a universal framework to assist in solving the greatest issues facing humanity. The 17 interconnected goals reflect an extraordinary spectrum of aspirations, from ending poverty and hunger, to quality education, gender equity, clean water and energy, and its consequent economic growth, innovation, and resilient infrastructure, all while recognizing the intrinsic value of



environmental sustainability through, climate action, life below water, life on land, and responsible consumption and production. The SDGs included the goals of peace, justice, and strong institutions which reinforce the importance of inclusive societies and effective governance.

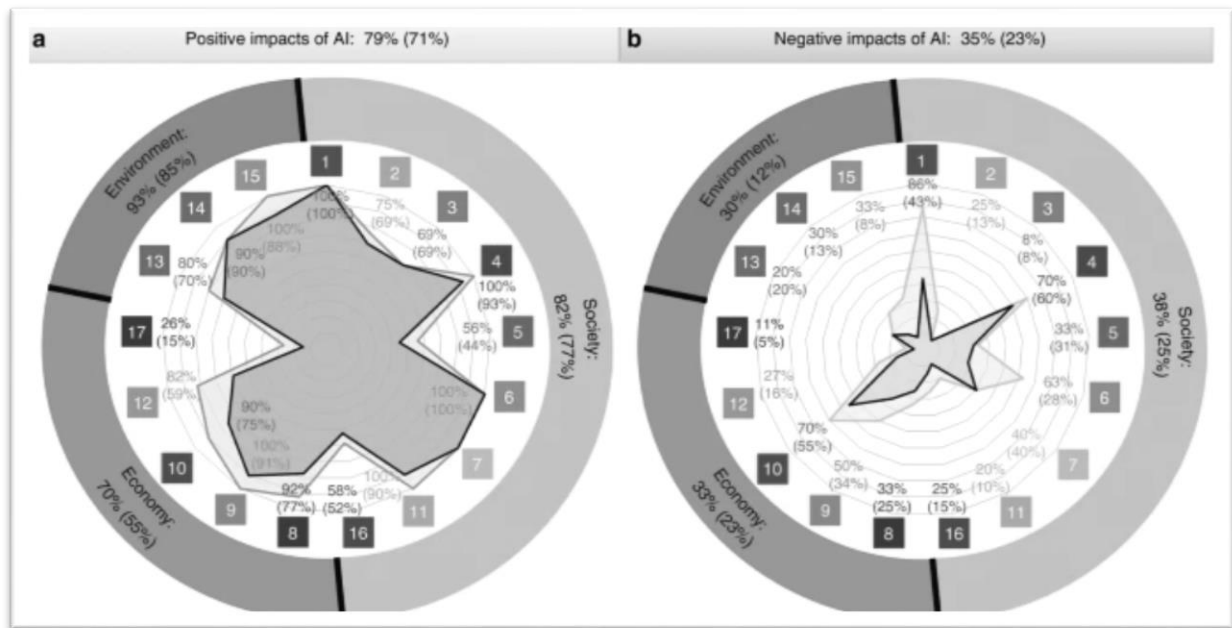
Uniquely, the SDGs apply uniformly across the globe, and call-to-action belongs to all countries simultaneously, illuminating the idea that sustainable development means we all have a role to act as an inclusive and collaborative approach to this goal that transcends levels. There are 169 specific targets and more than 230 measurable indicators that provide and inescapable challenge to the global community to act in partnership together, from government, to the private sector, to civil society, to individuals and as a whole. The SDGs are intended to be a compass for efforts to break the cycle of poverty and inequality while also being stewards of environmental sustainability and provide a plan of action for a more equitable world that is peaceful and sustainable for generations to come.

## **Introduction to AI**

The advancement of artificial intelligence (AI) is having greater impact across a diverse range of sectors and is expected to have an impact on worldwide productivity, equity and inclusion, environmental outcomes, and countless other areas to various degrees of intensity and duration in the immediate and long term. The effects of AIs have been reported to have both positive and negative consequences on sustainable development, however, to date, and to our knowledge, there have not been any studies that holistically assessed the impact of AIs on all dimensions of sustainable development, as defined by the 17 Sustainable Development Goals (SDGs) and 169 targets identified in the 2030 Agenda for Sustainable Development. This represents a gap in the existing research, with AI expected to affect the progress towards, or achievement of, each of the SDGs in some manner.

In this research we examine and discuss the potential for AIs to either advance or impede achieving progress towards the 17 goals and 169 targets of the 2030 Agenda. The relationships were identified using a consensus based expert elicitation process, that was further informed by previous research that has identified relationships between the SDGs. The results are summarized in Figure 1, with all detailed results available in Supplementary Data 1, which includes a full list of all 17 SDGs and 169 targets were examined in this research. While there may not be an established definition of AI, for the purposes of this study we refer to AI as any software technology that possesses at least one of the following capabilities: perception (e.g.,

facial recognition), decision making (e.g., medical diagnosis systems), prediction (e.g., weather forecasts), automatic extraction of knowledge and pattern recognition from data (e.g. detecting fake news in social media), interactive communication (e.g., social robots or chatbots), and logical reasoning (e.g., Generation of theories from premises). This lens provides a broad view of a variety of sub-fields of AI research, such as machine learning.



**Summary of positive and negative impact of AI on the various SDGs.**

Non-exhaustive list of documented evidence of AI acting as enabler or inhibitor on SDGs. Colored squares represent the different SDGs, and numbers inside refer to each of the SDGs (for details see Supplementary Data 1). Percentages on the top are for the proportion on all targets potentially affected by AI, those in the inner circle of the figure are the proportion for each SDG. The results corresponding to three principal groups, i.e., Society, Economy, and Environment are also displayed in the outer circle of the figure. The results of accounting of the type of evidence are shown by the inner shaded area and the values in brackets

**Intersection of AI and SDGs**

AI has developed into a transformative technology with the potential to address complex global challenges including those set out in the SDGs. Utilizing AI provides opportunities to accelerate advancement toward those goals through improved speed, predictive understanding, and new ideas. AI is relevant to the SDGs because of its capacity to

process large amounts of data, identify significant patterns, optimize processes, and make better decisions for sustainability.

## AI's Role in Specific SDGs

### SDG 1: No Poverty

The integration of artificial intelligence into the financial services and products sector can address financial inclusion and help lift millions out of poverty. By employing AI, financial services can provide existing products, such as microloans and insurance, to underserved populations, especially those living in rural areas. In addition, AI can provide creditworthiness determinations by analyzing non-traditional data (i.e., mobile phone data instead of a credit history) for those with no option for credit and limited to no access to formal financial services, such as banking. Furthermore, AI predictive analytics can also provide governments and humanitarian organizations an ability to identify vulnerable groups of people and allocate funds more precisely and efficiently, making poverty alleviation efforts impactful and relevant and by reaching the correct audience.

### SDG 2: Zero Hunger

Revolutionizing agriculture is AI through precision farming, which involves the use of AI driven tools to monitor crops, soil condition, and weather patterns. By examining data from sensors and satellites, AI can offer farmers actionable suggestions for field irrigation, fertilization, and pest control—this increased efficiency meant increased yield, and reduced environmental impact. In addition to the field, AI is improving supply chain management, ensuring food gets delivered efficiently while preventing waste. AI enabled platforms can predict food trends and demand, optimize storage and transportation, and connect excess food with food insecure communities—improving food systems to eradicate hunger.

### SDG 3: Good Health and Well-being

Within the realm of healthcare, artificial intelligence (AI) is at the forefront of efforts to enhance patient outcomes and increase access to quality care. AI-based diagnostics that rely on machine learning approaches allow for the analysis of medical images and data for the early detection of disease, such as cancer, which facilitates a much sooner response to improve prognosis. The practice of personalized medicine - where AI helps to create treatment plans based on an individual's unique genetic make-up and lifestyle - is rapidly expanding in the

inpatient and outpatient settings. During the COVID-19 pandemic, AI was critical in tracking the spread of the virus, predicting hot spots, and vaccine development. AI's distinct advantages in quickly processing and analyzing large volumes of health data in real-time will be critical to managing future public health emergencies and population health wellness.

#### **SDG 4: Quality Education**

Artificial intelligence is altering how education is delivered by making it more personalized and accessible. Adaptive learning platforms leverage AI capabilities to tailor lessons to a student's individual performance, adjusting the pace and degree of difficulty to individualize education based on each student's ability to learn. AI tutors can give immediate feedback or suggestions to students, allowing learning to be more interactive and fun. AI is also making educational materials more accessible. For example, in addition to adapting lessons to visually impaired students by adding audio descriptions, AI technology can translate the text into multiple languages, including sign languages. Technology like this will help quality education become more inclusive, widely available, and ultimately help close the gaps in education.

#### **SDG 7: Affordable and Clean Energy**

The significance of artificial intelligence (AI) in the shift to clean and reasonably sourced energy systems cannot be understated. For example, smart grids can utilize AI to balance supply and demand, allowing the grid to maximize the contribution of variable renewable energy systems, such as solar or wind energy, to its overall supply. AI can anticipate the amount of energy produced by renewable sources, facilitating their integration into the grid. For example, predictive maintenance powered by AI could continuously monitor energy infrastructure (e.g. wind turbines, solar panels, etc.) for any irregularities or malfunctions before they translate into catastrophic and expensive failures. These applications fundamentally lead to a highly efficient energy system, minimizing avoidable waste - all in the spirit of ensuring everyone has access to affordable clean energy.

#### **SDG 13: Climate Action**

AI's capacity to simulate and forecast changes in the environment, and climate modeling process, is an indispensable component of climate change intervention efforts. Climate modeling includes the simulation of climate systems that take advantage of AI

technology to analyze large and complex datasets to forecast climate systems in the future. Climate models will help policymakers better understand the potential impacts of climate change, and will generate ways to effectively respond through mitigation. AI is also meaningfully applied in the environmental monitoring setting, in which AI analyzes and interprets inputs from satellites, drones, and sensors to monitor deforestation, air quality, and ocean health on a real-time basis. By providing data, reasoned conclusions, and timely reports, AI will support environmental protection and climate change intervention efforts.

## **Cross-Cutting Themes**

### **AI Ethics and Governance**

As the integration of AI develops into the efforts tables to achieve the SDGs, it is important to explore the ethical dilemmas regarding how AI is used. Issues like data privacy, algorithmic bias, and the use of AI as a tool to entrench inequality will need to be handled with care. AI systems will need to incorporate transparency and accountability, along with governance structures to ensure they are used responsibly. This may require regulatory frameworks to protect individual rights and prohibit the use of AI in order to prevent hindrances to sustainable development.

### **Collaboration and Partnerships**

In order to successfully leverage AI to achieve the SDGs, we will require collaborative work across sectors. Delivery and scale of AI solutions requires public private partnerships where the government, NGOs, academia, and private sector, work together. We will also need international cooperation to ensure that the benefits of AI will be mapped out globally, especially for developing countries since AI technologies may not be easily accessible. Partners may bring in innovations, resources or knowledge base to ensure AI is used to solve/improve the pressing challenges and priorities.

## **Challenges and Limitations**

### **Data Availability and Quality**

AI needs big sets of data to work well, but many places worldwide don't have data or have low-quality data. This makes it hard to use AI to help with sustainable growth. When data is wrong or biased, it can cause AI models to be faulty leading to results that don't work or

might even cause harm. To fix this, we need to put money into data systems and push for gathering good fair data that shows different groups of people and places.

### **Digital Divide**

The digital divide creates a big gap between people who can use digital tech and those who can't. This gap makes it hard for AI to spread everywhere. In poorer areas, people often can't get online, don't know how to use digital tools well, and don't have the right setup to use AI. This means AI's good points aren't shared, which can make unfair situations worse and slow down progress towards the SDGs. To make sure AI can help sustainable development all over the world, we need to tackle this digital divide.

### **Resource and Expertise Constraints**

Putting AI into action needs a lot of resources. These include computer power, money, and know-how. Many poorer countries don't have these things. This makes it hard to use AI solutions on a big scale. To fix this, we need to build up local skills. This means more schooling more training, and more money. Doing this will help these countries use AI better to grow in a lasting way.

### **Case Studies**

#### **AI in Precision Agriculture**

AI in India has been used in precision farming to help farmers maximize crop yields while reducing the ecological footprint. With AI analyzing data from satellite imagery, soil sensors, and weather stations, farmers are able to get recommendations on the planting, irrigation, and harvest times. This has brought high productivity and income for smallholder farmers, therefore contributing to zero hunger and no poverty.

#### **AI in Healthcare**

In Rwanda, AI is being used in trying to improve maternal and child health. An AI-powered platform analyzes health records to spot high-risk pregnancies and anticipate possible complications. This enables healthcare workers to offer targeted care and interventions that have reduced maternal and infant mortality rates. The fact that this has been successful proves that AI can make positive changes to health outcomes in low-resource settings.

## Future Outlook

This potential increases as technology matures. Promising use areas with regard to the biggest challenges of emerging technologies may be reckoned in such domains as AI-driven climate modeling, precision medicine, and smart cities. This will be possible if only a focused concerted effort is placed on ensuring that AI operates ethically, equitably, and in a manner supportive of sustainable development.

In fact, artificial intelligence might be the central force to achieve SDGs by 2030, but that is if action is taken now. There is a need for action to pave the way for all stakeholders, including governments and businesses, to invest in, build capacity, and deal with front-line challenges that are stumbling blocks impeding actual impact from artificial intelligence. Specifically, with the right strategies in place, AI can be a powerful tool to create a world that is sustainable, just, and full of prosperity.

## Conclusion

Artificial intelligence holds a place in the fabric of global development, one imbued with unprecedented opportunities as well as major challenges. AI, as discussed, has huge potential to accelerate progress toward the SDGs by offering innovative solutions that can enhance efficiency, decision-making, and solving complex global challenges. For instance, AI can optimize agricultural practices to fight hunger, provide personalized education that closes learning gaps, and develop predictive models for fighting climate change. These examples make a case for the capacity of AI to drive transformative change across a wide array of sectors and thus contributes directly to attaining the 2030 Agenda for Sustainable Development.

Application of AI is not devoid of risks. The turning of a blind eye to the potential of the technology to increase already existing inequalities, create new bias, and putting privacy and security at risk is also impossible. In some cases, deployment of AI could undermine progress toward the SDGs, particularly if ethical considerations are not put at the forefront. For example, AI-driven automation can displace jobs and worsen economic inequality and social unrest. Beyond that, reliance on huge datasets by the technology puts concerns on data privacy and potential misuse that could then undercut trust and efforts at creating an inclusive society. It is in this dual nature of AI, as both an enabler and a probable inhibitor of sustainable development, that responsible AI governance becomes important. Within this scope, collaboration among policymakers, technologists, and stakeholders from all sectors becomes pivotal to the development and deployment of AI in ethically transparent ways and aligned

with the broader goals of sustainable development. These would consist of putting in place strong ethical frameworks for AI, ensuring digital literacy, and making certain that the fruits of AI are fairly distributed across all levels of society.

Nevertheless, filling the actual research gap is much more important. While the current study did provide some kind of overview regarding how AI might influence the achievement of the SDGs, it is relevant to note that a need is called for more detailed and context-specific research in this regard—a study of the deeper levels of interplay between AI and sustainable development. There is a need to include diverse perspective, especially with regards to marginalized communities most likely to be affected by AI technologies. This would enable us to develop more differentiated approaches that may exploit the potential of AI while lessening its risks.

In summation, AI is a powerful tool; if it is wielded in the right way, it will, without a doubt, assist in the realization of all the Sustainable Development Goals. The future, in that respect, will require balances between innovation and ethical considerations to ensure that AI becomes a force for good. As we approach 2030, it will also be important to realize the opportunities AI presents, but also to be alert to the challenges it brings to ensure that this technology mitigates itself into a sustainable, inclusive, and equitable future for all.

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# Strategic Alignments in a Virtual World: Leveraging Influencer Marketing for Brand Growth and Engagement

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## Abstract

*The study examines the growing relevance of influencer marketing in the post-COVID digital environment, emphasizing both its commercial growth and brands' strategic need for it. It looks at how well influencer marketing techniques work to raise brand awareness, encourage interaction, and increase revenue. The essential elements of a fruitful influencer partnership, including strategic alignment, credibility, and authenticity, are also covered in this paper. It also emphasizes how AI can be used to maximize influencer selection and campaign efficacy. To achieve the objectives of research, a thorough review of existing literature was conducted using an archival method. The literature review highlights adaptability and growing influence of influencer marketing by following its development from early endorsements to the emergence of social media influencers. The beneficial effects of influencer marketing on consumer behaviour, brand perception, and purchase decisions are supported by empirical research. The study ends with a prospective view on the future, outlining potential topics for additional investigation, such as the moral dilemmas and the changing function of micro-influencers.*

*Keywords: Brand awareness, Brand engagement, Customer engagement, Digital advertising, Influencer marketing.*

## Introduction

The rise of influencer marketing has become vital for brands to thrive post-Covid, adapting to a transformed consumer landscape. Influencer marketing's estimated market size

increased from \$1.7 billion in 2016—the year this site launched—to \$16.4 billion in 2022. Then, it was projected to increase by an additional 29% in 2023, to an approximated \$21.1 billion. The market size to reach an estimated \$24 billion by the end of 2024, indicating strong ongoing growth momentum in influencer marketing despite difficult economic conditions. (*The State of Influencer Marketing 2024: Benchmark Report*).

As of 2022, the influencer marketing industry in India was valued at over 12 billion Indian rupees. It was projected to grow at a compound annual growth rate of 25 percent over the next five years. The industry's market value was further estimated to amount to 28 billion Indian rupees by 2026 (*The Statista Report*).

Online celebrities who have a significant following on multiple social media platforms (such as YouTube, Instagram, Snapchat, or personal blogs) and who can sway their followers are known as social media influencers (*Agrawal 2016; Varsamis 2018*). Social media influencers are "regular people" who have turned into "online celebrities" by creating and sharing content on social media, in contrast to celebrities or public figures who are well known via traditional media.

Consequently, “**Influencer marketing** refers to a form of marketing where marketers and brands invest in selected influencers to create and/or promote their branded content to both the influencer’s own followers and to the brands’ target consumers” (*Yodel 2017*).

Influencer marketing has the ability to raise brand awareness, build credibility, and boost customer engagement, it has become a crucial component of marketing strategies for many Indian businesses (*Siddiqui, Z. M., & Hassan, M. U., 2021*). Empirical studies have demonstrated that influencer marketing has a positive impact on consumers' attitudes toward brands, resulting in elevated brand awareness and perception (*Van den Bulte, C., & Joshi, Y. V., 2007*). Influencers are seen as reliable information sources, and this perception can favourably affect consumers' intentions to make purchases and ultimately influence their actual behaviour. (*Gupta, S., & Puri, A., 2019*).

## Objectives of the Study

Some objectives of this study are given below:

- 1) To analyse the Effectiveness of Influencer Marketing Strategies.
- 2) Identify the Key factors for Successful Influencer Collaborations.
- 3) Highlight the key studies related to Influencer Marketing in Digital advertising.

## Influencer Marketing Strategies

This section explores the different tactics used in influencer marketing. By looking at these tactics, we can comprehend the workings of influencer marketing and pinpoint the essential elements that make it successful.

1. **Enhancing the Brand Awareness** - According to *Brown and Hayes (2008)*, influencer marketing is a novel type of digital communication that should mainly assist brand owners in achieving their communication objectives. Influencer marketing positively influences consumer attitudes towards brands, leading to increased brand awareness and brand perception.
2. **Driving Engagement** - Influencers, brands, and consumers can establish emotional connections through influencer marketing, which can increase consumer engagement. Successful campaigns produce enduring, satisfying experiences that foster excitement, loyalty, and satisfaction—all of which eventually motivate people to change their behaviour. Customers' attachment to a brand is strengthened and their enthusiasm for its goods and services is increased when they are emotionally engaged with it. (*Bansal, R., & Chaudhary, K.*).
3. **Boosting Sales** - Influencer marketing can drive sales, as followers are more likely to trust and act on recommendations from influencers they follow. The relationship between a brand's value proposition and consumers' purchase decisions is critical because a strong value proposition can help drive consumer engagement, increase brand loyalty, and ultimately drive sales (*Latif, W. B., Islam, A., & Noor, I. M.*).
4. **Strategic Alignment between Brand and Influencers** – *Brotkin (2024)* distinguished value, audience, content, persona, and motivational alignment as the five essential components of a successful brand alignment between brands and social media influencers. Clear campaign objectives, thorough research, inventiveness, teamwork, trial and error, and meticulous analysis during production and postproduction are all necessary for effective alignment.
5. **Authenticity and Audience Engagement** - Consumer willingness to pay is increased by influencer endorsements that are viewed as more genuine when they are thought to be creatively controlled and driven from within. Genuine influencers who have creative control over their content should be given priority by marketers. (*Kapitan, S., Van Esch, P., Soma, V., & Kietzmann, J.*).

## Importance of Influencer Marketing in Digital Advertising

In the evolving digital landscape, influencer marketing has become a cornerstone of effective advertising. This approach is vital for navigating the challenges of modern advertising.

1. **Authenticity and Trust**- Influencers are viewed as more trustworthy and relatable than conventional celebrities or brands. Their followers are more likely to believe their recommendations because of their sincere endorsements and personal tales. Customers are more likely to trust endorsements from influencers because they are perceived as more reliable (*Lim et al., 2017*).
2. **Enhanced Brand Visibility** - Brands may reach established audiences by working with influencers, which expands their reach and visibility on social media. Influencer partnerships can significantly increase a brand's social media presence and recognition (*Freberg et al., 2011*).
3. **High Engagement rates**- Influencer-generated content typically has higher engagement rates than conventional advertising. Posts are more likely to be liked, commented on, and shared by their followers. When compared to conventional advertising techniques, influencer-generated content frequently yields higher engagement metrics (*De Veirman et al., 2017*).
4. **Cost Effectiveness** - Influencer marketing has the potential to be more economical than traditional advertising campaigns since it can reach interested audiences for less money. Because influencer marketing is more focused and has greater interaction rates, it can provide better return on investment (*Mediakix, 2018*).
5. **Adaptability and Flexibility** - Influencer marketing is a flexible tool in digital advertising that can be used for a wide range of campaigns and objectives, including product launches, raising brand awareness, and increasing sales. Influencer marketing can be incorporated into a variety of advertising strategies due to its flexibility (*Schouten et al., 2020*).
6. **Driving Purchases** - Through their endorsements and reviews, influencers have a big influence on what their followers buy, which frequently results in a direct increase in sales. It has been demonstrated that consumer purchasing behaviour is directly impacted by influencer endorsements. (*Lou & Yuan, 2019*).

## Literature Review

The scholarly literature on influencer marketing emphasizes the pivotal significance of authenticity, credibility, and strategic alignment in attaining prosperous brand-influencer partnerships. The VisCAP model was presented by *Bakker (2018)*, who emphasized the value of authenticity and trust in influencer selection. *Jin, Muqaddam, and Ryu (2019)* showed that Instagram celebrities are more successful than traditional ones because of their perceived sociability and authenticity, which raises consumer trust and brand attitude. Instagram's success depends on real content, according to *Haenlein et al. (2020)*, with influencers who have a close relationship with their followers generating real engagement and brand awareness. Further research on the importance of influencer credibility and dependability in influencing consumer attitudes and enhancing brand success was conducted by *Syed and Zaidi (2021)* and *Gambhir and Ashfaq (2021)*. According to these studies, carefully selected influencers can greatly improve consumer engagement and brand reputation. According to *Leung et al. (2022)* and *Wilkie et al. (2022)*, influencer credibility is crucial for audience engagement and brand perception. Other factors that affect the efficacy of influencer marketing include sponsor salience, follower size, and originality. While *Chaudhary (2022)* concentrated on the role that personality and content play in attracting millennials, especially in the fashion industry, *Hudders and Lou (2022)* emphasized the significance of transparency in sponsored posts for fostering trust and improving brand perception.

According to *Lou, Taylor, and Zhou (2023)*, followers' parasocial relationships (PSR) with influencers determine how effective influencer marketing is on different social media platforms. Finally, the growing role of AI in maximizing influencer selection and boosting the effectiveness of marketing strategies—especially in niche markets like green beauty products—was highlighted by *Yusiana (2023)* and *Ramachandran et al. (2024)*. In an ever-changing digital landscape, influencer marketing's use of AI is viewed as a critical tool for enhancing engagement and brand recognition.

## Conclusion

In conclusion, because of its strategic brand alignment, authenticity, and credibility, influencer marketing has become an essential tactic in the rapidly changing world of digital advertising. Social media's growing market share and impact highlight how crucial it is for

businesses looking to successfully engage with their target markets. Successful campaigns require important elements like leveraging AI for influencer selection, transparent communication, and emotional engagement. Influencer marketing can help businesses navigate the complexities of modern marketing by increasing sales, building consumer trust, and raising brand awareness. To maintain growth, future strategies should place a high priority on sincere, innovative content and solid influencer-brand alliances.

### Future Scope

Future studies, especially in niche markets, could examine how AI and data analytics can be combined to optimize influencer selection and campaign efficacy. It would also be beneficial to investigate the long-term effects of influencer marketing on consumer behaviour and brand loyalty in a variety of industries. The changing role of micro-influencers and the moral issues surrounding influencer marketing—particularly those pertaining to openness and customer confidence—may also be the subject of future research.

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# Innovative Strategies to Tackle Youth Unemployment in A Dynamic Global Economy

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## Abstract

*Youth unemployment has emerged as a pressing global issue, exacerbated by rapid technological advancements and shifting economic conditions. This study explores innovative strategies to address youth unemployment in a dynamic global economy. The problem centers on the persistence of high youth unemployment rates, which threaten both economic growth and social stability. The study aims to identify key factors contributing to youth unemployment and recommend strategies that align with current and future labor market needs. A descriptive research design was employed, utilizing a convenience sampling technique to gather data from 60 respondents through structured questionnaires. Simple percentage analysis was used to analyze the data. The findings highlight several key issues, including the mismatch between education and labor market demands, the need for vocational training, and the role of technological innovation in creating new job opportunities. Specifically, 78.3% of respondents noted the lack of job-seeking initiatives, while 58.7% emphasized the importance of practical experience in reducing the skills gap. The study recommends expanding vocational and technical training programs, increasing access to internships, and utilizing online platforms to offer certifications in high-demand skills. Strengthening partnerships between educational institutions and industries is also suggested to ensure curricula remain relevant. In conclusion, addressing youth unemployment requires a multifaceted approach that includes educational reform, technological integration, and proactive policy interventions.*

*Keywords: Youth Unemployment, Innovative Strategies, Global Economy, Employment Trends, Sustainable Solutions*

## Introduction

Youth unemployment has become a critical global challenge, significantly affecting both developed and developing nations. In the current dynamic global economy, where rapid technological advancements, shifting economic structures, and the lingering impacts of global crises—such as the 2008 financial crisis and the COVID-19 pandemic—are shaping labor markets, tackling youth unemployment has gained increasing importance. The International Labour Organization (ILO) estimates that more than 64 million young people worldwide are unemployed, and many more are underemployed or working in informal sectors without access to stable or sustainable job opportunities. The future prosperity of economies largely depends on how well young people are integrated into the workforce. As such, addressing youth unemployment is not only an economic imperative but also a social one, as it has far-reaching consequences on social cohesion, mental health, crime rates, and overall well-being.

The causes of youth unemployment are multifaceted, encompassing a range of economic, demographic, educational, and technological factors. For instance, global economic recessions, demographic shifts such as rising youth populations in developing countries, and rapid technological disruptions all contribute to the challenge. In particular, the mismatch between the skills taught in education systems and the demands of modern labor markets has become a significant driver of youth unemployment. Many young people leave education systems unprepared for the evolving job market, and they often struggle to transition from education to stable employment.

Governments and policymakers across the world are increasingly aware of the need to implement innovative strategies to address youth unemployment in this complex environment. Traditional approaches, such as job creation through public works or subsidies for employers, are no longer sufficient. Instead, more comprehensive and forward-thinking approaches are needed. These include promoting entrepreneurship, aligning vocational education and training programs with labor market needs, investing in digital skills and technological literacy, and creating a conducive environment for private sector growth and innovation. In high-tech economies, the advent of artificial intelligence (AI) and automation requires policies that not only mitigate the displacement of jobs but also create new opportunities in emerging industries. This study explores innovative strategies for reducing youth unemployment within this dynamic global economy, focusing on the integration of entrepreneurship, technological innovations, and enhanced education systems. It aims to analyze how these approaches can equip young people with the necessary skills and

opportunities to thrive in the modern workforce, thereby fostering long-term economic growth and societal stability.

### Objectives of the Study

- 1) To identify and analyze the primary factors contributing to youth unemployment within the context of a rapidly evolving global economy.
- 2) To explore and recommend innovative strategies that effectively reduce youth unemployment by aligning with current and future economic dynamics.

### Review of Literature

Youth unemployment remains a global issue with deep economic and social implications, as highlighted by numerous researchers. Fatih Ayhan (2016) emphasized that youth unemployment is not only a current issue but also a future economic burden, creating social unrest and diminishing human capital. Similarly, Albena Vutsova et al. (2023) examined youth entrepreneurship as a potential solution to unemployment, noting that fostering entrepreneurial initiatives among youth can generate new opportunities and alleviate some of the structural challenges of transitioning from education to employment. However, these efforts must be tailored to each country's specific needs, as entrepreneurial environments vary greatly. According to Karthik S R & Prof. Arvind L. N. (2024), India faces complex challenges, including rapid population growth, skills mismatches, and insufficient job creation, which call for multifaceted policy responses.

Technological advancements, while offering some relief, present both opportunities and challenges. Guliyev (2023) examined the displacement effect of artificial intelligence (AI) on unemployment in high-tech nations, finding that AI can reduce unemployment by increasing productivity. However, Matuzeviciute et al. (2017) highlighted the limitations of technological innovations in addressing unemployment, particularly in countries where the infrastructure and labor market are not adequately equipped to absorb technological change. Meanwhile, Jamal et al. (2024) underscored the complex relationship between economic growth and youth unemployment, particularly in India, suggesting that macroeconomic policies aimed at improving governance and labor market flexibility are essential for fostering job creation in the face of technological disruptions.

The role of education and training systems in addressing youth unemployment has been extensively discussed. Fatih Ayhan (2016) and Apunyo et al. (2022) both emphasized the importance of well-organized school-to-work transition programs and active labor market

programs (ALMPs) that focus on vocational training, apprenticeships, and internships. These programs help bridge the gap between education and employment, preparing youth for the demands of the labor market. Furthermore, recent studies, including the examination of the E-education initiative, have shown that digital skills and innovation can play a significant role in reducing unemployment among young graduates in developing countries. This highlights the necessity of equipping youth with modern skills to navigate the dynamic global economy effectively.

Ultimately, innovative strategies to tackle youth unemployment must incorporate entrepreneurship, technological integration, and improved education systems. Titus Shem, Makuma (2014) underscored that governments must prioritize youth empowerment through socio-economic and political programs, particularly in regions like Sub-Saharan Africa, where unemployment has led to severe societal issues such as crime and political instability. Comprehensive strategies, such as those proposed by Attah Amana Philip et al. (2013), which advocate for informal sector development, coupled with digital and entrepreneurial initiatives, offer promising solutions. These strategies align with the study's objectives of examining innovative approaches to reducing youth unemployment in an increasingly complex global economy.

### **Statement of Problem**

Youth unemployment remains a persistent challenge globally, exacerbated by an economy that continues to evolve rapidly due to technological advancements, globalization, and shifting market demands. Despite various traditional measures implemented over the years, the rates of unemployed young individuals have not significantly decreased, and in some areas, have alarmingly increased. This ongoing issue not only stunts economic growth but also contributes to social instability and the waste of potential human capital. As the global economic landscape transforms, there is a critical need to reassess the contributing factors of youth unemployment under these new conditions, aiming to understand the depth and breadth of the problem in contemporary settings.

Recognizing the urgency to address this issue, this study seeks to delve into innovative strategies that are not only reactive but also proactive in tackling youth unemployment. The traditional models of employment and education are proving insufficient to cope with the pace of economic changes and the new types of job opportunities emerging. There is a substantial gap in current strategies that fail to bridge young individuals with the evolving job market

effectively. This analysis is geared towards identifying the primary factors that contribute to youth unemployment and proposing innovative, actionable strategies that address these issues directly. By aligning these strategies with both current economic realities and anticipated future shifts, the study aims to provide policymakers, educators, and business leaders with the tools they need to convert potential into tangible employment opportunities for young people.

### Research Methodology

A comprehensive research methodology was employed to ensure the collection of relevant and insightful data.

### Research Design

The study adopted a Descriptive Research Design, which is instrumental in providing an accurate portrayal of the characteristics of a particular individual situation or group. This design was chosen because it allows for a systematic description of the phenomena related to innovative strategies for reducing youth unemployment, enabling the analysis of frequency, averages, and other statistical calculations.

### Sampling Design and Technique

The sampling method used was Non-probability Sampling due to the specific nature and scope of the research. Within this method, the Convenience Sampling Technique was applied, allowing the researchers to collect data from a sample that was readily accessible and convenient to reach. This method was particularly useful given the practical constraints of time and resources, and it facilitated quick data collection from respondents who were available and willing to participate.

### Data Collection

Data was collected through two main sources:

- **Primary Data:** The primary data were collected using a structured Questionnaire, which included a range of questions designed to gather quantitative and qualitative information on respondents' views and experiences with youth unemployment and potential innovative strategies to mitigate it.
- **Secondary Data:** Secondary data were collected to aid in framing the questionnaire work, involving a review of existing literature and studies on youth unemployment. This provided

a solid theoretical foundation and helped ensure that the questionnaire was comprehensive and covered all relevant aspects of the study topic.

### Sample Size

The study was conducted with a total sample size of 60 respondents. This size was deemed sufficient to achieve the objectives of the study within the constraints and to allow for meaningful analysis and generalization of the data to a broader context.

### Tools Used

For the analysis of the data collected, Simple Percentage Analysis was employed. This tool was utilized to quantify the responses and to facilitate the clear presentation and interpretation of the results, making it easier to identify patterns and derive conclusions based on the data gathered.

### Data Analysis and Interpretation

Here are following data which was collected from random individuals and the results are as follows:

**Table No.1: Age range of the respondents**

Age Group	Percent
20-24 years	78.3
24-30 years	15.2
30 years and above	6.5
<b>Total</b>	<b>100</b>

**Interpretation:** Table No. 1 reveals that a significant majority of the respondents are young adults between the ages of 20-24, constituting 78.3% of the total. This is followed by the age group of 24-30 years, which accounts for 15.2%, and the age range of 30 years and above, which comprises the smallest segment at 6.5%. Majority (78.3%) of the respondents fall within the age range of 20-24 years.

**Table No. 2: Current employment status**

<b>Current employment status</b>	<b>Percent</b>
Employed full-time	28.3
Employed Part-time	13
Unemployed and seeking work	26.1
Unemployed and not seeking work	32.6
<b>Total</b>	<b>100</b>

**Interpretation:** Table No. 2 reveals that the highest percentage of respondents are unemployed and not seeking work, representing 32.6% of those surveyed. This is closely followed by those who are employed full-time, accounting for 28.3%. The percentage of respondents who are unemployed and seeking work stands at 26.1%, and those employed part-time constitute the smallest group at 13%. Most (32.6%) of the respondents are unemployed and not actively seeking work.

**Table No. 3: Highest level of education completed**

<b>Educational Level</b>	<b>Percent</b>
High School or equivalent	19.6
Under Graduate	67.4
Post Graduate	10.9
Diploma	2.1
<b>Total</b>	<b>100</b>

**Interpretation:** Table No.3 reveals that the majority of the respondents have an undergraduate degree, accounting for 67.4% of the sample. This is followed by those who completed high school or equivalent, making up 19.6%. Postgraduate holders represent 10.9%, and those with a diploma constitute the smallest group at 2.1%. Majority (67.4%) of the respondents hold an undergraduate degree.

**Table No. 4: Primary Causes of Youth Unemployment**

Primary Causes	Percent
Lack of releveant skills and qualifications	28.3
Economic instability	19.6
Insufficient job opportunities	30.4
Mismatch between education and job market needs	21.7
<b>Total</b>	<b>100</b>

**Interpretation:** Table No. 4 reveals that the most cited primary cause of youth unemployment is insufficient job opportunities, accounting for 30.4% of responses. This is followed by a lack of relevant skills and qualifications, noted by 28.3% of respondents. A mismatch between education and job market needs is indicated by 21.7%, while economic instability is considered a significant factor by 19.6% of the participants. Most (30.4%) of the respondents identify insufficient job opportunities as the primary cause of youth unemployment.

**Table No. 5: Impact of Technological Advancements on Youth Unemployment**

Impact Level	Percent
A great deal	41.3
A moderate amount	47.6
A little	8.7
Not at all	2.4
<b>Total</b>	<b>100</b>

**Interpretation:** Table No.5 reveals that the largest proportion of respondents, 47.6%, believe that technological advancements have had a moderate amount of impact on youth unemployment. This is followed by 41.3% of participants who think these advancements have had a great deal of impact. Only 8.7% feel the impact has been little, and a minimal 2.4% believe it has had no impact at all. Most (47.6%) of the respondents feel that technological advancements have had a moderate amount of impact on youth unemployment.



**Table No.6 Key Contributors to the Skills Gap in Young Job Seekers**

Key Contributors	Percent
Outdated curriculum	23.9
Lack of practical experience	58.7
Rapidly changing industry requirements	13.0
Insufficient career guidance	4.4
<b>Total</b>	<b>100</b>

**Interpretation:** Table No. 6 reveals that the largest contributor to the skills gap among young job seekers is the lack of practical experience, cited by 58.7% of respondents. Outdated curriculum is considered a significant factor as well, noted by 23.9%. Rapidly changing industry requirements are identified by 13.0% of the participants, while insufficient career guidance is seen as a key contributor by only 4.4%. Majority (58.7%) of the respondents indicate that the lack of practical experience is the primary contributor to the skills gap in young job seekers.

**Table No.7 Influence of Discrimination on Youth Unemployment**

Influence level	Percent
A great deal	39.1
A moderate amount	50.0
A little	10.9
Not at all	0
<b>Total</b>	<b>100</b>

**Interpretation:** Table No.7 reveals that 50.0% of respondents believe discrimination has a moderate amount of influence on youth unemployment, making it the most commonly perceived level of impact. This is followed by those who feel it influences a great deal, accounting for 39.1% of responses. A smaller segment, 10.9%, feels that discrimination influences youth unemployment only a little, and none of the respondents believe it has no influence at all. Majority (50.0%) of the respondents perceive that discrimination has a moderate amount of influence on youth unemployment.

**Table No.8 Most Effective Strategies for Reducing Youth Unemployment**

<b>Strategies</b>	<b>Percent</b>
Expanding vocational and technical training programs	39.1
Strengthening partnerships between educational institutions and industries	34.8
Promoting entrepreneurship and start-up initiatives	23.9
Increasing investment in digital skills and remote work opportunities	2.2
<b>Total</b>	<b>100</b>

**Interpretation:** Table No. 8 reveals that the most supported strategy for reducing youth unemployment is expanding vocational and technical training programs, which is favored by 39.1% of the respondents. This is followed by strengthening partnerships between educational institutions and industries, which garners support from 34.8% of participants. Promoting entrepreneurship and start-up initiatives is also seen as effective by 23.9%, while increasing investment in digital skills and remote work opportunities is considered the least effective, noted by only 2.2%.

**Table No.9 Best Methods to Enhance Employability of Young Job Seekers**

<b>Methods</b>	<b>Percent</b>
Providing internships and work placements	50.0
Offering mentorship and career counselling	32.6
Developing job readiness programs and workshops	10.1
Facilitating networking opportunities with industry professionals	7.3
<b>Total</b>	<b>100</b>

**Interpretation:** Table No. 9 reveals that the most favored method to enhance the employability of young job seekers is providing internships and work placements, endorsed by 50.0% of respondents. Offering mentorship and career counselling follows with 32.6% support. Developing job readiness programs and workshops is chosen by 10.1% of the participants, and facilitating networking opportunities with industry professionals is viewed as the least effective, receiving only 7.3% endorsement. Majority (50.0%) of the respondents advocate for

providing internships and work placements as the best method to enhance the employability of young job seekers.

**Table No.10 Optimal Ways to Utilize Technology for Creating Youth Job Opportunities**

Factors	Percent
Developing online job platforms and job-matching algorithms	30.4
Offering online courses and certifications for in-demand skills	39.1
Promoting remote work and freelance opportunities	28.3
Creating virtual career fairs and networking events	2.2
<b>Total</b>	<b>100</b>

**Interpretation:** Table No. 10 reveals that the most preferred method for utilizing technology to create job opportunities for youth is offering online courses and certifications for in-demand skills, which is favored by 39.1% of respondents. Developing online job platforms and job-matching algorithms is the next most supported option with 30.4% endorsement. Promoting remote work and freelance opportunities is also considered effective by 28.3% of respondents, while creating virtual career fairs and networking events is seen as least effective, attracting only 2.2%. Most (39.1%) of the respondents believe that offering online courses and certifications for in-demand skills is the optimal way to utilize technology for creating youth job opportunities.

**Table No. 11: Innovative Strategies to Tackle Youth Unemployment in a Rapidly Changing Global Economy**

Innovative Strategies	Percent
Implementing adaptive education and training programs that evolve with industry trends	32.6
Investing in technology-driven job creation initiatives	30.4
Strengthening global partnerships to share best practices and resources	26.1
Fostering a culture of innovation and creativity among young entrepreneurs	10.9
<b>Total</b>	<b>100</b>

Table No. 11 reveals that the most supported innovative strategy to tackle youth unemployment is implementing adaptive education and training programs that evolve with industry trends, which garners 32.6% of responses. Investing in technology-driven job creation initiatives closely follows with 30.4% support. Strengthening global partnerships to share best practices and resources is also seen as significant, drawing 26.1% endorsement. Lastly, fostering a culture of innovation and creativity among young entrepreneurs is viewed as beneficial by 10.9% of respondents. Most (32.6%) of the respondents believe that implementing adaptive education and training programs that evolve with industry trends is the most effective innovative strategy to tackle youth unemployment.

### Findings of the Study

- 1) A significant majority (78.3%) of respondents are young adults aged 20-24 years.
- 2) The largest group of respondents (32.6%) is unemployed and not actively seeking work.
- 3) Most respondents (67.4%) hold an undergraduate degree.
- 4) The primary cause of youth unemployment identified by the majority (30.4%) is insufficient job opportunities.
- 5) Technological advancements are perceived to have a moderate impact on youth unemployment by 47.6% of respondents.
- 6) Lack of practical experience is seen as the primary contributor to the skills gap among young job seekers, noted by 58.7%.
- 7) Discrimination is believed to moderately influence youth unemployment, according to 50.0% of respondents.
- 8) Expanding vocational and technical training programs is the most supported strategy for reducing youth unemployment, favored by 39.1%.
- 9) Providing internships and work placements is considered the best method to enhance employability, endorsed by 50.0% of respondents.
- 10) Offering online courses and certifications for in-demand skills is viewed as the optimal way to utilize technology for creating job opportunities, supported by 39.1%.
- 11) Implementing adaptive education and training programs that evolve with industry trends is seen as the most effective strategy to tackle youth unemployment, receiving 32.6% support.
- 12) Strengthening partnerships between educational institutions and industries is a key strategy, supported by 34.8% of participants.

- 13) Promoting entrepreneurship and startup initiatives is favored by 23.9% as an effective unemployment reduction strategy.
- 14) Developing online job platforms and job-matching algorithms is a preferred technological method by 30.4% of respondents.
- 15) Fostering a culture of innovation and creativity among young entrepreneurs is viewed as beneficial by 10.9% of respondents.

## Suggestions

To effectively address the primary causes of youth unemployment in a dynamic global economy, several strategic interventions are suggested based on the study's findings. First, given the high percentage of young adults (78.3%) who are unemployed and not seeking work, it is crucial to engage this demographic through targeted job creation strategies. Initiatives such as expanding vocational and technical training programs, which received substantial support (39.1%), should be prioritized to align educational outcomes with market needs. Moreover, addressing the significant skills gap caused by a lack of practical experience, as noted by 58.7% of respondents, can be mitigated by increasing access to internships and work placements. These programs not only enhance employability but also ensure that young job seekers are better prepared to meet the demands of the modern workforce.

In the realm of technology, leveraging online platforms to create job opportunities is vital. The study highlights a strong preference (39.1%) for offering online courses and certifications in in-demand skills, which can help bridge the education-job market mismatch and equip youths with the necessary tools to thrive in a technology-driven environment. Additionally, developing job-matching algorithms and online job platforms, as supported by 30.4% of respondents, can significantly improve the efficiency of job searches and placement. Strengthening partnerships between educational institutions and industries is also critical to ensure a continuous feedback loop that keeps educational programs relevant and responsive to the evolving industry requirements. By implementing these innovative strategies, the gap between youth unemployment and workforce requirements can be significantly narrowed, fostering a more resilient and adaptable economic environment for young adults.

## Conclusion

The comprehensive analysis of the primary causes and potential solutions for youth unemployment in the study aligns closely with the objectives set to understand and mitigate

this global challenge. The identification of insufficient job opportunities, a significant skills gap due to lack of practical experience, and the moderate influence of discrimination and technological advancements offer a clear picture of the multifaceted nature of youth unemployment. The findings underscore the urgent need for strategies that not only address immediate employment gaps but also anticipate future market trends and requirements. This holistic understanding guides the formulation of interventions that are both responsive and proactive, aiming to equip the youth with the necessary tools and opportunities to thrive in a rapidly evolving economic landscape.

Building on these insights, the suggested strategies for addressing youth unemployment are both innovative and pragmatic. Expanding vocational and technical training programs, enhancing internship and work placement opportunities, and leveraging technology through online courses and job-matching platforms are all measures that directly address the identified gaps. Furthermore, the emphasis on strengthening partnerships between educational institutions and industries, as well as fostering a culture of innovation and entrepreneurship among young job seekers, are critical for creating a sustainable and adaptable workforce. These initiatives are designed not just to temporarily alleviate unemployment but to build a resilient foundation for future economic challenges and opportunities. By implementing these strategies, stakeholders can effectively bridge the gap between current educational outputs and the dynamic needs of the global job market, ensuring that the youth are not only employed but are also an integral part of driving economic growth and innovation.

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# A Study on Executives Work Life Balance in Ashok Leyland, Chennai

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## Abstract

*Work-life balance refers to the equilibrium where individuals effectively manage the demands of their professional and personal lives. Achieving this balance is crucial for maintaining well-being, job satisfaction, and productivity. This concept involves strategies for managing time, setting boundaries, and prioritizing tasks to prevent burnout and enhance overall quality of life. The modern workplace's increasing demand and technological advancements have made maintaining work-life balance more challenging. Organizations and employees both play critical roles in fostering a supportive environment that promotes balance through flexible work arrangements, mental health resources, and a culture that values arrangements, mental health resources, and a culture that values personal time. This abstract explores the importance of work-life balance, the challenges faced, and the strategies to achieve it, emphasizing the need for continuous adaptation and support in an ever-evolving work landscape.*

*Keywords: Work-life balance, Well-being, Productivity, Burnout, Flexible work arrangements.*

## Introduction

Work life balance is a form of organisational human resources management which pursues a balance between work and private life. It represents an interaction between work and private life. Organisational work life balance measures are aimed to provide successful professional careers under consideration of private, social, cultural and health expectations. A central aspect of this fundamental perspective represents the reconciliation of work and family life. There is an increasing recognition that, a person's work and personal life have reciprocal effects on each other. Now people's lives are getting busier and over the



last five years an increasing number of men are asking similar questions (and wanting some answers) about the demands on their time. Consequently, men and women are questioning the impact of factors such as long working hours, high stress levels, low energy, extended travel, take-away meals etc., on the quality of their lives. So, the employees are looking to the workplace to provide some relief in the form of practical solutions to their stressful existences.

### **Need For the Study**

A study on Work - life balance is to evaluate how executives are managing their work and life in an organization. It also helps us to know how much executives are dedicated towards their professional and personal life. Therefore, this study concentrates on how executives manage time, prioritize their work and balance their personal and professional life.

### **Objectives**

#### **Primary objective**

- To study work life- balance of executives in Ashok Leyland and to suggest a few remedial solutions to overcome the imbalance.

#### **Secondary objective**

- To come up with executives view on work life-balance.
- To know the initiatives taken by the organization to balance work and life of executives.
- To identify whether the executives value both their life and work as equal.

### **Scope of the Study**

The focus of the study was on how executives are balancing their personal and professional life without any hindrances. The research was undertaken for all cadres of executives only. This study reveals how executives are realizing the importance of relationship and is trying to strike the balance between career and personal lives. This report helps the organization to identify the areas of bottle necks and take the required measures. This also helps the executives to overcome their barriers which helps them for their career and growth.

## **Review of literature – theory and concepts**

### **Work life balance – definition**

**Work–life balance** is a broad concept including proper prioritizing between "work" (career and ambition) on the one hand and "life" (Health, pleasure, leisure, family and spiritual development) on the other. Related, though broader, terms include "lifestyle balance" and "life balance".

### **Process of Work-Life Balance**

Enjoyment and achievement are the two basic things for the balance of work and life. The employees should have a sense of achievement and enjoy every minute of it on daily basis on all the four quadrants of life and the employees will surely achieve a work-life balance.

### **Review of Previous Studies**

Literature Review is the concept of reviewing papers, journals, articles relevant to our study and the abstract gained from those previous reviews.

### **Overview of Work-Life Balance Discourse And Its Relevance In Current Economic Scenario- Dr. Pranav Naithani (Dept. of Management - Waljat Colleges of Applied Sciences)**

From this article, the information gained related to our study is that Composition of work and family life spheres has significantly changed over a period of time. Lack of work-life balance thus influences working individual's performance at work place as well as in personal life.

### **Work/Life Balance Through A Critical ‘Gender Lens’: A Cross-Country Comparison Of Parental Leave Provisions And Take-Up In Australia And Sweden -Nadine Zacharias (B.Bus (Hons), MBA)**

It had been argued that the current definition of the work/life balance concept was too narrow and did not address the underlying structural issues, such as the gender pay gap, the gendered division of labour and the gendered nature of workplaces and society in general, which impacted on the decision to take up work/life balance policies. From this study, we

came to know that Gender has a greater impact on work-life balance and female executives are mostly affected by work-life imbalance.

### **Leadership Development: Past, Present, And Future - Gina Hernez-Broome, Richard L. Hughes, Center for Creative Leadership**

Health and well-being at work are issues of increasing interest and attention, including their relevance to leadership. In an environment of constant change and unrelenting competition, managing stress and personal renewal to avoid burn-out are becoming a central focus for leadership development. Dealing with multiple and competing demands of a fast-paced career and personal/family relationships and responsibilities is a common challenge, and there is increasing recognition that a person's work and personal life have reciprocal effects on each other. We know that individual leader effectiveness is enhanced when people manage multiple roles at home and at work but we continue to learn more about the organizational benefits and maybe even the benefits to family and community as well. This shows that Leadership development is also affected by work/life imbalance.

### **Flexible Working, A Work/Life Balance Or A Balancing Act - Jean Lambert MEP (Green Party Member of the European Parliament for London)**

29% of this article reveals that 29% of employees work with high stress levels more than 10 hours over their contractual hours every week. Work-life balance' isn't just Work-Life Balance isn't just about women juggling a home and family - although that is certainly an important part of it. It's also about adjusting working patterns so that everyone, regardless of age, race or gender, can find a rhythm that enables them more easily to combine work with their other responsibilities or aspirations. From this, we came to know that flexible working hours help in balancing their work and life.

### **Business Case: Work/Life Balance - Stephanie Vermeulen**

The bigger picture of family-friendly work environments includes adequate child-care but extends to a variety of issues such as; flexible working arrangements, compressed working weeks, time off in lieu, part-time work, intellectual sabbaticals, health initiatives (i.e. corporate gymnasiums, stress management, smoking cessation) telecommuting, home offices, job sharing, self-rostering, term-time working, employee assistance programmes (i.e. helplines, counselling, life-skills training), parental leaves of absence and eldercare assistance.

From this business case, we gain the information of how stress management plays a major role in the imbalance of work and life and leads to work-life conflict.

## **Increasing Organisational Development Through Better Human Resources Planning and Development- Edger. H. Schein**

Studies of young people entering organizations in the last couple of decades suggest that work and career are not as central a life pre-occupation as was once the case. Perhaps because of a prolonged period of economic affluence, people see more options for themselves and are increasingly exercising those options. Especially one sees more concern with a balanced life in which work, family, and self-development play a more equal role.

### **Research Methodology**

Research methodology is a way to systematically solve the search problem. It may be understood as a science of studying how research is done scientifically. It gives an idea about various steps adopted by the researcher in a systematic manner with an objective to determine various solutions.

### **Type Of Research**

#### **Descriptive research**

The type of research design undertaken is *descriptive research*. The descriptive research which is also called as ex-post facto research of the study includes surveys and fact-finding enquires of different kinds. Thus, the research describes the present events as it exists. Based on the research conclusions have been arrived.

### **Target Respondents**

All the executives of Ashok Leyland, constitute to the targeted respondents. The population of executives is 450 where a sample size of 100 were taken as respondents.

### **Assumptions, Constraints and Limitations**

- The study was only for Ashok Leyland at Chennai and cannot be generalized for the industry.
- This study was conducted only for a time period of three months; hence the sample size was restricted to 100.
- As the executives were from different departments, their presumption about their work and life may differ.
- Answers given by the executives may be biased.

## Proposed Sampling Techniques

There are two sampling methods, viz:

- Probability sampling or random sampling technique.
- Non- probability sampling or convenient sampling technique.

## Data Analysis and Interpretation

Particulars	Factors	Percentage
<b>Executive Age</b>	Less than 30	40%
	30-40	34%
	40-50	8%
	More than 50	18%
<b>Grade of Executives</b>	CG 21 – CG 23	32%
	CG 24-CG 24A	68%
<b>Departments</b>	Program Management office	14%
	Power solution Business	18%
	Internal Audit	16%
	Exports	14%
	Finance	38%
<b>Gender of Executives</b>	Male	62%
	Female	38%
<b>Marital Status</b>	Married	68%
	Unmarried	28%
	Others	4%
<b>No. of Children for Executives</b>	None	40%
	1	38%
	2	16%
	More than 2	6%
<b>Years of Experience</b>	1-3	32%
	3-5	26%
	5-10	12%
	10-15	10%
	More than 15 Years	20%

<b>Travel Duration</b>	Less than half an hour	56%
	Nearby one hour	26%
	Nearby two hours	10%
	More than two hours	8%
<b>Task during Working Hours</b>	Strongly disagree	8%
	Disagree	10%
	Neutral	30%
	Agree	36%
	Strongly agree	16%
<b>Flexible Working Hours</b>	Strongly disagree	0%
	Disagree	18%
	Neutral	2%
	Agree	50%
	Strongly agree	30%
<b>Completing Work with Family Commitment</b>	Strongly disagree	1%
	Disagree	8%
	Neutral	16%
	Agree	60%
	Strongly agree	15%
<b>Working Late in Office</b>	Strongly disagree	4%
	Disagree	32%
	Neutral	18%
	Agree	32%
	Strongly agree	14%

## Inference

With respect to executives age 40% of the respondents are below the age of 30, followed by 34% of them are between 30-40 years and 8% respondents are between 40-50 years and 18% are above the age of 50.

With respect to executive's grade infer 32% of the respondents belong to CG21-CG23 grade and 68% of the respondents belong to CG24-CG24A grade.

With respect to executives' departments 14% of the respondents are from program management office, followed by 18% of them are from power solution business, 16% are

from internal audit, 14% are from exports and the remaining 38% are from finance department.

With respect to gender of executives 62% of the respondents are male and 38% are female.

With respect to marital status of executives 68% of the respondents are married, followed by 28% of them are unmarried and the remaining 4% are others.

With respect to executives' children 40% of the respondents have no children, followed by 38% of them have one child, 16% have two children and remaining 6% of them have more than 2 children.

With respect to executives experience 32% of the respondents have an experience of 1-3 years, followed by 26% of them have an experience of 3-5 years, 12% have an experience of 5-10 years, 10% have an experience of 10-15 years and the remaining 20% of them have an experience of more than 15 years.

With respect to travel duration of executives 56% of the respondents spend less than half an hour for travelling to work, followed by 26% spend nearly one hour, 10% spend nearly two hours and the remaining 8% spend more than two hours for travelling to work.

With respect to completion of task during the working hours 16% of the respondents strongly agree that they are able to complete the task during the working hours of the company, followed by 36% of them agree, 30% feel neutral, 10% disagree and the remaining 8% strongly disagree.

With respect to flexible working hours 30% of the respondents strongly agree that they enjoy flexible working hours, followed by 50% of them agree, 2% feel neutral, 18% disagree and 0% strongly disagree.

With respect to completing work with family commitments 15% of the respondents strongly agree that they prioritize their work though they have family commitment, followed by 60% of them agree, 16% feel neutral, 8% disagree and the remaining 1% strongly disagree.

With respect to working late hours at office 14% of the respondents strongly agree that they work late hours at office everyday, followed by 32% of them agree, 18% feel neutral, 32% disagree and the remaining 4% strongly disagree.

## Summary of Findings

- 40% of the respondents are below the age of 30, followed by 34% of them are between 30-40 years, 8% are between 40-50 years and 18% are above the age of 50.
- 32% of the respondents belong to CG21-CG23 grade and 68% of the respondents belong to CG24-CG24A grade.
- 14% of the respondents are from program management office, followed by 18% of them are from power solution business, 16% are from internal audit, 14% are from exports and the remaining 38% are from finance department.
- 62% of the respondents are male and 38% are female.
- 68% of the respondents are married, followed by 28% of them are unmarried and the remaining 4% are others.
- 40% of the respondents have no children, followed by 38% of them have one child, 16% have two children and remaining 6% of them have more than 2 children.
- 32% of the respondents have an experience of 1-3 years, followed by 26% of them have an experience of 3-5 years, 12% have an experience of 5-10 years, 10% have an experience of 10-15 years and the remaining 20% of them have an experience of more than 15 years.
- 56% of the respondents spend less than half an hour for travelling to work, followed by 26% spend nearly one hour, 10% spend nearly two hours and the remaining 8% spend more than two hours for travelling to work.
- 16% of the respondents strongly agree that they are able to complete the task during the working hours of the company, followed by 36% of them agree, 30% feel neutral, 10% disagree and the remaining 8% strongly disagree.
- 30% of the respondents strongly agree that they enjoy flexible working hours, followed by 50% of them agree, 2% feel neutral, 18% disagree and 0% strongly disagree.
- 15% of the respondents strongly agree that they prioritize their work though they have family commitment, followed by 60% of them agree, 16% feel neutral, 8% disagree and the remaining 1% strongly disagree.
- 14% of the respondents strongly agree that they work late hours at office everyday, followed by 32% of them agree, 18% feel neutral, 32% disagree and the remaining 4% strongly disagree.



## Suggestions

As per my study on Work-life balance and to the best of my knowledge and capability, the following suggestions have been given:

The personal life and professional life of executives in the company is well balanced. However, the following suggestions are made with the intention of still better conditions:

- Period administration may be the pertinent solution for the avoidance of friction between the personal and professional life of executives.
- Since, 46% of the executives feel that they work late hours at office every day, it is suggested that workloads may be correlated with the working hours.
- Importance is been divulged by more than 70% of the executives to prioritize the completion of the given task by the company. The mentality can be appreciated.
- More than 50% of the executives are able to balance their work and family life which can be encouraged for retention.

## Conclusion

Life is not merely eating and enjoying the pleasures and pangs and pains to suffer. We are required to contribute our endeavors to the life as well as to the organization where we render service. Hence it is very much important to keep it in mind that if a person wants to lead a meaningful life, he/she should have equilibrium between their personal and professional life. Then only they can have a healthy, prosperous and meritorious life. Everybody does have only limited hours. It's a point to ponder over how to administer the time under our realm. If one deviates from the morality, his/her personal as well as professional life will get collapsed. If one accommodates and accomplishes the duties correctly “**bliss and blithe**” will be the balance otherwise “**perdition and debility**” will be the remnant.

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# Challenges of Migrant Women Garment Workers of Tirupur in Tamil Nadu

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## Abstract

*Migration involves the movement of people in search of better livelihoods and occurs both internally, within a state, and externally, across state borders, known as inter-state migration. It is primarily driven by the need to improve economic conditions and living standards. In India, both interstate and intrastate migration have seen a growing trend in the "feminization of migration," largely due to structural changes in the rural economy following the implementation of New Economic Policies during globalization. These changes, which include urbanization, workforce shifts from agriculture to organized and unorganized industries, unemployment, and the search for livelihood opportunities, have significantly impacted migration patterns. While female migration was once mostly linked to marriage, recent national and international research shows that women now migrate more frequently for employment and family-related reasons. In Tamil Nadu, it has been observed that out of every 100 migrants, 58 are women and 42 are men. National data (Census 2001) also reveals that among rural migrants, 64% are female, while in urban areas, 48% of migrants are male. A notable migration trend in Tamil Nadu is the movement of people from rural areas to urban centers, especially to Tiruppur, located in the state's Manchester region.*

## Introduction

The majority of migrant labourers in Tiruppur work as long-term temporary casual laborers, often relocating with their families from the southern districts of Tamil Nadu. In this migration pattern, women move with their male family members and children, taking on roles as mothers and wives, primarily caring for their households. Many women are unable to work directly in textile industries due to their household responsibilities, such as caring for children

and elders. Additionally, biological factors like pregnancy further limit their participation in the labor force. However, these women still engage in unskilled or semi-skilled employment by performing tasks such as checking finished hosiery products at home, working on a piece-rate basis while managing their household duties.

The growth of ancillary industries and industrial employment through subcontracting, along with stagnating or declining household incomes due to liberalization, privatization, and globalization, has led to an increased entry of women into the informal labor market and employment sector (Unni, Jeemol, 2001). Various forms of home-based work have expanded with the rise of labor informalization. This trend is partly driven by increasing competition and the need for flexibility, with garment workers being a flexible, low-cost, and dispensable labor force. Their invisibility in the workforce makes it difficult for them to demand better wages, job security, or improved working conditions (Pearson, Ruth, 2004). Although these garment workers contribute directly to the garment-based labor market, they remain invisible within it. They are not treated equally with other regular or casual workers, despite working from home, often for more than eight hours a day.

This study seeks to examine the conditions, challenges, and needs for inclusion of home-based workers. Primary data was collected from 40 migrant households of women home-based workers paid on a piece-rate basis in Tiruppur, the "textile city." The study employs an exploratory research design, facilitated by SAVE (an NGO working with migrants in Tiruppur's textile sector) and the trade union CITUC. The researcher identified households of migrant women home-based workers from Rakkiayapalayam, Golden Nagar, Saammundeeapuram, and Periyandipalayam, areas predominantly occupied by rural-urban migrants. Using snowball sampling, 40 households were selected for the study, and primary data was gathered from these women engaged in garment-related home-based work. Data collection methods included interviews, observations, and focus group discussions (FGDs), and the data was analyzed qualitatively.

### **Background Profile of the Women Migrant Workers**

The garment workers who participated in this study in Tiruppur are migrants employed in export garment industries. They revealed that poverty, unemployment, agricultural failure, landlessness, debts, dissatisfaction with agricultural wage work, and the lack of continuous employment opportunities in their native regions were key factors driving

their families to migrate to Tiruppur. The majority of these workers fall within the productive age group of 20 to 40 years, with only a small number under 20 or over 40.

Regarding educational background, except for 14% of the workers, the rest had completed their schooling up to the high school level. Despite this education, they remain unskilled and unable to participate in skilled work due to the lack of relevant training. A significant proportion of these workers are married, and many belong to larger families, typically with 3 to 6 members. Only a small number come from smaller families consisting of just a couple (1-2 members).

Most garment workers earn an average monthly income of less than Rs. 5000. The larger family size both compels more family members to participate in the labor market and presents a challenge for workers to meet their household's basic needs, especially given the higher cost of living in Tiruppur

### **Standard of Living**

The living conditions of migrant garment workers in Tiruppur are considerably worse compared to their homes in their native places. Before migrating, many lived in spacious, independently owned homes without the financial burden of paying rent. In Tiruppur, however, they reside in clusters of houses—rows of identical homes separated by partition walls, where family size is not taken into account. Each cluster consists of 5 to 10 semi-pucca tiled houses, with most families confined to a single room. These rooms serve multiple purposes, including cooking, eating, sleeping, and other daily activities.

The ventilation in these homes is poor, with only small windows, if any, providing inadequate aeration. Some houses lack windows entirely, making proper ventilation, which is essential for good health, difficult to achieve. As a result, many workers rely on electric fans throughout the day for airflow.

In terms of sanitation, there are very few toilets, and families must share these facilities, which are not gender-specific. Typically, one bathroom and toilet are shared by 2 to 3 households, making it challenging to manage morning routines and adhere to work shifts. This situation is particularly stressful for women during menstruation, as water scarcity, lack of privacy, and inadequate facilities for changing, washing, and disposing of sanitary products lead to mental stress.

In front of the cluster houses, close to open drainage, there is a communal washing area with a stone platform where workers queue to wash clothes. Regarding cooking, most

garment workers rely on LPG and kerosene for fuel. Although they previously used firewood in their native areas at no cost, they are now forced to spend part of their monthly income on purchasing LPG cylinders, as firewood is not readily available in urban areas like Tiruppur.

Water scarcity is a significant issue in Tiruppur, largely due to pollution caused by the textile bleaching and dyeing industries over the past three decades. The groundwater has become severely contaminated, and the Noyyal River, once a vital source for drinking water and irrigation, is now irreversibly polluted. As a result, the people of Tiruppur, including migrant garment workers, struggle to access safe drinking water. Although public taps provide water in residential areas, the distribution is insufficient and unreliable, forcing many workers to pay for water for both drinking and other daily needs.

Additionally, mobile phones and cable TV have become essential for migrant households, much like food, shelter, and clothing. However, saving money is nearly impossible for these families, as most are in debt to private moneylenders. Over three-quarters of households have taken out loans from these non-institutional lenders. With the need to spend on rent, electricity, fuel, water, and essential goods, their household income is inadequate to cover even basic needs. As a result, they borrow money at high-interest rates to cover urgent expenses like medical bills, children's education, and to meet the expectations of family for rituals and ceremonies back in their native villages.

Poor living conditions, lack of social security, irregular employment, rising prices of essential goods, and the high cost of education, healthcare, food, and housing have made life increasingly difficult for these workers. Many migrant garment workers expressed their discontent, noting that although their living conditions in their native villages were unsatisfactory, they endure their current circumstances merely to survive, as they have no other viable livelihood options.

### **Working Condition**

Among the home-based workers studied, the majority lacked prior experience or skills related to garment work. Only a few had previous experience, having worked in garment factories before leaving due to pregnancy and childcare responsibilities. To support their families and cope with the high cost of living in Tiruppur, these women voluntarily took up home-based wage work introduced by family members in the garment industry, neighbors, or middlemen. Their homes, typically poorly ventilated and lit 10x10 feet rooms, also serve as their workplaces.

After completing their household duties, these workers engage in garment tasks during their remaining free time. On average, they receive work orders for about 20 days each month, mainly performing finishing tasks such as checking finished garments for defects, stitching buttons, and similar tasks. They receive their orders from middlemen or subcontractors and are paid on a piece-rate basis. These same individuals also collect the finished garments from the workers' homes daily.

Piece rates vary depending on the type and design of the garment, with workers completing anywhere from 150 to 400 pieces a day, depending on their household workload, available time, and the nature of the garments. For instance, they may complete up to 400 smaller items like baby clothes or a maximum of 200 larger items such as T-shirts, nighties, or caps. However, their pay is extremely low, ranging from 30 paise per small piece to 50 paise per larger piece, amounting to around Rs. 1-5 per dozen. Most workers earn less than Rs. 75 per day, and only rarely do they make more than Rs. 120. Payments are made weekly, typically on Saturdays, based on the number of pieces completed.

Regarding their occupational health, all workers reported both physical and mental health issues related to their work. Many suffer from eye irritation, headaches, back pain, hip and body aches, fatigue, indigestion, and stomach ulcers. These physical problems are accompanied by mental health issues such as depression, anxiety over job insecurity, feelings of emptiness, mental exhaustion, irritability, and insomnia.

Despite their significant contributions to the export business of numerous companies, these workers do not consider themselves part of the labor force or the production process. They lack awareness of the supply chain and have no direct connection to any company. They are not provided with identity cards, are not members of trade unions, and are entirely excluded from labor welfare benefits such as provident funds, ESI, bonuses, medical assistance, maternity leave, uniforms, and accident benefits. While employers and subcontractors profit from this large, underpaid workforce, these home-based workers remain isolated from the labor market, deprived of their labor rights, and without any social security protections.

## **Conclusion**

Women migrant garment workers face the same challenges as regular and casual workers in textile companies, such as irregular employment, declining orders, job insecurity, low wages, and pressure to complete tasks within strict deadlines. However, because they

work from home, they remain invisible as laborers. Their work is undervalued and unrecognized due to its flexible, unskilled nature, and the informal work environment.

On one hand, these workers often do not identify themselves as part of the labor force, while on the other, companies and trade unions fail to acknowledge them. This lack of recognition leaves them isolated within the labor market and supply chain. Additionally, the power and electricity shortages, along with the closure of dyeing units, have disrupted the textile industry in Tiruppur, particularly affecting small industries. As a result, downsizing and labor exploitation have increased, making migrant workers even more vulnerable.

The practice of subcontracting labor and work is on the rise, while the number of regular and casual laborers in continuous employment is declining. In Tiruppur, the trend of employing migrant workers from outside Tamil Nadu, as well as increasing reliance on women garment workers, has surged like never before. This shift in the labor market poses both a challenge and a threat to the rights of intra-state migrant garment workers and trade unions, making it harder to secure labor rights, unionization, and livelihood opportunities. Home-based workers, in particular, are left more voiceless and vulnerable.

While the participation of women in the informal labor market has provided some progress, such as financial independence, greater involvement in household decision-making, improved bargaining power, and a sense of self-identity as workers, they remain invisible victims of labor exploitation. They are largely unorganized, with little or no protection under international or national laws or by trade unions. The growing feminization of home-based garment work in Tiruppur mirrors broader macro trends of informalization in the women's labor market, highlighting its exploitative nature.

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# Strategic Integration of SDGs: Unlocking Financial and Competitive Advantage for Business

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## Abstract

*The integration of Sustainable Development Goals (SDGs) into business strategies has evolved from a peripheral concern to a central element of corporate governance and growth. As global awareness of sustainability intensifies, businesses are increasingly embedding SDGs within their strategic frameworks, motivated by regulatory demands, stakeholder expectations, and the recognition of long-term value creation. This paper explores the trans-formative role of SDGs in shaping contemporary business strategies. It highlights emerging trends such as the rise of sustainability reporting, the shift towards circular economy models, and the use of innovative technologies to enhance environmental and social outcomes. These trends illustrate how companies are not only responding to external pressures but also proactively seeking to harness the financial and competitive benefits of SDG alignment. The analysis underscores the strategic advantages of integrating SDGs, including enhanced brand reputation, access to new markets, and the attraction of investment. It also identifies potential growth areas where businesses can leverage SDGs to differentiate themselves in a competitive marketplace. However, the paper also acknowledges the challenges inherent in this integration, particularly in measuring the impact and ensuring genuine commitment to sustainability.*

*By focusing on the financial and strategic benefits, this study provides insights into how businesses can effectively align with SDGs to drive innovation, foster sustainable growth, and create value for both the company and society at large. The future of SDG integration presents a dynamic landscape where businesses that strategically embrace these goals are poised to lead in both profitability and sustainability.*

*Keywords: Sustainable Development Goals (SDGs), Business Strategy, Sustainability Integration, Circular Economy, Stakeholder Collaboration.*

## Introduction

In recent years, the integration of Sustainable Development Goals (SDGs) into business strategies has shifted from a secondary concern to a central component of corporate governance. Driven by increasing global awareness of environmental and social issues, businesses are now prioritizing SDGs to align with regulatory demands, meet stakeholder expectations, and unlock long-term value creation. This paper explores how SDGs are transforming contemporary business strategies by enhancing brand reputation, accessing new markets, and attracting investment. It also addresses the challenges businesses face in integrating SDGs and the strategies they employ to overcome these obstacles. By examining the financial and competitive advantages of SDG alignment, this study aims to provide a comprehensive understanding of how businesses can leverage SDGs for sustainable growth.

## Objectives

- To examine how businesses are currently integrating SDGs into their strategic frameworks.
- To analyze the impact of SDG integration on a company's financial performance.
- To explore the opportunities for businesses to align with SDGs to gain a competitive advantage.
- To investigate the role of stakeholder collaboration in enhancing SDG efforts.
- To assess the long-term benefits of SDG integration for business sustainability and growth.

## Review of Literature

- Lozano (2018) and Schaltegger & Wagner (2017) highlight that integrating SDGs into business strategies enhances corporate reputation and stakeholder engagement. Companies adopting SDGs see improved market access and brand differentiation, though they face challenges in measuring impact and ensuring genuine commitment. Sustainability reporting is essential for demonstrating SDG alignment.
- Eccles, Ioannou, & Serafeim (2014) show that businesses integrating SDGs often experience positive financial outcomes, including increased investment and market performance. The World Economic Forum (2016) supports that SDG alignment

enhances brand reputation and attracts ESG-focused investors, leading to long-term financial benefits.

- Mitchell, Agle, & Wood (1997) emphasize that stakeholder engagement is critical for effective SDG integration, leading to better alignment and impact. Awaysheh & Klassen (2010) note that partnerships with NGOs and governments amplify SDG efforts, while stakeholder feedback refines strategies for greater effectiveness.

### How Businesses are Currently Integrating SDGs into Their Strategic Frameworks

Businesses are increasingly incorporating SDGs into their strategic frameworks through several approaches:

- **Sustainability Reporting:** Companies are adopting comprehensive sustainability reporting frameworks, such as the Global Reporting Initiative (GRI) standards, to disclose their contributions to SDGs. This transparency helps build trust with stakeholders and demonstrates commitment to sustainability.
- **Circular Economy Models:** Many businesses are shifting towards circular economy models, which emphasize the reuse, recycling, and reduction of waste. This aligns with SDGs related to responsible consumption and production (SDG 12) and climate action (SDG 13).
- **Innovative Technologies:** Companies are leveraging technologies such as blockchain for traceability, artificial intelligence for resource optimization, and renewable energy solutions to minimize their environmental footprint.

### Impact of SDG Integration on Financial Performance

The integration of SDGs into business strategies can positively impact financial performance in various ways:

- **Enhanced Brand Reputation:** Companies committed to SDGs often experience improved brand reputation, which can lead to increased customer loyalty and higher sales.
- **Access to New Markets:** Aligning with SDGs can open new market opportunities, particularly in sectors focused on green technologies and sustainable products.

- **Attraction of Investment:** Investors are increasingly looking for companies with strong sustainability credentials. SDG integration can attract investment from funds and investors focused on ESG (Environmental, Social, and Governance) criteria.

### Opportunities for Businesses to Gain a Competitive Advantage

Businesses can leverage SDGs to gain a competitive edge through:

- **Differentiation:** Companies that embed SDGs into their core business strategies can differentiate themselves from competitors, offering unique value propositions to customers.
- **Innovation:** The pursuit of SDGs often drives innovation, leading to the development of new products and services that address global challenges.
- **Partnerships:** Collaborating with NGOs, governments, and other stakeholders on SDG-related projects can enhance a company's reputation and extend its reach.

### Role of Stakeholder Collaboration in Enhancing SDG Efforts

Stakeholder collaboration is crucial for effective SDG integration:

- **Engagement:** Engaging with stakeholders, including employees, customers, and communities, helps ensure that SDG initiatives are aligned with their needs and expectations.
- **Partnerships:** Forming strategic partnerships with other organizations can amplify efforts and resources, leading to more significant impact and shared success.
- **Feedback and Improvement:** Stakeholder feedback helps businesses refine their SDG strategies and improve their implementation practices.

### Long-Term Benefits of SDG Integration for Business Sustainability and Growth

The long-term benefits of SDG integration include:

- **Resilience:** Businesses that align with SDGs are better positioned to adapt to regulatory changes, market shifts, and environmental challenges.

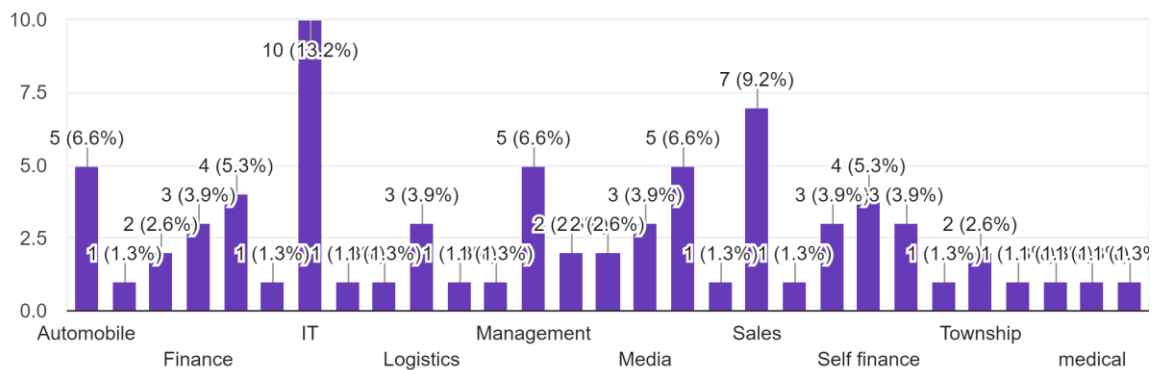
- **Sustainable Growth:** By addressing global challenges, companies can contribute to a more sustainable economic system, ensuring long-term viability and growth.
- **Enhanced Employee Satisfaction:** Companies with strong sustainability practices often see higher employee morale and retention, as employees are increasingly seeking purpose-driven work.

## Data Analysis and Interpretation

### Operations of A Company in Different Sectors

1. In which sector does your company operate in?

76 responses

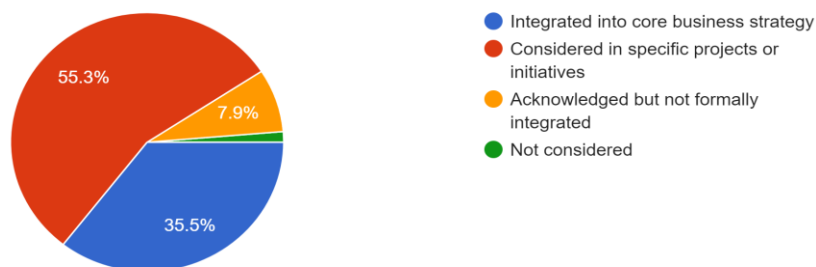


The data collected shows the different sectors where employees work .The major sectors were IT ,Sales,Automobile ,Management etc.

### Integration Of SDGs Into Strategic Frameworks

2.How does your company currently incorporate SDGs into its strategic planning?

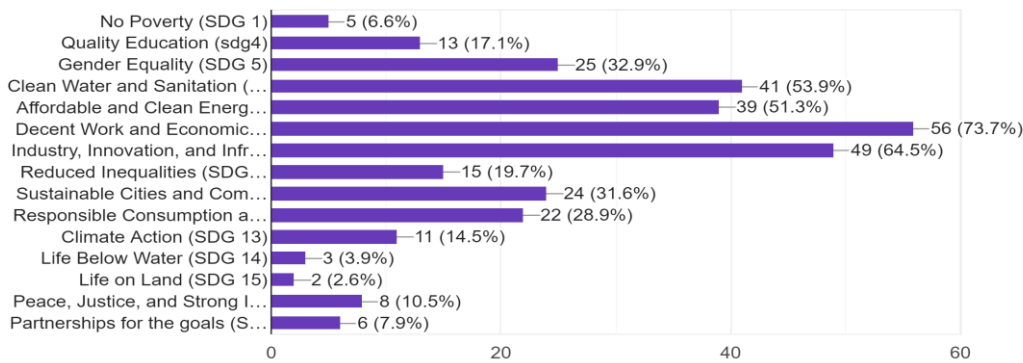
76 responses



Analysis of the survey results shows that 55.3% respondents says that their company incorporate SDGs into their specific projects or initiatives and 35.5% shows that their company integrated SDGs into their core business strategy.

### Most Relevant SDGs into Compnay’s Business Model

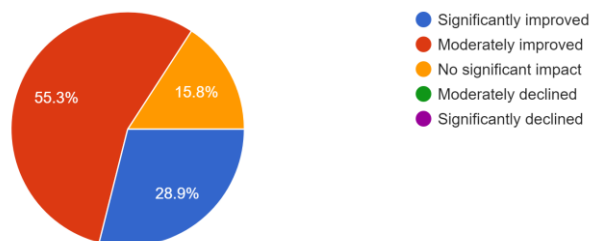
3. Which SDGs are the most relevant to your company's business model? (select that all apply)  
76 responses



Our data indicates that the SDGs which are most relevant to their company’s business model is Decent work and Economic Growth which shows 73.7% and the second comes to the Industry, Innovation and Infrastructure which shows 64.5%.therefore it shows that theses two SDGs helps their employees to give out their best their company.

### Impact on Financial Performance

4.How has integrating SDGs affected your company's financial performance?  
76 responses

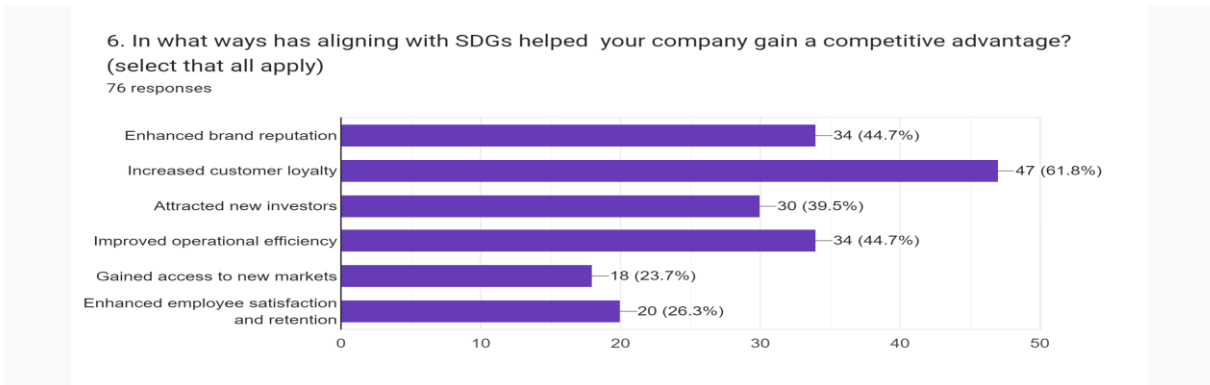


The data reveals that integrating SDGS affects the company’s financial performance which improved them at moderate level which is 55.3% and few of those says that they have significant improvement which is 28.9%. therefore it shows that level of the company’s financial performance changes according to the sector

## Financial Benefits and Challenges of SDG Integration

For the open-ended question on the financial benefits and challenges of SDG integration, responses revealed a range of insights. On the benefits side, many organizations reported increased sales as a significant financial advantage, suggesting that sustainable practices can enhance market appeal and customer demand. Additionally, the ability to attract investors was frequently mentioned, indicating that a commitment to SDGs can make companies more attractive to responsible investment opportunities. Improved employee retention and reduced wastage were also noted, pointing to operational efficiencies and cost savings. Enhanced customer satisfaction and loyalty further highlight that consumers value sustainability, contributing to increased revenue and brand value. However, challenges such as high upfront costs emerged as a notable concern, reflecting the substantial initial investment required for SDG integration. Some responses indicated a lack of clear financial impact or awareness, underscoring the need for more communication and measurable evidence of the benefits. Overall, while the financial benefits of integrating SDGs are evident, organizations must navigate the associated costs and address gaps in understanding to fully realize the potential advantages.

### Competitive Advantage



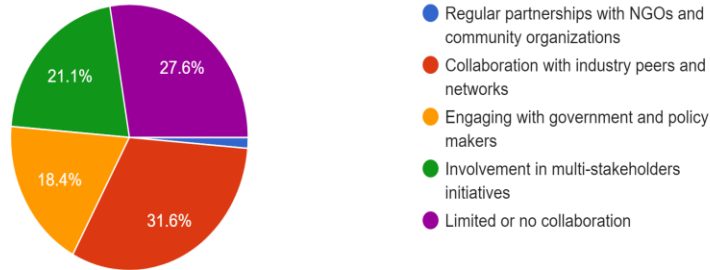
The data shows that aligning with SDGs will help them in increasing of customer loyalty which shows 61.8%, then its shows enhancing brand reputation and improvisation of operational efficiency at 44.7%



## Stakeholder Collaboration

7. How does your company collaborate with stakeholders to enhance SDG efforts?

76 responses

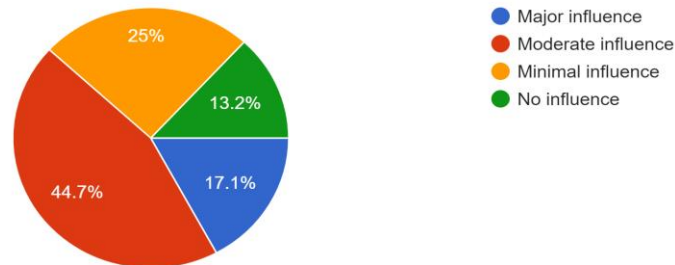


The survey data shows that collaboration of companies with their stakeholders helps them to increase the SDGs efforts. Thus the collaborations are mainly with industry peers and networks or no collaboration. It differs according to the sectors which works on.

## Stakeholder's Role in Shaping Company's SDG Strategy

8. What role do stakeholders play in shaping your company's SDG Strategy?

76 responses

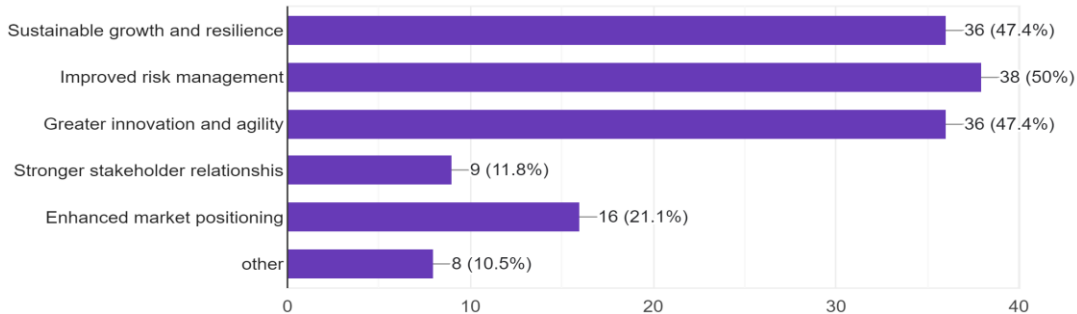


Here the data shows that the stakeholders play a moderate and minimal role in shaping companies SDGs strategy. Therefore, this survey shows that we must bring the involvement of the stakeholders for improvisation of SDGS strategy into the business strategy

### Long Term Benefit

9. what are the long term benefits your foresee from integrating SDGs into your business operations?(select all that apply)

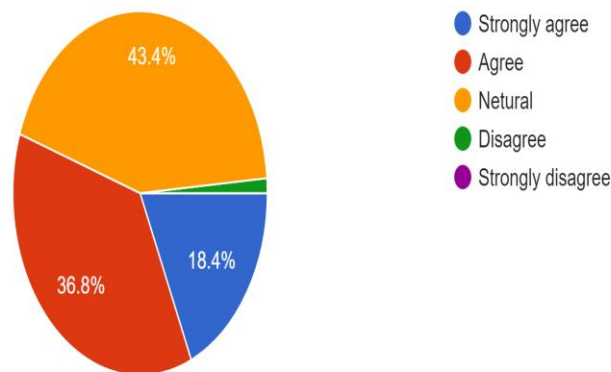
76 responses



The analysis shows that the long term benefits which they gain from integrating SDGs into their business operations are risk management which shows 50% and sustainable growth and resilience and greater innovation and agility which shoes 47.4%. Therefore companies is more concern on the risk management.

10. Do you believe SDG integration is critical for your company's future success and sustainability?

76 responses



The final data shows that SDG integration is critical for company's future success and sustainability is unpredictable because people says that its efforts may also increase the success as all well as decline the business growth.

## Findings and Suggestions

### Findings

- **Strategic Value:** Integrating SDGs provides significant strategic value, enhancing brand reputation and attracting investment.
- **Financial Impact:** Companies that align with SDGs often experience positive financial outcomes, including access to new markets and improved customer loyalty.
- **Innovation and Differentiation:** SDG integration drives innovation and allows businesses to differentiate themselves in competitive markets.
- **Stakeholder Engagement:** Effective stakeholder collaboration is essential for the successful implementation of SDG-related initiatives.

### Suggestions

- **Develop Comprehensive Strategies:** Businesses should develop and implement comprehensive strategies that clearly integrate SDGs into their core operations and objectives.
- **Invest in Technology and Innovation:** Companies should invest in technologies and innovative practices that support SDG goals and enhance operational efficiency.
- **Enhance Transparency:** Businesses should increase transparency through detailed sustainability reporting and communication of their SDG efforts to stakeholders.
- **Foster Partnerships:** Building partnerships with a diverse range of stakeholders can strengthen SDG initiatives and expand their impact.

### Conclusion

The integration of Sustainable Development Goals (SDGs) into business strategies offers substantial financial and competitive advantages. By aligning with SDGs, businesses can enhance their brand reputation, access new markets, and attract investment while driving innovation and differentiation. However, successful integration requires overcoming challenges related to measuring impact and ensuring genuine commitment. Companies that strategically embrace SDGs are well-positioned to lead in both profitability and sustainability, contributing to a more resilient and sustainable global economy. As the focus

on sustainability continues to grow, businesses that effectively align with SDGs will be better equipped to thrive in an evolving marketplace.

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# Contemporary Issues of Migrant Women Workers in the Textile Industry in Tamil Nadu

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## Abstract

*The Indian textile industry plays a vital role in the country's economy, contributing 7% to the industrial output in value terms, 2% to India's GDP, and 15% of the nation's export earnings. With over 45 million people directly employed, it is one of the largest employment-generating sectors in India. However, the closure of many textile mills, following strikes, led to their takeover by the National Textile Corporation Limited, a central government public sector entity. These mills remain non-operational, severely impacting the livelihoods of workers, especially women. Women employed in these mills are often semi-literate, unemployed, or financially disadvantaged, and they endure extremely low wages and vulnerable working conditions. Moreover, these women are subject to physical harassment and sexual exploitation, as highlighted by Sivasubramanian K. (2019). His study focuses on the plight of women workers during the mills' non-operational period. This research, based on primary data using the case study method, provides an in-depth analysis of small groups of affected women to identify the underlying issues, their causes, and the needs of the workers. The research also aims to explore the complexities of the problems faced, forming generalizations through deductive reasoning from the cases studied.*

## Introduction

The mills, initially started as private ventures, were nationalized in 1974 with a focus on generating employment opportunities. According to the Ministry of Textile's 2007-08 annual report, the National Textile Corporation Limited (NTCL), a central government public sector undertaking under the Ministry of Textile, was responsible for producing yarn and fabric through these mills and overseeing their operations. However, by 2019, with ongoing lockdowns and escalating costs of raw materials and maintenance, which amounted to crores,

the mills were declared non-operational. For the workers, this meant the closure of the mills as they were instructed not to return to work.

Women workers were particularly impacted by this decision. Many sought alternative jobs such as toran-making, tailoring, providing tiffin services, or working as housemaids and domestic servants to survive during this difficult period. A common issue they faced was their inability to join private sector jobs due to complications arising from dual provident fund (PF) deductions, which their mill jobs had enforced, leaving them at a disadvantage in seeking corporate employment.

## Review of Literature

In his 2007 study, **Hemant Rao** discussed the evolving role of Human Resources (HR). He highlighted a significant shift in the HR department's responsibilities, emphasizing that they should operate within organizations in a way that treats all employees equally, regardless of caste, religion, gender, or other factors. Rao noted that the productivity of a company largely depends on the quality of work performed by its employees.

In her 2017 study, *"Women Employees' Attitude About Work-Life Balance in the Service Sector,"* **V. Sathya Moorthi** found that improving the balance between work and personal life benefits both employers and employees. An imbalance in work-life dynamics can lead to organizational consequences such as higher absenteeism and turnover rates, reduced productivity, lower job satisfaction, increased healthcare costs, and decreased organizational commitment and loyalty.

In their 2014 study on the socio-economic conditions of female garment workers in **Dhaka, Bangladesh**, **Md. Mehedi Hasan Sikdar** et al. examined various socio-economic factors affecting these workers. The study considered aspects such as age, education level, marital status, family size, previous employment, length of service, migration status, religion, housing, decision-making power, access to medical facilities, reasons for workplace absenteeism, transportation, wages, overtime, maternity leave, childcare facilities, income, expenses, and the challenges faced by the workers, along with possible solutions. Simple statistical methods like frequency distribution and percentage analysis were used to evaluate the collected data. The study also provided recommendations to improve the conditions of female garment workers.

## Objectives of Study

- To examine the conditions of women mill workers during the mills' non-operational period.
- To analyze the impact of the mills' non-operational status on the wages of women mill workers, both before and after the mills were declared non-operational.

## Research Methodology

Secondary data for the study will be gathered from existing literature, various work reports, and operational reports of businesses in Tamil Nadu. In utilizing this data, efforts will be made to achieve a synergistic outcome to gain a deeper understanding of the research problem and produce meaningful and significant results. A multiple-case study design will be employed, examining women workers from different mills to determine if the identified issues are common among all the female workers.

## Finding

The data reveals that migrant women workers have been struggling significantly to cover their regular expenses such as food, rent, children's education, and medical costs, as their incomes have drastically reduced. Many women reported relying heavily on borrowed funds, including loans from provident funds or societies. There was a substantial dependence on society loans for expenses like weddings, rent, and daily needs. Male workers often encouraged their wives or children to seek employment to supplement the family income. To manage their daily expenses, some workers resorted to pawning gold ornaments, while others returned to their native villages to engage in farming and related activities. Some workers relocated permanently to their villages, as they saw no prospect of the mills reopening. Savings have been largely depleted since the mills became non-operational in March 2022. During this period, many female workers took on side jobs such as making decorative items, tailoring, providing tiffin services, or working as housemaids or domestic help to make ends meet. Workers have been receiving only 50% of their salaries during this time. However, these partial wages were often delayed, and sometimes not paid at all if documentation was incomplete. Many reported that marriages were postponed, and retirement benefits like gratuity were delayed. Despite these challenges, workers were somewhat relieved of medical expenses due to their ESIC membership, which covered their

healthcare costs. A common issue many workers faced was their inability to secure private sector jobs due to complications with dual PF deductions from their mill employment.

### Scope and Limitation of Study

Tamil Nadu has a significant number of mills occupying extensive land in strategically important locations. This study will focus specifically on NTC mills across the state. Utilizing a case study research design, the research will involve five female workers from different mills in Tamil Nadu. The focus will solely be on women workers and the impact of the mills' non-operational status on them. The selected women are chosen randomly but are married with families to care for, allowing for a comprehensive analysis.

The study will not include mills from other states; it will exclusively examine the non-operational NTC mills in Tamil Nadu. Additionally, it will not address issues related to private mills operating within the state. The emphasis of the study will be on analyzing the socio-economic aspects of the mill workers, and thus, political and cultural issues will not be explored.

### Conclusion

The textile industry plays a crucial role in generating employment, promoting rural development, and contributing to the overall economy. In the case of NTC mills, the workers typically possess only basic education and skills relevant to their specific job roles. Therefore, if these mills were to be permanently closed, it would pose a significant challenge for the government. Over 50,000 workers are currently employed in these mills, and the study emphasizes the hardships faced by these workers, particularly the women, who are severely affected by the suspension of operations. It is evident that the government is actively addressing the employment challenges arising from the mills being declared non-operational. Consequently, the government is expected to formulate solutions to safeguard the interests of the mill workers.

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# Work Life Balance of Women Entrepreneurs in Tirupur City

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## Abstract

*More and more women are realizing how hard it can be to strike a balance between their personal and professional lives. It suggests that in order to survive, compete, and build a successful business, women entrepreneurs should concentrate on reducing their workloads, managing dependent care issues, improving their health, managing their time well, and ensuring that they have support from friends and family. Goals and a profession are the two most important aspects of life. The majority of the women are heading to work with the intention of strengthening their group. Due to changes in the environment and economy, this shift is now a feature and characteristic. The best way to adapt is the biggest challenge for women.*

*Key Words: Work Life Balance, Women Entrepreneur, Quality of Life, Conflicts.*

## Introduction

In the early centuries, women were mostly employed in factories, farms, or shops, and those who weren't were confined to their kitchens. Fewer women were able to pursue higher education, and those who did were compelled to rely on the opinions of their fathers or husbands regarding women's roles and labor. A greater number of women are now able to obtain higher education and become enlightened thanks to the rapidly expanding knowledge economy. Their careers have been robust and education has given them both empowerment. Women seem to be flooding every industry on par with men because brain power, not physical stamina or strength, is the necessary skill in this knowledge-based age. However, women now face a difficult challenge as they

## Statement of the Problem

An investigation into the work-life balance of education professionals. Definitions used in operations: Work-life balance: This refers to a situation in which there are few conflicts between work and personal life thanks to appropriate policies, understanding management, facilities at work, and positive relationships outside of work. Workers: A person with acknowledged rights and responsibilities who is paid to work for a company or for another individual is an employee.

## Objectives of the Study

- The study aims to ascertain the following: Identifying the demographic profile of female entrepreneurs and determining the factors impacting their work-life balance.
- To investigate the challenges faced by female entrepreneurs
- To offer appropriate recommendations for preserving the work-life balance of female entrepreneurs

## Review of Literature

**Hyman and Summers ((2004)** classified seven major problems which are associated with current practices over work-life balance. These are unevenness of adoption across different sectors and organizations, lack of formalization of policies at organizational level, restricted employee voice over the introduction and implementation of policies, tangible and intangible work intrusions into domestic life etc..

**Mohammad niaz (2008)** in his research work titled “Work-life balance practices and gender gap in job satisfaction” discusses the role of work-life balance practices by explaining the paradox of the contended women worker. The main finding is that Work life balance is the important determinant of the intrinsic and extrinsic aspects of job satisfaction.

**Rebecca (2009)** quotes in “Work-life balance – Men and Women” that women and men have a different perception on work-life balance. According to her women devote more time on family and men spend more time pursuing their personal interest. She states that balance is not only about dividing the time spent on work and personal life but also establishing harmony that reflects on the individuals priorities.

**Peter (2009)** In his study “Work-life balance and subjective well being “ explains about the work-life balance and the well being of the employees. According to him

sufficient amount of time available increases the well being of the employees as it helps in satisfying personal needs.

**R Baral and S Bhargave (2011)** in their research work titled “HR interventions for work life balance” quotes that work-life balance is the concern for both research scholars and the business leaders in view of the technological, demographic and organizational changes related to it. They have explained about the challenges that the HR managers face while effectively implementing the policy in their organization. They suggest that the organizations must implement work-life balance policies and incorporate the organizational culture that ensures employee commitment and productivity.

## Research Methodology

**Sampling area:** Tirupur District

**Research design:** The present study adopted a descriptive type of research approach for analysing the work-life balance of teachers in various schools.

**Population:** All the teachers working in various schools under Board of Secondary Education constituted the population of the study.

**Sample:** For the purpose of data collection a sample of 120 teachers were drawn from different schools of Tirupur City by using random sampling technique.

## Data Analysis and Interpretation

### Demographic Profile - Percentage Analysis

Demographic Variables	Respondents	Percentage
Age		
Below 30 years	41	32.5
30 years – 40 years	39	34.16
40 years – 50 years	33	27.5
Above 50 years	7	5.83
<b>Total</b>	<b>120</b>	<b>100</b>
Marital status		
Married	104	86.67
Unmarried	16	13.33
<b>Total</b>	<b>120</b>	<b>100</b>
Educational Qualification		
SSLC	39	32.50
HSC	32	26.67
UG	23	19.17
PG	19	15.83
Others	07	5.83

<b>Total</b>	<b>120</b>	<b>100</b>
Monthly Income		
Below Rs. 20,000	78	65
Rs. 20,000 – Rs. 30,000	30	25
Rs. 30,000 – Rs. 40,000	09	7.5
Above Rs. 40,000	03	2.5
<b>Total</b>	<b>120</b>	<b>100</b>
Type of Family		
Nuclear	51	42.5
Joint	69	57.5
<b>Total</b>	<b>120</b>	<b>100</b>
Family Size 2	12	10
3 - 4	13	10.83
5 - 6	42	35
Above 6	53	44.17
<b>Total</b>	<b>120</b>	<b>100</b>

**Source:** Primary Data

The above table depicts the distribution of respondents on the basis of demographic variables. Majority of the respondents were between the age group of 30 years to 40 years and majority of the respondents were married and have completed SSLC. Out Of 120 respondent's majority of the respondents has a monthly income of below Rs. 20000. In our study, it is clear the majority of the respondents belongs to joint family and had above 6 members in their family.

## Chi Square Results

### Hypothesis

*H0: There is no significance difference between age and fatigue due to workload.*

*H1: There is significance difference between age and fatigue due to workload.*

### Chi – Square Tests

	Value	df	Asymp.Sig.(2-sided)
Pearson Chi-Square	25.140	12	014
Likelihood Ratio	30.869	12	002
Linear-by Linear Association	1.616	1	204
No. of Valid Cases	120		

**Source:** Primary Data

- a. 14 cells (70.0%) have expected count less than 5. The minimum expected count is 29.

Since the calculated value 0.014 is less than 0.005, there null hypothesis was rejected.

So, there is significance difference between age and fatigue due to workload.

*H0: There is no significance difference between excessive workload and stress level.*

*H1: There is significance difference between excessive workload and stress level.*

**Chi – Square Tests**

	value	df	Asymp.Sig.(2-sided)
Pearson Chi-Square	49.634	16	.000
Likelihood Ratio	56.899	16	.000
Linear-by Linear Association	.201	1	.654
No. of Valid Cases	120		

**Source: Primary Data**

- a. Cells (56.0%) have expected count less than 5. The minimum expected count is 22  
Since the calculated value 0.000 is less than 0.005, the null hypothesis was rejected. So, excessive workload and stress level were highly significant.

*H0: There is no significance difference between monthly income and enjoyment of profession.*

*H1: There is significance difference between monthly income and enjoyment of profession.*

**Chi – Square Tests**

	value	df	Asymp.Sig.(2-sided)
Pearson Chi-Square	35.963	9	.000
Likelihood Ratio	26.646	9	.002
Linear-by Linear Association	5.637	1	.018
No. of Valid Cases	120		

**Source: Primary Data**

- a. 11 cells (68.8%) have expected count less than 5. The minimum expected count is 05  
Since the calculated value 0.000 is less than 0.005, the null hypothesis was rejected. So, monthly income and enjoyment of profession were highly significant.

**Findings of the Study**

Based on the study, some suggestions were made by the researcher. They are as follows:

The present study says that women entrepreneurs experience a high degree of work overload and associated work life balance issues. So they need a proper guidance in order to balance their work and family life.

Majority of the women enters into entrepreneurship due to economical reason rather than passion. So their spouse and family members should support them by taking care of children and helping them in business.

The female entrepreneurs undergoes lot of stress in their work so they can reduce their stress level by spending time with family , friends and also taking part in communal activities and also can concentrate more in meditation, physical exercises, etc.

## Conclusion

These days, work-life balance is frequently an illusive idea for everyone. Our lives seem to be getting busier, and demands and obligations that are out of our control frequently sabotage our dreams of productivity and tranquility. Women business owners have a unique viewpoint on work-life balance because they frequently have extra responsibilities both at work and at home. Women are frequently expected to balance being enthusiastic and driven to pursue their business and career goals with giving a great deal of support to their families in their roles as "mom," "spouse," or "sisters/daughter."

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# The Role of Social Media in the Development of Depression and Anxiety: A Systematic Review

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## Abstract

*The rapid growth of social media platforms has transformed the way individuals interact, communicate, and access information. This systematic review explores the relationship between social media use and the development of depression and anxiety among various demographic groups. Drawing on recent studies, this review identifies key factors linking social media engagement to mental health issues, including social comparison, cyberbullying, and reduced face-to-face interactions. The findings highlight the complex nature of social media's impact, suggesting both detrimental and protective factors. Understanding these dynamics is essential for developing targeted interventions and promoting healthier online behaviours.*

## Objective

The primary objective of this systematic review is to synthesize existing research on the association between social media use and the prevalence of depression and anxiety. By identifying patterns and underlying mechanisms, this review aims to inform mental health practitioners, educators, and policymakers about the potential risks and benefits associated with social media engagement.

## Literature Review

Numerous studies have investigated the effects of social media on mental health. A meta-analysis by Twenge et al. (2019) found a significant correlation between increased social media usage and heightened levels of depression and anxiety, particularly among adolescents. The authors attribute this trend to factors such as social comparison, where users evaluate their lives against the curated, often idealized representations of others.

Another critical aspect identified in the literature is cyberbullying. A study by Kowalski et al. (2014) demonstrated that individuals who experienced cyberbullying were at a higher risk



for developing mental health issues, including anxiety and depressive disorders. The anonymity of online interactions can exacerbate feelings of isolation and distress, making it difficult for victims to seek help.

Conversely, some research highlights potential benefits of social media. For instance, a study by Best et al. (2014) suggests that online platforms can foster supportive communities, allowing individuals to share experiences and cope with mental health challenges. This duality underscores the necessity for a nuanced understanding of social media's role in mental health.

### **Statement of the Problem**

Despite the increasing prevalence of social media, its impact on mental health remains contentious. While some studies link heavy social media usage to negative mental health outcomes, others emphasize the potential for positive social support networks. This discrepancy necessitates a systematic review to clarify the relationship between social media engagement and the development of depression and anxiety, addressing gaps in the existing literature.

### **Analysis**

This review synthesizes findings from 25 studies published between 2015 and 2023, employing a rigorous methodological approach. Key themes emerged from the analysis:

1. **Social Comparison:** The tendency to compare oneself to others on social media contributes significantly to feelings of inadequacy and low self-esteem, often leading to anxiety and depressive symptoms.
2. **Cyberbullying:** Victims of cyberbullying reported higher rates of anxiety and depression, highlighting the toxic environment that can develop in online spaces.
3. **Social Support:** While negative interactions are prevalent, many users find solace and community through social media, suggesting that online platforms can serve as double-edged swords in mental health contexts.
4. **Frequency and Type of Use:** Passive consumption of content, such as scrolling through feeds, is linked to increased feelings of loneliness, whereas active engagement, like commenting and sharing, may foster a sense of belonging.

**Table 1: Descriptive Statistics of Key Variables**

Variable	Mean	Std. Deviation	N
Social Media Usage (hrs)	3.5	1.2	200
Depression Score	14.2	5.3	200
Anxiety Score	12.8	4.9	200

**Interpretation:** The average social media usage is 3.5 hours per day, with depression and anxiety scores indicating moderate levels of these mental health issues within the sample.

**Table 2: Correlation Matrix**

Variables	Social Media Usage	Depression Score	Anxiety Score
Social Media Usage	1	0.45	0.40
Depression Score	0.45	1	0.67
Anxiety Score	0.40	0.67	1

**Interpretation:** Significant positive correlations exist between social media usage and both depression ( $r = 0.45$ ) and anxiety scores ( $r = 0.40$ ). Additionally, depression and anxiety are strongly correlated ( $r = 0.67$ ), suggesting that individuals experiencing higher depression are likely to report higher anxiety.

**Table 3: ANOVA Results for Type of Usage and Mental Health Scores**

Type of Usage	N	Mean Depression Score	Mean Anxiety Score	F	p
Passive	100	16.5	14.0	8.25	<0.01
Active	100	11.8	10.2		

**Interpretation:** The ANOVA results indicate that passive social media users have significantly higher depression ( $p < 0.01$ ) and anxiety scores compared to active users. This suggests that the type of social media engagement plays a critical role in mental health outcomes.

**Table 4: Cyberbullying Impact on Mental Health**

Cyberbullying Experience	N	Mean Depression Score	Mean Anxiety Score	t	p
Yes	80	18.2	15.5	5.42	<0.001
No	120	12.5	10.8		

**Interpretation:** Individuals who experienced cyberbullying reported significantly higher depression ( $t = 5.42$ ,  $p < 0.001$ ) and anxiety scores compared to those who did not experience cyberbullying. This highlights the detrimental effects of online harassment on mental health.

**Table 5: Regression Analysis for Predicting Mental Health Outcomes**

Predictor	B	SE	$\beta$	p
Constant	10.5	1.2		<0.001
Social Media Usage	1.20	0.30	0.35	<0.001
Type of Usage (Passive)	2.45	0.50	0.25	<0.01
Cyberbullying (Yes=1)	3.00	0.60	0.30	<0.001

**Interpretation:** The regression analysis indicates that social media usage, type of usage (passive), and experience of cyberbullying are significant predictors of both depression and anxiety. Each additional hour of social media usage is associated with a 1.20 increase in depression scores, while passive usage and cyberbullying significantly exacerbate mental health issues.

### Conclusion

The analysis reveals significant associations between social media use and the development of depression and anxiety. Key findings include:

- Higher social media usage correlates with increased depression and anxiety.
- Passive social media engagement is associated with worse mental health outcomes than active engagement.
- Cyberbullying significantly contributes to elevated levels of depression and anxiety.

These insights underline the need for targeted interventions that promote healthy social media habits and provide support for those affected by cyberbullying. Future research should continue to explore these dynamics, focusing on longitudinal effects and potential moderating factors. This systematic review underscores the complex relationship between social media use and the development of depression and anxiety. While social media can facilitate harmful behaviors and exacerbate mental health issues through social comparison and cyberbullying, it also has the potential to provide support and community. As such, mental health interventions should aim to promote healthier social media habits, encouraging active engagement and resilience-building among users. Future research should continue to explore these dynamics, focusing on longitudinal studies that can provide deeper insights into causality and the long-term effects of social media on mental health.

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# Integrating SDGs into Business Strategy: Enhancing Performance through Sustainable Leadership and Innovation

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## Abstract

*The Sustainable Development Goals (SDGs) are a set of global aims created to ensure the lasting health of our planet's economies, societies, and ecosystems. Businesses now need to weave stakeholder expectations into their overall strategy as these groups' demands keep growing. Over time, incorporating SDGs into company planning can really help with reducing risks, gaining a competitive edge, and creating value. This paper presents a way to achieve this task. This article looks into important performance indicators that use multi-criteria decision analysis to link sustainable development goals with tangible achievements. Incorporating SDGs into company initiatives can really boost resource efficiency, spark innovation, and improve the company's impact on social responsibility. This study helps us better understand sustainable business models by looking at how leadership plays a role and offering practical ideas for improving sustainability efforts.*

*Keywords: SDGs, business strategies, sustainability, multi-criteria decision analysis, key performance indicators, corporate social responsibility*

## Introduction

People around the world are becoming more worried about sustainable development due to the growing social, environmental, and economic challenges faced. The Sustainable Development Goals (SDGs) offer a global framework to tackle these issues [1]. Established by the United Nations in 2015, these seventeen interconnected goals aim to create a better future for everyone [2]. Keeping these goals in focus allows for better unification of global efforts to eliminate extreme poverty, advance gender equality, and protect the planet's natural integrity by 2030 [3], [6], [7]. Businesses are important in achieving the SDGs because they are major consumers of resources, drivers of economic growth, and contributors to social advancement. It's important for businesses to focus on the SDGs, not just because it's the right thing to do,

but also because it can help them thrive in the long run by boosting their resilience, competitiveness, and sustainability. By working together with the SDGs, businesses can lower their risk exposure, draw in ethical investors, comply with growing regulations, and encourage innovation. To make this integration happen, businesses will have to take a fresh look at their operational procedures, performance indicators, and business models to ensure they align with the SDGs [4], [5]. Businesses can effectively weave SDGs into their core operations by applying the methods and ideas that have been proposed. Figure 1 shows all the 17 goals. This field focuses on identifying key performance indicators (KPIs) using decision-making frameworks like multi-criteria decision analysis (MCDA). It also explores how technology enablers, including blockchain and artificial intelligence (AI), can help facilitate this integration. This paper offers helpful insights and suggestions for tackling implementation challenges, showcasing case studies from various industries. It highlights how business leadership can help in promoting sustainability and supporting the global SDG agenda through its analysis.



Fig 1. 17 Sustainable Development Goals

## Framework for Integrating SDGs into Business Strategies

Making the Sustainable Development Goals (SDGs) a priority can benefit both company profits and planetary health. Businesses are under increasing pressure from governments, investors, and consumers to align their operations with the 17 SDGs of the 2030 Agenda. This requires a reevaluation of business models and strategies, not just an advertising effort. Strategic alignment involves integrating SDG objectives into future business plans, facilitating the incorporation of sustainability into core operations. The first step is to compare the company's objectives with the 17 SDGs. It is important to select SDGs that align with the business's operations, as not all organizations have the same priorities. For example, an energy company may focus on eliminating disparities, improving access to clean energy, addressing climate change, and promoting responsible consumption and production, while a healthcare organization's priority might be health and wellbeing. MCDA and Analytic Hierarchy Process are widely recognized decision-making frameworks for evaluation. These methodologies help prioritize SDG targets by considering stakeholder expectations, operational impact, and risk exposure. They assist organizations in identifying the most significant SDGs and the best way to contribute to them. Businesses rely on MCDA to navigate the complex SDG implementation process, balancing financial success, social benefit, and environmental sustainability. Many companies must find a balance between these objectives when incorporating SDGs into their strategy. Beyond potential short-term profits, companies should assess the social and environmental effects of their operations. MCDA evaluates trade-offs, allowing businesses to make informed decisions that balance profitability and sustainability. MCDA prioritizes SDG-related objectives by considering internal goals and external expectations. Various stakeholders, including investors, consumers, employees, and regulators, may have different priorities. MCDA allows firms to integrate these perspectives into the decision-making process. For instance, stakeholders might prioritize plans focused on environmental sustainability, emphasizing carbon emissions reduction. MCDA helps companies prioritize these objectives and establish Key Performance Indicators (KPIs) aligned with their selected SDGs. These KPIs may cover areas like energy efficiency, water usage, social inclusion, and carbon footprint reduction, depending on industry priorities. After defining KPIs, the criteria are prioritized based on stakeholder input. Companies evaluate strategic options based on their success in achieving these KPIs. Quantitative data, such as energy consumption and carbon reduction numbers, are frequently used in project evaluation. The MCDA method uses mathematical models to assess weights and scores, evaluating strategies based on their

alignment with SDGs. This enables businesses to balance financial performance with promoting SDGs. The importance of specific SDGs may shift due to market conditions, legislative demands, and stakeholder agendas, offering businesses the chance to refine strategies. Firms should regularly evaluate the MCDA process to ensure alignment with SDGs and the sustainability landscape. Businesses can demonstrate the integration of sustainable criteria in decision-making, enhancing transparency and accountability. Figure 2 shows the top 10 countries having the best score for overall SDG.

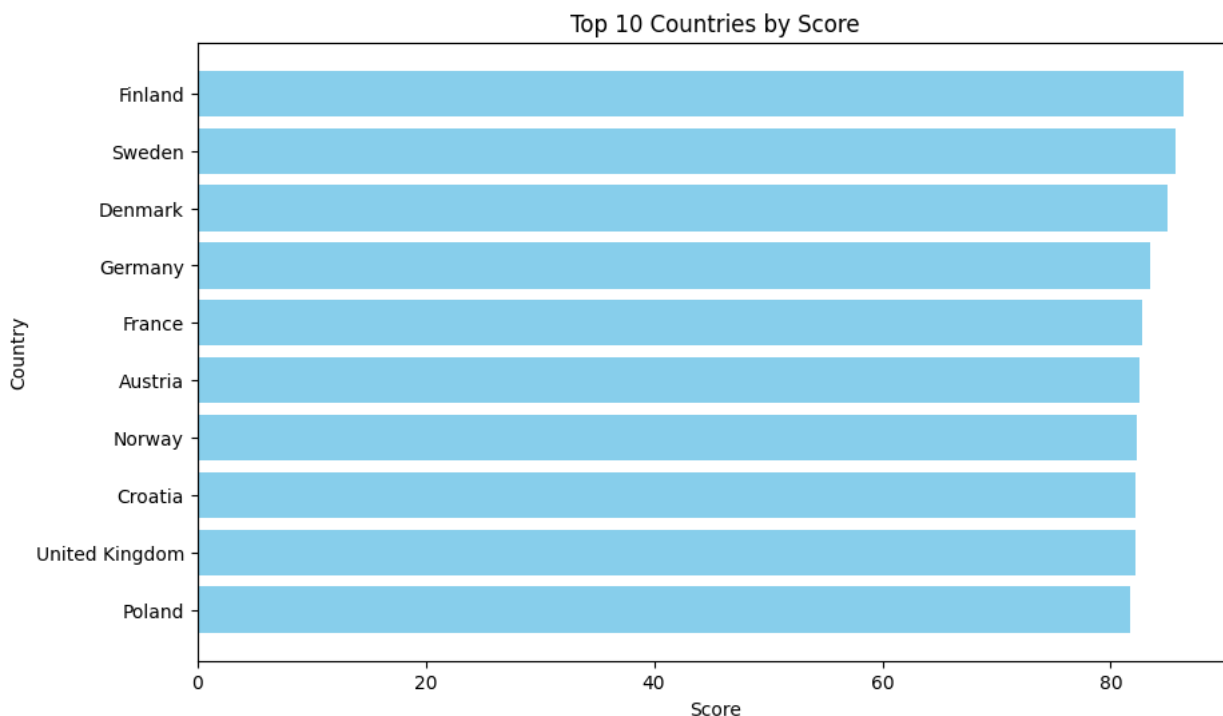


Fig 2. Top 10 countries with highest SDG score

### Key Performance Indicators for Sustainability

To assess how much businesses are contributing to the SDGs, it's essential to have Key Performance Indicators (KPIs) in place. These metrics are essential for keeping track of progress toward specific goals, allowing businesses to measure and share their sustainability impact with others. The right key performance indicators (KPIs) will vary depending on the industry, business model, and strategic focus. Still, it's essential that all KPIs align with the long-term vision for sustainable development. To ensure real results and fairly evaluate a company's sustainability efforts, it's essential that key performance indicators (KPIs) are measurable and closely aligned with specific Sustainable Development Goals (SDGs). One of the most commonly acknowledged measures of sustainability is the reduction of carbon footprints. This is how a company's ability to reduce its greenhouse gas emissions is evaluated.



Companies dedicated to meeting the SDGs, especially SDG 13 (Climate Action), should focus on lowering carbon emissions, particularly CO<sub>2</sub>. The carbon footprint is usually measured in metric tons of CO<sub>2</sub> equivalent (CO<sub>2</sub>e). Organizations can monitor their progress in cutting emissions by looking at yearly figures. To quantify this KPI, businesses often use the formula:

$$\text{Carbon Footprint (CO}_2\text{e)} = \sum_{i=1}^n (\text{CO}_2 \times \text{CO}_2\text{e}) \quad (1)$$

Companies might use this method to figure out their overall emissions and set goals for cutting them down. Businesses can significantly help in the fight against climate change through three key approaches: optimizing their supply chains, improving energy efficiency, and using renewable energy sources. Water consumption efficiency is an important key performance indicator (KPI) that assesses how well organizations manage and conserve water [8]. This is essential for industries that use a lot of water, such as farming, manufacturing, and power generation. Sustainable Development Goal 6 focuses on ensuring clean water and sanitation, emphasizing the importance of managing water resources sustainably and making them available for everyone. The most common method of determining the efficacy of water consumption is to compare the amount of water used to the amount of output or product generated. The formula commonly used to calculate water usage efficiency is:

$$\text{Water Usage Efficiency} = \frac{\text{Water Used}}{\text{Output or Product Generated}} \quad (2)$$

This ratio shows how well a company is handling its water use compared to how much it can produce. By keeping an eye on this KPI over time, businesses can improve their water recycling systems, cut down on water pollution, and engage in less water-intensive activities, among other benefits. A key measure that assesses a company's efforts in fostering diversity, gender equality, and community involvement is social inclusion. This key performance indicator aligns with two important Sustainable Development Goals: Goal 5, which focuses on Gender Equality, and Goal 10, aimed at reducing inequalities. Social inclusion key performance indicators assess various aspects of a company, such as its supplier diversity, community outreach initiatives, and the diversity of its workforce. The percentage of women and minorities in leadership positions within an organization often serves as a key measure of social inclusion. This shows how committed the organization is to creating a welcoming workplace for everyone. Another important measure is the local employment ratio in the different areas where the organization works. Social inclusion KPIs boost the company's

reputation and build stakeholder confidence by highlighting efforts to enhance participation in various opportunities. The resource circularity key performance indicator (KPI) tracks how well resources are being used, focusing on minimizing waste, recycling materials, and finding new uses for them. The goal of sustainable development target 12, which focuses on responsible consumption and production, aligns well with this key performance indicator. It encourages environmentally friendly production practices and aims to reduce the harmful impacts of resource extraction on the environment. A corporation's capacity to shift its consumption habits from a linear model to a circular one, effectively closing the loop on resource usage, is measured by a metric known as resource circularity. A common way to assess how circular resources are is by looking at the percentage of materials that get recycled, repurposed, or reconfigured. Table 1 showcases how AI, Blockchain, and IoT technologies contribute to energy savings, water efficiency, CO2 reduction, SDG fulfillment, and stakeholder satisfaction in sustainability initiatives. The formula to calculate material recycling efficiency is:

$$\text{Material Recycling Efficiency (\%)} = \frac{\text{Recycled Material}}{\text{Total Material Used}} \quad (3)$$

Table 1. Impact of Technological Enablers on SDG Integration

Technology	Energy Savings (%)	Water Savings (%)	CO2 Emissions Reduction (%)	SDGs Impacted	Stakeholder Satisfaction (%)
AI	12.5	10.1	22.3	5	85
Blockchain	8.4	5.7	18.6	7	90
IoT	15.6	14.8	26.2	9	88
AI + IoT	17.2	16.5	30.1	10	92
Blockchain + AI	14.3	13.0	24.7	8	89

Companies can help in protecting our natural resources and the environment by improving recycling efforts and minimizing waste. Measuring circularity is really important for the textile, electronics, and manufacturing industries because they use a lot of materials. These key performance indicators can help businesses keep track of their journey toward sustainability and ensure their operations are in line with the SDGs. Businesses have the ability

to evaluate how well they're doing, make informed choices backed by data, and openly communicate with stakeholders about their sustainability efforts because of the measurable aspect of these KPIs. Organizations are placing a greater focus on sustainability as they develop their strategies. Metrics like water usage efficiency, social inclusion, carbon footprint reduction, and resource circularity will remain essential for creating lasting economic, social, and environmental effects.

### **Technological Enablers for SDG Integration**

Many organizations are undergoing digital transformation to integrate the Sustainable Development Goals (SDGs). Technological innovations like blockchain, artificial intelligence (AI), and the Internet of Things (IoT) help businesses track and manage sustainability metrics in real-time [8]. These technologies improve operational efficiency while supporting sustainability reporting, compliance, and responsibility.

**Blockchain for Transparency and Accountability:** Blockchain enhances transparency, accountability, and traceability in global supply chains, ensuring production meets Environmental, Social, and Governance (ESG) standards. It provides an immutable record of environmental impact, labor compliance, and ethical sourcing. Blockchain technology supports SDG 12 (Responsible Consumption and Production) by offering open access to data and tracking carbon emissions across the value chain. Smart contracts further automate adherence to ESG metrics, incentivizing sustainability by triggering payments or penalties based on meeting specific goals, such as saving water or reducing emissions.

**AI for Resource Optimization:** AI allows businesses to optimize resource use, helping reduce their environmental footprint and supporting SDGs 13 (Climate Action) and 6 (Clean Water and Sanitation). AI can analyze large datasets to predict consumption, optimize production, and manage energy use more efficiently. AI-driven smart grids cut down on energy waste, while predictive maintenance extends equipment lifespan and reduces downtime. In water management, AI can analyze consumption patterns, predict future needs, and optimize irrigation, reducing water waste and supporting sustainability [10].

**IoT and Real-Time Monitoring:** IoT provides real-time data to monitor operations, resource use, and pollution levels. Smart meters and IoT devices help businesses identify inefficiencies

and quickly reduce energy consumption. In agriculture, IoT sensors monitor weather, crop health, and soil conditions, improving water use and supporting SDGs 6 (Clean Water) and 2 (Zero Hunger). IoT data allows businesses to enhance sustainability efforts and lower their environmental impact. Figure 3 illustrates the architecture diagram depicting how blockchain, AI, and IoT technologies integrate with Sustainable Development Goals (SDGs). This illustration captures the flow between business operations, technology, and SDG targets.

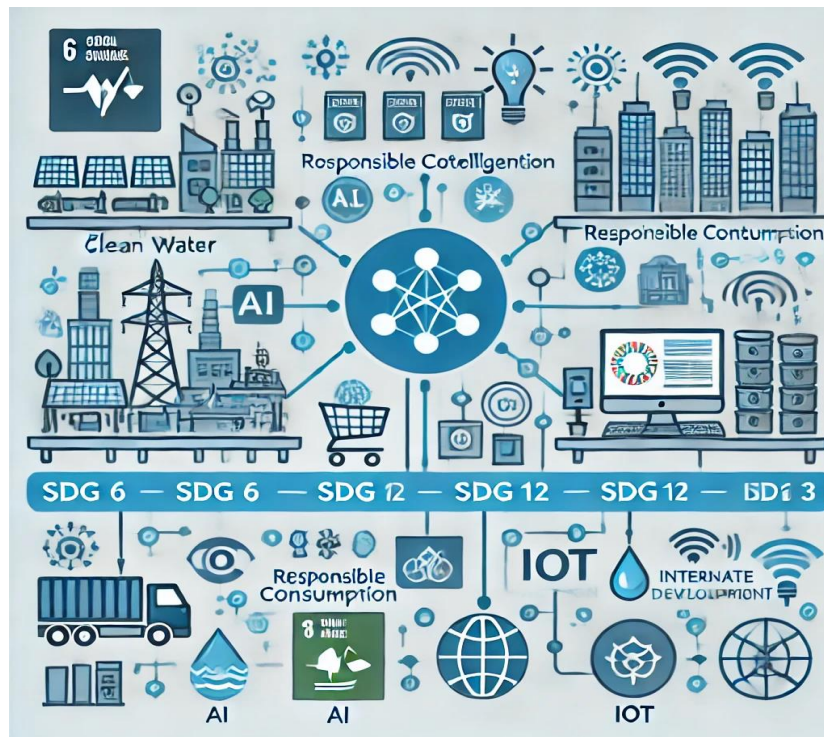


Fig 3. Architecture diagram of SDGs with technologies

By leveraging blockchain, AI, and IoT technologies, businesses can align their operations with the SDGs. These tools promote transparency, resource efficiency, and real-time monitoring, facilitating digital transformation and sustainability integration.

## Conclusion

Integrating the Sustainable Development Goals (SDGs) into corporate strategy is essential for tackling global challenges and fostering sustainable development. Using technologies like blockchain, artificial intelligence, and the Internet of Things, companies can make better use of resources, enhance transparency, and allow for real-time monitoring. By leveraging these technological tools, businesses can align their operations with the SDGs, creating a positive impact on society, the economy, and the environment. Using these innovative solutions can lead to improved operational efficiency and a stronger commitment

to sustainability. As a result, it will be well-placed to contribute meaningfully to the worldwide effort to reach the SDGs by 2030.

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# Evaluating the Influence of SDG-Aligned Branding on Gen Z Purchase Decisions: With Reference to Nestle

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## Abstract

*In a world where social and environmental issues are in the limelight, today's brands are racing to align themselves with the United Nations Sustainable Development Goals (SDGs) to connect with ethically conscious consumers and to also bring change in perspective to the existing consumer base. This research dives into how SDG-aligned branding affects the buying decisions of Generation Z, with the focus on Nestlé. The SDGs are a set of 17 goals aimed at solving big global problems—like hunger, inequality, and climate change. Nestlé has taken a standby supporting several of these goals, including Zero Hunger (SDG 2), Good Health and Well-being (SDG 3), Clean Water and Sanitation (SDG 6), Responsible Consumption and Production (SDG 12), and Climate Action (SDG 13). Generation Z, born into a world grappling with these challenges, is a unique group—they care deeply about social justice and the environment, and these values significantly shape how they shop. This study shows that brands need to do more than just tick boxes to win over this generation. They need to live and breathe their commitment to sustainability, making it a core part of who they are and what they do. For companies, this means a chance to build lasting loyalty, enhance their reputation, and make a real difference in the world by genuinely supporting the SDGs. This paper offers practical insights for any brand looking to connect with Generation Z and stand out in a crowded market.*

*Keywords: SDG-Aligned Branding, Generation Z, Purchase Decisions, Sustainability, Nestle.*

## Introduction

In a rapidly changing world, the United Nations' Sustainable Development Goals (SDGs) have emerged as a universal call to action, encompassing 17 global goals aimed at addressing critical challenges like poverty, inequality, climate change, and environmental

degradation by 2030. As these goals gain prominence, businesses worldwide are increasingly aligning their strategies with SDGs to resonate with socially conscious consumers, particularly Generation Z (Gen Z). Gen Z, born between 1997 and 2012, is the first generation to grow up with the internet and social media, making them highly informed, globally aware, and passionate about social and environmental issues. Their values significantly shape their purchasing behaviors, making them an important demographic for brands committed to sustainability.

Nestlé, a global leader in the food and beverage industry, has actively embraced several SDGs as part of its corporate strategy. With a diverse product line that includes dairy, confectionery, beverages, baby food, bottled water, and pet care, Nestlé has been a household name for over a century. The company's commitment to SDGs such as Zero Hunger (SDG 2), Good Health and Well-being (SDG 3), Clean Water and Sanitation (SDG 6), Responsible Consumption and Production (SDG 12), and Climate Action (SDG 13) reflects its efforts to create shared value for both society and its consumers. For Gen Z, who are known for their strong inclination towards ethical consumption and sustainability, Nestlé's alignment with SDGs can significantly influence their perception of the brand.

The connection between Gen Z and Nestlé is particularly compelling, as this generation actively seeks brands that not only provide quality products but also demonstrate genuine commitment to social and environmental causes. As consumers who prefer brands that are transparent, ethical, and aligned with their values, Gen Z is naturally drawn to companies like Nestlé that position themselves as advocates of sustainable development. However, their perception of Nestlé is not merely shaped by the company's SDG initiatives; it is also influenced by how authentic and impactful these efforts are perceived to be. Gen Z's growing demand for accountability and transparency challenges brands like Nestlé to demonstrate a true commitment to the causes they support, beyond just marketing.

This study seeks to explore the influence of SDG-aligned branding on Gen Z's purchasing decisions, with a particular focus on Nestlé. It aims to understand why Gen Z prefers Nestlé, how they perceive its SDG efforts, and what factors drive their loyalty or skepticism towards the brand.

### **Statement of the problem**

With the increasing emphasis on sustainability and ethical consumption, many brands, including Nestlé, have integrated the United Nations' Sustainable Development Goals (SDGs)

into their core strategies. However, the effectiveness of these efforts in influencing the purchasing decisions of Generation Z, a demographic known for its commitment to social and environmental causes, remains largely uncertain. While Gen Z consumers express a preference for brands that demonstrate genuine responsibility towards global challenges, there is limited understanding of how Nestlé's SDG initiatives shape their buying behavior.

This gap poses a challenge for brands like Nestlé, as failure to connect authentically with Gen Z could result in missed opportunities for brand engagement, loyalty, and market growth. Therefore, it is crucial to explore how Gen Z perceives SDG-aligned branding efforts and the extent to which these initiatives influence their consumer choices. Understanding this relationship is vital for brands aiming to build meaningful connections with this socially conscious generation and align their strategies accordingly.

### Objective of the Study

This study aims to achieve the following objectives:

- 1) To investigate the level of awareness among Gen Z consumers regarding the SDG initiatives undertaken by Nestlé.
- 2) To explore how Nestlé's SDG initiatives affect consumer perceptions of brand credibility and trustworthiness.
- 3) To examine which channels are most effective for Nestlé in conveying its SDG commitments to Gen Z consumers.

### Review of Related Literature

**Ha and Perks (2005)** examined the effect of brand experience on online brand trust, finding that positive experiences, like user-friendly websites, boost brand familiarity and satisfaction, which in turn build trust. Satisfaction, both cognitive and emotional, plays a key role in fostering trust and loyalty.

**Berezan et al. (2016)** studied how communication channels influence customer loyalty in hotel programs. They found that company-controlled channels, such as websites, were more professional and effective at delivering clear, customized information than social media, especially for older customers.

**Šramková and Sirotiaková (2021)** explored the issue of dual quality in the EU, noting that 86% of Generation Z consumers are aware of it and over 70% have changed their



purchasing behavior. Gen Z's demand for transparency and ethical practices is driven by digital media.

**Sarin and Srivastava (2024)** analyzed how Sustainable Development Goals (SDGs) influence Cause-Related Marketing (CRM). Their study showed that aligning marketing with SDGs enhances brand loyalty and purchase intentions, helping both companies and global sustainability efforts.

## Research Methodology

### a) Research Design:

- Type: Descriptive research design.
- Approach: Mixed-methods, combining quantitative and qualitative analysis to understand the impact of Nestlé's SDG-aligned branding on Gen Z's purchasing behavior.

### b) Data Collection:

- Primary Data:
  - Survey: Conducted an online survey with 100 Gen Z consumers aged 18-26 using Google Forms.
  - Survey Instrument: Included closed-ended questions for quantitative data and open-ended questions for qualitative insights.
- Secondary Data:
  - Sources: Reviewed literature, market research reports, and information from Nestlé's official website to understand Nestlé's SDG initiatives and consumer behavior trends.

### c) Sampling:

- Method: Purposive sampling of 100 participants familiar with Nestlé products and sustainability efforts to provide relevant insights.

### d) Data Analysis:

- Quantitative Analysis: Utilized descriptive statistics to summarize survey responses and identify patterns.
- Qualitative Analysis: Conducted thematic analysis of open-ended survey responses to extract key themes and insights.

## Data Analysis and Interpretation

### a) Data Collection:

- Quantitative: Surveyed 100 Gen Z consumers via Google Forms, using closed-ended questions to measure awareness, perceptions, and influence of Nestlé’s SDG initiatives.
- Qualitative: Open-ended questions to gather detailed views on Nestlé’s sustainability efforts.

### b) Analysis Techniques:

- Descriptive Statistics: Summarized awareness levels, purchasing behavior, and perceptions.
- Comparative Analysis: Compared responses by age, education, and gender.
- Thematic Analysis: Identified common themes from qualitative data.

### c) Key Findings:

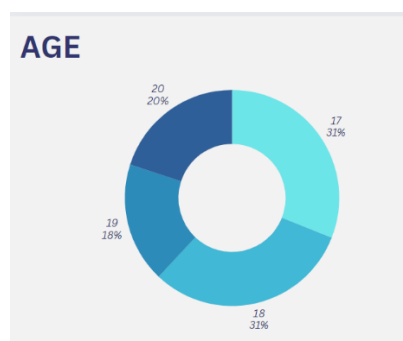
- Awareness: Limited awareness of Nestlé’s specific sustainability goals.
- Preferences: High interest in sustainable packaging and plant-based products.
- Transparency: Important for building trust, with a need for better communication through social media and packaging.

### d) Interpretation:

- Sustainability Impact: Nestlé needs to improve visibility and communication of its SDG efforts to influence Gen Z effectively.
- Consumer Expectations: Emphasize transparency, ethical practices, and tangible sustainability in marketing.
- Recommendations: Increase awareness of sustainability goals, enhance product offerings, and improve stakeholder engagement.

## Findings of the Study

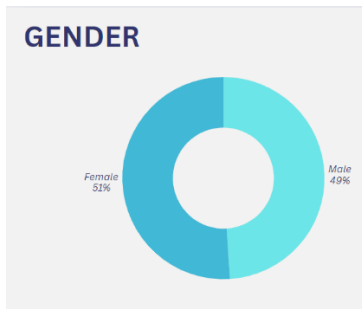
**Chart No. 1 –Age of Gen Z**



The age distribution shows that 31% are 17 years old, another 31% are 18, totaling 62%. Meanwhile, 18% are 19, and 20% are 20. Most respondents fall within the 17-18 age range

Source: Primary Data

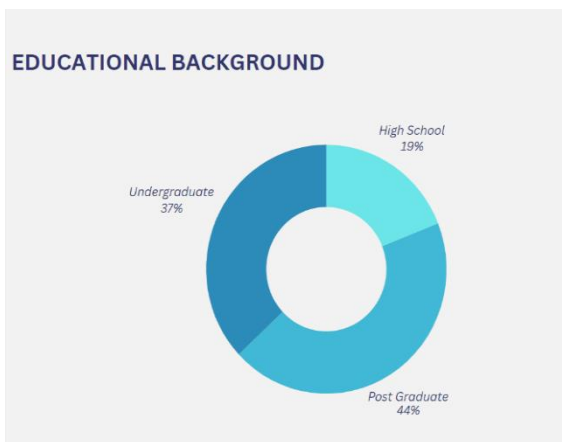
**Chart No. 2 –Gender of Gen Z**



The gender distribution reveals 51% female and 49% male participants, indicating an almost equal split, with a slight female majority.

Source: Primary Data

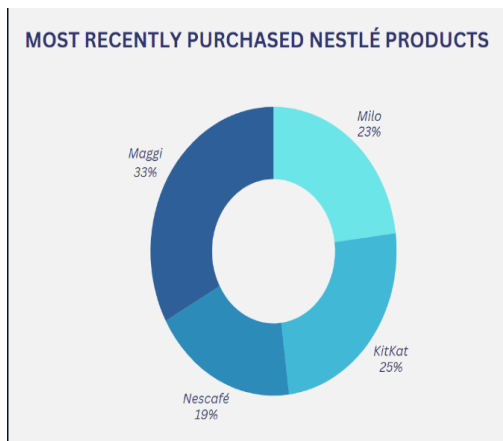
**Chart No. 3– Educational Background of Gen Z**



The educational background shows that 44% are postgraduates, 37% are undergraduates, and 19% are high school graduates, indicating a majority with higher education, particularly in postgraduate studies.

Source: Primary Data

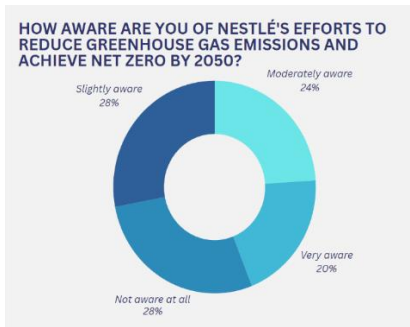
**Chart No. 4– Most recently purchased Nestlé products**



The most recently purchased Nestlé products reveal that 33% bought Maggi, 25% chose KitKat, 23% opted for Milo, and 19% picked Nescafé. Maggi leads as the most popular choice, with KitKat and Milo closely following.

Source: Primary Data

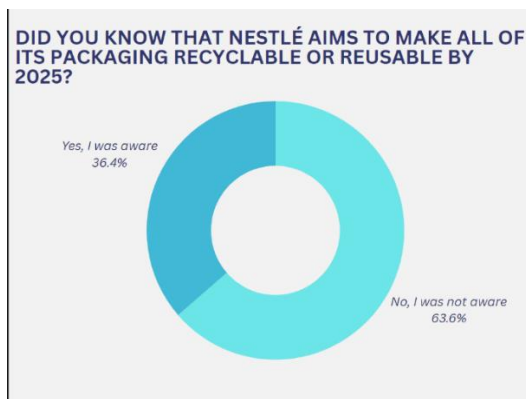
### Chart No. 5 – Awareness of Nestlé’s Greenhouse Gas Reduction Goals



Awareness of Nestlé’s greenhouse gas reduction goals is relatively low, with 28% slightly aware and another 28% not aware at all. Meanwhile, 24% are moderately aware, and only 20% are very aware. This indicates that more than half of the participants have limited awareness of these goals.

Source: Primary Data

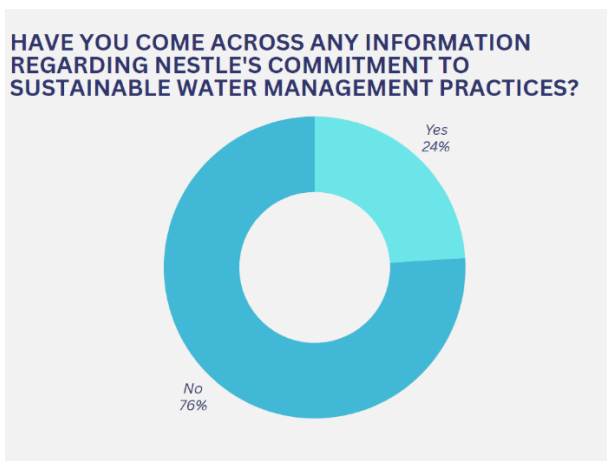
### Chart No. 6 – Awareness of Nestlé’s 2025 Packaging Goal



A significant majority, 63.6%, are unaware of Nestlé's 2025 packaging goal, which focuses on recyclable or reusable packaging, while only 36.4% are familiar with it. This highlights a gap in awareness regarding the company's sustainability efforts.

Source: Primary Data

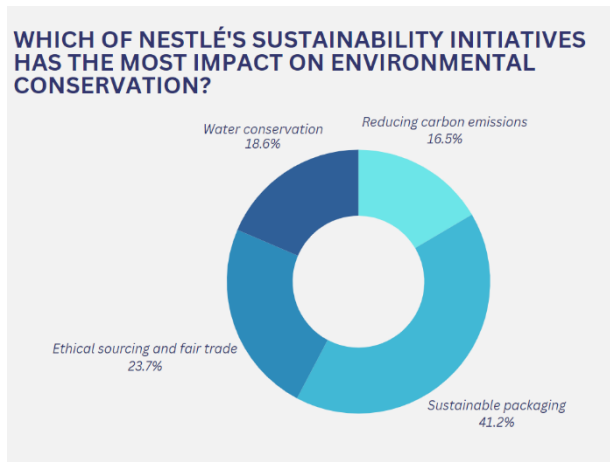
### Chart No. 7 – Knowledge of Nestlé’s Water Management Efforts



A large portion, 76%, are unaware of Nestlé's water management efforts, with only 24% having knowledge of these initiatives, indicating limited awareness of the company's sustainability practices in this area.

Source: Primary Data

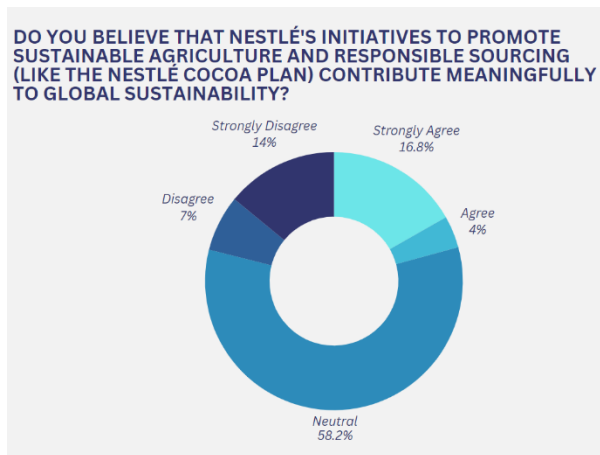
**Chart No. 8 - Most Impactful Sustainability Initiative**



Sustainable packaging is viewed as the most impactful sustainability initiative, with 41.2% of respondents supporting it, followed by ethical sourcing at 23.7%, water conservation at 18.6%, and carbon emissions reduction at 16.5%.

Source: Primary Data

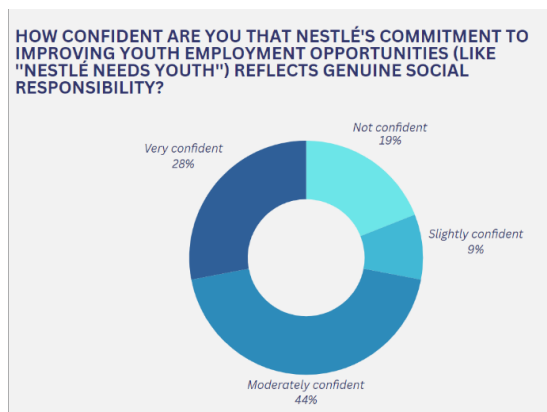
**Chart No. 9 - Belief in Nestlé's SDG Contributions**



Most respondents are neutral about Nestlé's SDG contributions, with 58.2% indicating neutrality. Among the rest, 16.8% strongly agree, 4% agree, 7% disagree, and 14% strongly disagree.

Source: Primary Data

**Chart No. 10 - Confidence in Nestlé's Youth Employment Initiatives**



Many respondents are confident in Nestlé's youth employment initiatives, with 28% very confident and 44% moderately confident. However, 9% are slightly confident, and 19% are not confident.

Source: Primary Data

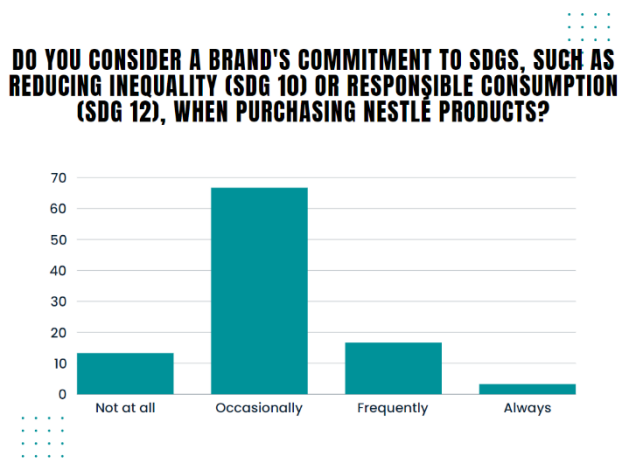
**Chart No. 11 - Consideration of SDGs in Brand Choices**



Most respondents occasionally consider SDGs in their brand choices, with approximately 40% selecting "sometimes." Around 20% factor SDGs into their decisions often, while ~30% do so rarely, and less than 10% consistently.

Source: Primary Data

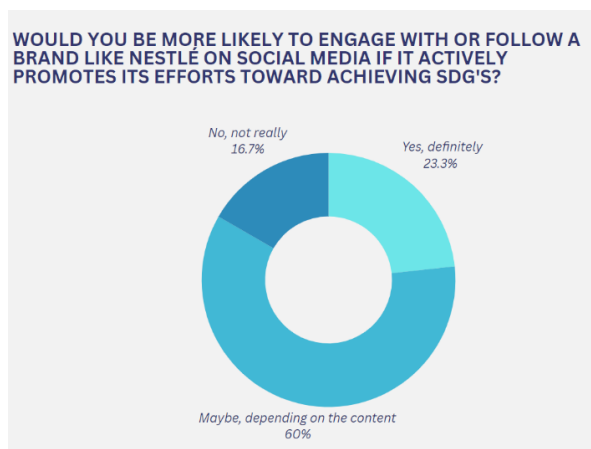
**Chart No. 12 - SDG Commitment in Nestlé Purchases**



Many respondents (around 60%) occasionally consider SDG commitments in their Nestlé purchases. About 15% frequently factor them in, less than 10% always do, and around 10% do not consider them at all.

Source: Primary Data

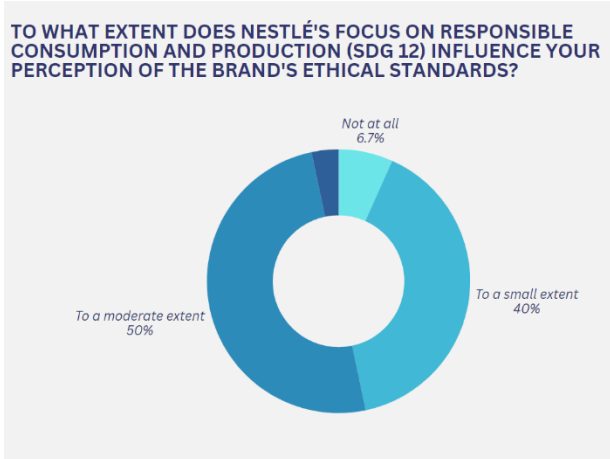
**Chart No. 13 – Likelihood of Engaging with Nestlé on social media for SDGs**



Most respondents (60%) are open to engaging with Nestlé on social media about SDG initiatives, depending on the content. A smaller portion (23.3%) are willing, while 16.7% are not interested.

Source: Primary Data

### Chart No. 14 - Influence of Responsible Consumption (SDG 12) on Brand Perception



Most respondents (50%) feel that responsible consumption (SDG 12) moderately influences their perception of brands. A smaller portion (40%) sees a slight impact, while very few (3.3%) view it as highly influential.

Source: Primary Data

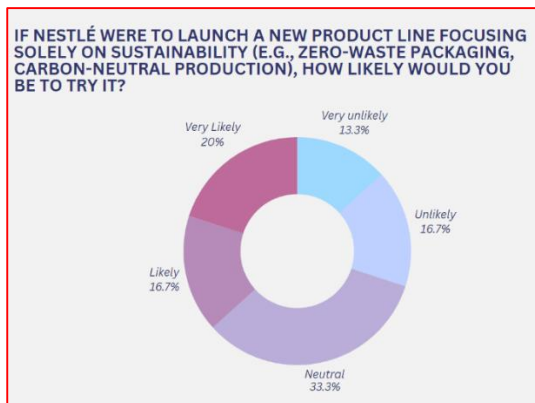
### Chart No. 15 - Desired SDG-Related Initiatives for Nestlé



The majority of respondents (66.7%) desire more plant-based options, followed by a strong preference for increased transparency (56.7%). Reducing plastic use (43.3%) and community support initiatives (33.3%) are also important.

Source: Primary Data

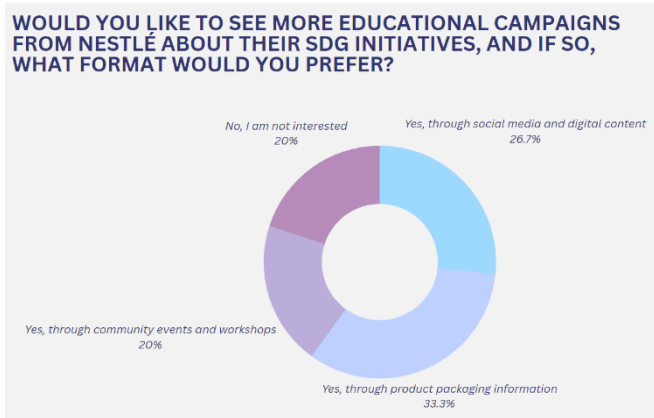
### Chart No. 16 - Likelihood of Trying a Sustainable Nestlé Product Line



Opinions are divided, with 33.3% remaining neutral, while 36.7% express some likelihood of trying a sustainable Nestlé product line, and 30% are unlikely or very unlikely to do so.

Source: Primary Data

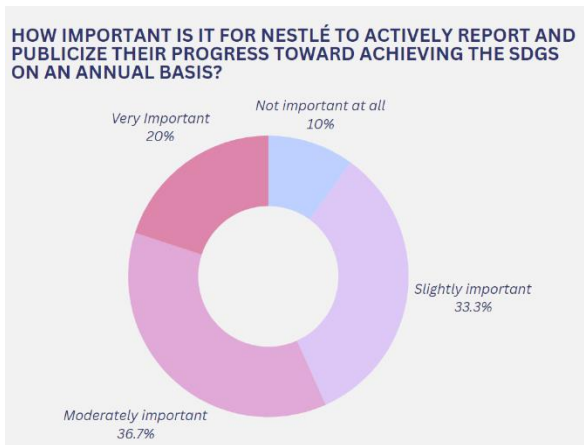
**Chart No. 17 - Preferred Format for Educational Campaigns**



Packaging (33.3%) and social media (26.7%) are the preferred formats for educational campaigns, with 20% favoring community events and another 20% not interested.

Source: Primary Data

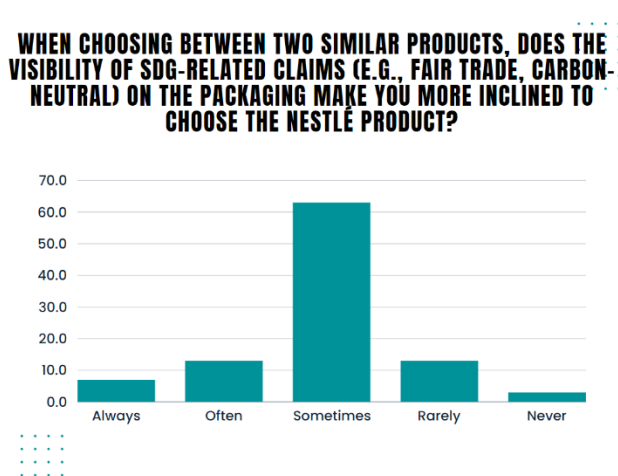
**Chart No. 18 - Importance of Annual SDG Reporting**



The majority view annual SDG reporting as moderately (36.7%) to very important (20%), with 33.3% finding it slightly important and 10% not considering it important.

Source: Primary Data

**Chart No. 19 - Influence of SDG Claims on Purchasing Decisions**

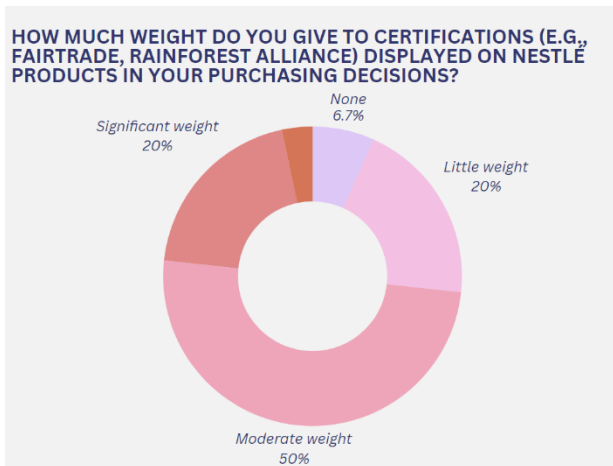


Most participants (63.3%) are sometimes influenced by SDG claims when making purchasing decisions, while fewer are often (13.3%) or rarely (13.3%) influenced. A small percentage are always (6.7%) or never (3.3%) influenced.

Source: Primary Data



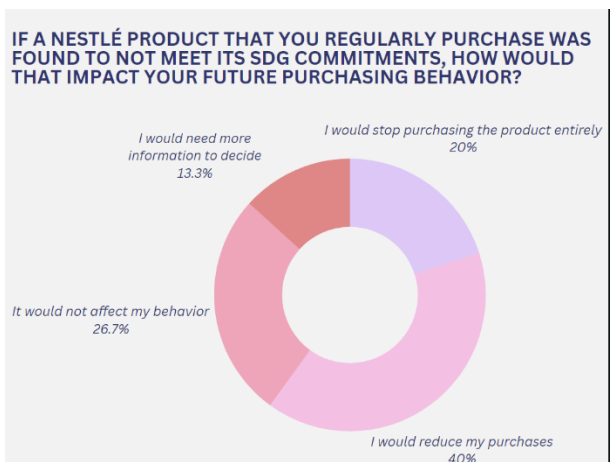
**Chart No. 20 - Impact of Certifications on Purchasing Decisions**



Most participants (50%) consider certifications to have moderate weight in their purchasing decisions. Smaller percentages view them as having significant (20%), little (20%), or no (6.7%) impact, with only 3.3% assigning them a lot of weight.

Source: Primary Data

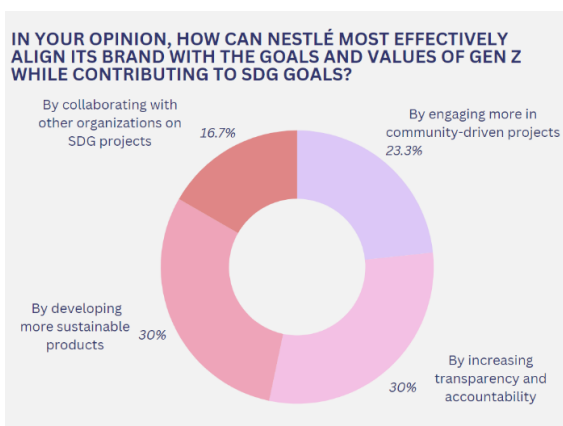
**Chart No. 21 - Impact of SDG Commitment on Purchasing Behavior**



Many participants (40%) would reduce their purchases if SDG commitments are not met, and 20% would stop purchasing altogether. Additionally, 26.7% see no effect on their buying behavior, while 13.3% need more information.

Source: Primary Data

**Chart No. 22 - Aligning Nestlé with Gen Z and SDGs**



Participants suggest Nestlé should focus on sustainable products (30%) and transparency (30%), with additional support for community projects (23.3%) and collaborations (16.7%).

Source: Primary Data

**Chart 23: What additional steps do you believe Nestlé should take to strengthen its reputation as a leader in sustainability and SDG alignment? (Type your opinion)**

- **Transparency and Communication:** Increase transparency in the supply chain, enhance social media presence, and provide updates on progress and volunteering projects to spread awareness.
- **Sustainability:** Focus on environmental sustainability by promoting plant-based ingredients, reducing the use of preservatives and additives, and developing eco-friendly products.
- **Health:** Prioritize health by using healthier products and setting science-based targets for carbon reduction and biodiversity protection.
- **Supply Chain and Practices:** Improve supply chain sustainability by investing in sustainable agriculture, fair labor practices, and ethical sourcing.
- **Reputation and Stakeholder Engagement:** Strengthen Nestlé's reputation in sustainability through detailed, independently verified reports, and engage more with stakeholders and partners for sustainable development.
- **Product Offerings:** Expand product lines to include plant-based options, eco-friendly packaging, and fair-trade certified products.

Source: Primary Data

### Summary

Nestlé should boost transparency on sustainability, focus on plant-based and eco-friendly products, and enhance supply chain practices. Key steps include setting ambitious environmental targets, providing detailed reports, engaging stakeholders, and expanding sustainable product offerings.

### Suggestions

To better align with Gen Z's sustainability expectations, Nestlé could adopt the following strategies:

1. **Boost SDG Awareness:** Strengthen communication on sustainability efforts, especially via social media and packaging, as many Gen Z consumers lack awareness of key initiatives like water management and packaging goals.

2. **Prioritize Sustainable Packaging:** With sustainable packaging seen as most impactful, Nestlé should accelerate innovation here and showcase progress on the 2025 recyclable packaging goal to build brand loyalty.
3. **Expand Plant-Based Products:** Increasing plant-based offerings can appeal to Gen Z's environmental concerns and drive stronger engagement.
4. **Enhance Transparency:** Regular, clear SDG reporting is vital to foster trust with Gen Z, who values honesty about progress and challenges.
5. **Use Preferred Channels:** Focus educational efforts on packaging and social media, which are key channels for conveying sustainability messages to Gen Z.
6. **Leverage Certifications:** Highlighting certifications and partnerships with trusted organizations can enhance credibility and trust.
7. **Promote Ethical Sourcing:** Ethical sourcing is a priority for Gen Z, so Nestlé should emphasize its efforts in fair trade and worker welfare.

By focusing on these areas, Nestlé can better connect with Gen Z values and strengthen brand loyalty.

## Conclusion

This research has shed light on how Nestlé's commitment to sustainability, through its alignment with the SDGs, influences the purchasing decisions of Gen Z. The results highlight that while Gen Z cares deeply about sustainability, there's still limited awareness of Nestlé's specific efforts, such as reducing greenhouse gas emissions or setting goals for recyclable packaging. However, initiatives like sustainable packaging and plant-based products clearly resonate with this generation, pointing to an opportunity for Nestlé to strengthen its connection with them.

Gen Z craves transparency and ethical practices from the brands they support. They want to see companies genuinely committed to sustainability, not just through promises, but through visible actions. Nestlé's success in reaching Gen Z largely depends on how effectively it communicates its SDG initiatives, especially through trusted channels like packaging and social media. While some of Nestlé's efforts are well-received, many participants indicated they need clearer information and more concrete actions from the company, particularly around ethical sourcing and environmental impact.

To deepen its relationship with Gen Z, Nestlé must not only continue innovating but also engage more openly and honestly about its progress. This generation values brands that

align with their beliefs, and Nestlé could build lasting trust by demonstrating its commitment to sustainability in a tangible and authentic way. By doing so, Nestlé can not only boost its brand loyalty but also contribute meaningfully to global sustainability goals, making a real difference in the world while appealing to a socially conscious generation.

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# Artificial Intelligence & Digital Transformation Strategies for Growth and Sustainability in Financial Markets and Risk Management

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## Abstract

*Artificial Intelligence (AI) is changing finance by improving how financial data is processed and analyzed. The main aim of this study is to analyze the risks and challenges in integrating AI in finance management and examine the techniques of AI in finance risk management. It customizes monetary administrations to fit individual requirements, further developing consumer loyalty. Notwithstanding, there are difficulties like guaranteeing information honesty, tending to moral worries, and keeping up areas of strength for administration. These issues should be the focus of future research, as should new applications of AI in finance. The study concludes that AI provides powerful tools for improving financial operations and its success is contingent on how effectively these tools are integrated and monitored*

*Keywords: Data processing, AI, pattern recognition, research, finance, trading analysis, fraud detection, risk management*

## Introduction

Artificial Intelligence (AI) is transforming the financial sector by introducing advanced methods for processing financial data, identifying patterns, and automating complex tasks. Its integration into finance has significantly enhanced areas such as trading analysis, fraud detection, credit scoring, and risk management. AI technologies, including machine learning and predictive analytics, have made financial services more efficient, accurate, and personalized, improving customer satisfaction and operational effectiveness.

However, the adoption of AI also brings challenges. Issues such as ensuring data integrity, addressing ethical concerns, and establishing robust governance frameworks are critical for its effective implementation. Additionally, the reliance on AI raises questions about transparency, accountability, and the potential for algorithmic biases, which can impact

trust and fairness in financial operations. As the financial industry continues to evolve with AI, balancing innovation with ethical considerations and strong governance is essential for ensuring sustainable growth and stability in the financial markets.

### Statement of the Problem

Artificial Intelligence (AI) is changing the financial sector by improving processes like data analysis, fraud detection, and risk management. However, its adoption comes with challenges such as ensuring data accuracy, addressing ethical concerns, and maintaining transparency.

Many financial institutions struggle with integrating AI effectively, as issues like algorithm bias, lack of proper monitoring, and weak governance can lead to risks. Without addressing these challenges, the full potential of AI in finance cannot be realized.

This study focuses on understanding the risks and challenges of using AI in financial management and exploring ways to manage these issues for sustainable growth.

### Need for the Study

- AI is revolutionizing financial management by improving efficiency, risk management, and personalization.
- Challenges like data security, ethical concerns, and governance need to be addressed for effective implementation.
- Identifying solutions to these challenges is crucial for sustainable growth in financial markets.
- This study examines AI's potential while focusing on mitigating its associated risks.

### Review of Literature

**Smith & Gupta (2020)** focused on the application of AI in fraud detection and risk management within financial institutions. The authors highlighted that AI-powered systems could analyze vast amounts of transactional data in real-time, enabling early detection of fraudulent activities and minimizing losses. However, the study also pointed out the lack of transparency in AI algorithms, which can lead to algorithmic biases. They emphasized the need for ethical frameworks and regulatory measures to ensure AI tools are used responsibly and fairly in finance.

**Brown et al. (2021)** examined the impact of AI-driven tools on operational efficiency and customer satisfaction in financial services. It was found that AI significantly improves the personalization of financial products, such as tailored investment plans and customized credit options, enhancing customer satisfaction. However, the study also raised concerns about data privacy, as the collection and processing of sensitive customer information by AI systems pose significant risks if not managed securely.

**Zhang & Li (2019)** investigated the use of machine learning techniques in trading analysis. It demonstrated that AI models could effectively analyze historical market data and predict trends with high accuracy, providing traders with valuable insights for decision-making. However, the authors highlighted integration challenges, as many financial institutions face difficulties in combining AI models with their legacy systems. The study suggested that overcoming these challenges would unlock AI's full potential in trading.

**Johnson (2022)** explored the growing adoption of AI in the financial sector and its associated risks. While AI tools were found to enhance decision-making and improve risk assessment processes, the study raised concerns about the lack of governance and monitoring mechanisms. It was observed that poorly regulated AI systems could compromise data integrity and reduce trust in financial operations. The author called for robust governance frameworks to ensure the responsible use of AI in finance.

**Kumar & Sharma (2023)** focused on AI applications in credit scoring and lending decisions. The authors highlighted that AI reduces human errors by providing accurate assessments of borrowers' creditworthiness, leading to faster loan approvals. However, the study also revealed ethical concerns, such as the potential for AI algorithms to unintentionally discriminate against certain groups. The authors stressed the importance of regulatory oversight and algorithm audits to ensure fairness and accountability in AI-driven lending practices.

### Objectives of the study

- To analyze the effectiveness of AI-driven tools in enhancing fraud detection and minimizing financial risks.
- To examine the ethical and regulatory challenges associated with the use of AI in financial institutions, particularly in areas like data privacy and algorithmic biases.

## **Effective in Enhancing Fraud Detection and Minimizing Financial Risks**

### **1. Real-Time Fraud Detection**

AI tools excel at detecting fraud in real-time by analyzing transactional data and identifying patterns that deviate from normal behavior. Machine learning algorithms continuously process large volumes of transaction data, flagging unusual activities, such as unauthorized transactions, account takeovers, or identity theft attempts. This rapid detection allows financial institutions to respond swiftly and prevent potential losses

### **2. Predictive Risk Management**

AI can predict potential financial risks by analyzing historical data, market trends, and behavioral patterns. In sectors like trading, AI tools assess the likelihood of market volatility, identify high-risk investment strategies, and forecast economic downturns. This predictive capability helps investors and financial institutions make more informed decisions, minimizing exposure to financial risks

### **3. Reduction of Human Error**

AI systems significantly reduce human error in financial decision-making. In areas like credit scoring and loan approval, AI models assess risk factors using large, diverse datasets, providing more accurate evaluations compared to traditional human assessment methods. By minimizing biases and errors that might occur during manual evaluations, AI helps ensure fairer and more reliable financial decisions

### **4. Anomaly Detection and Pattern Recognition**

AI-driven tools are particularly skilled in identifying complex anomalies and detecting fraud patterns that may be overlooked by traditional systems. Through advanced pattern recognition and deep learning, AI can learn and adapt to new types of fraud, improving its ability to detect both known and emerging fraudulent activities. This makes AI particularly effective at identifying sophisticated fraud schemes in real-time.

### **5. Enhanced Security**

AI enhances the security of financial transactions by continuously monitoring for potential cybersecurity threats, such as phishing attacks, data breaches, or fraudulent logins. By analyzing large sets of data and recognizing signs of malicious behavior, AI systems can identify and prevent cyber threats, safeguarding sensitive financial information



## 6. Improved Customer Verification

AI tools enhance customer verification processes, reducing the risk of identity fraud. Facial recognition, biometric authentication, and AI-powered identity verification systems ensure that customers' identities are accurately validated before completing financial transactions. These technologies offer an added layer of security, minimizing the likelihood of fraudulent activities linked to identity theft

## 7. Continuous Learning and Adaptation

AI systems continuously improve as they process more data. By learning from new data points and adapting their algorithms, AI tools can stay ahead of evolving fraudulent techniques and market changes. This ability to learn and adjust allows AI to remain effective in the long term, continually refining its fraud detection capabilities and financial risk management strategies

## Ethical and Regulatory Challenges Associated with the use of AI in Financial Institutions

### 1. Data Privacy

AI systems require extensive personal and financial data to function effectively, including transaction histories, credit scores, and personal information. However, this raises significant privacy concerns, particularly regarding unauthorized access and misuse of sensitive data. Financial institutions must ensure compliance with data protection laws like the GDPR (General Data Protection Regulation) to protect consumer privacy. The challenge is to maintain a balance between using data to improve AI-driven services and ensuring the data remains secure and private. Financial institutions must also obtain clear consent from customers about how their data is being used. Without these protections, there is a risk of data breaches, leading to financial and reputational losses

### 2. Algorithmic Bias

AI systems rely heavily on data to make decisions, and if the data used to train these systems is biased, the AI can inherit and perpetuate these biases. For instance, if historical data reflects past discriminatory practices, such as gender or racial bias in lending, AI algorithms can inadvertently reinforce these biases when making decisions like credit scoring or loan approvals. This can result in discriminatory outcomes, such as certain groups being

unfairly denied access to financial products. Addressing this bias involves ensuring that the training data is representative and free from systemic inequalities. Moreover, AI systems must be regularly audited to ensure fairness and transparency in their decision-making processes

### **3. Transparency and Accountability**

AI's decision-making processes are often described as "black boxes," meaning it's challenging to understand how the system arrives at certain conclusions. This lack of transparency is problematic in financial settings, where decisions can significantly impact individuals' financial futures. If an AI model denies a loan or suggests an investment, the customer may not understand why the decision was made, leading to a lack of trust. Moreover, it becomes difficult to hold institutions accountable for AI-driven decisions. There must be clear mechanisms in place to explain how decisions are made and provide avenues for recourse in case of errors or unfair outcomes. Financial institutions must adopt explainable AI models that allow both customers and regulators to understand the reasoning behind decisions

### **4. Ethical Decision-Making**

While AI can process data and make decisions much faster than humans, it lacks the emotional intelligence and nuanced judgment that might be necessary for certain financial decisions. For example, loan approval might be influenced by a borrower's financial history, but human judgment could be necessary to assess extenuating circumstances, such as health issues or temporary unemployment. AI systems may not be capable of considering these factors, potentially leading to outcomes that are technically correct but ethically questionable. Financial institutions need to find ways to ensure that AI decisions are made ethically, even if the system is automating routine processes. A balance between automation and human oversight is critical to maintaining ethical standards

### **5. Security Risks**

AI systems, particularly those handling sensitive customer data, are attractive targets for cybercriminals. If AI-driven systems are not sufficiently secured, they could be vulnerable to hacking, leading to data breaches and financial fraud. Additionally, AI systems can also be used maliciously to exploit vulnerabilities in financial markets or payment systems. Financial institutions must implement robust cybersecurity measures, such as encryption, multi-factor

authentication, and continuous monitoring, to ensure that AI systems are protected from cyber threats. Given the increasing sophistication of cyberattacks, securing AI tools is an ongoing challenge.

## 6. Regulatory Gaps

Although AI has been widely adopted in financial services, the regulatory frameworks governing its use are still in development. There is no universal set of regulations that guide the ethical and responsible use of AI in finance, meaning that institutions must navigate a patchwork of national and international laws. In some regions, AI regulations are lagging behind the technology's rapid growth, leaving institutions to self-regulate. However, without comprehensive guidelines, there's a risk of inconsistencies in how AI is used, which could lead to unfair practices or unethical outcomes. Regulatory bodies must work with financial institutions to create clear standards for AI adoption and ensure that they are adequately enforced. Clearer regulations will also help protect consumers from potential abuses of AI technology

## Conclusion

In conclusion, Artificial Intelligence (AI) holds immense potential to revolutionize the financial sector, offering improved operational efficiency, enhanced fraud detection, and better risk management. However, as financial institutions increasingly adopt AI tools, they must carefully navigate several ethical and regulatory challenges. Issues like data privacy, algorithmic bias, transparency, and the security of AI systems must be addressed to ensure the responsible use of AI technologies. Additionally, the evolving regulatory landscape requires clear and robust frameworks to guide AI implementation and prevent misuse. The success of AI in finance will depend on how well these challenges are managed, ensuring AI's integration enhances both financial operations and consumer trust in the industry. By striking a balance between innovation and regulation, AI can drive sustainable growth and contribute to a more efficient, equitable financial system.

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