# International conference on

# TECHNOLOGY AND SUSTAINABLE INNOVATION

# IC-TSI 2024

Volume-1

29th Febuary 2024

Organized by

Department of commerce CA

Sankara College of Science and Commerce

(Autonomous)

Saravanampatti, Coimbatore – 641035

In Collaboration with

The Institute of Charatered Accountants of India

(Setup By an Act of Parliament)

The Coimbatore Branch (SIRC & SICASA)

# International conference on

# TECHNOLOGY AND SUSTAINABLE INNOVATION

Department of commerce CA

SANKARA COLLEGE OF SCIENCE AND COMMERCE

(Autonomous)

Saravampatti, Coimbatore – 641035

Tamilnadu, India.

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**ISBN-978-93-340-1483-9**

**Message from Managing Trustee & Secretary**

My hearty congratulations to the Department of Commerce CA for organizing the **International conference on " TECHNOLOGY AND SUSTAINABLE INNOVATION".**I Strongly hope the conference will serve as a knowledge-sharing platform among academicians, research scholars, and student.

Wishing IC- TSI 2024 Conference for Success!

Best Wishes,

**Shri.T.P.Ramachandran**

**Managing trustee & Secretary**

# Message from joint secretary

It is a great honour to be part of this **International Conference On " TECHNOLOGY AND SUSTAINABLE INNOVATION".** Congratulations to the team for all their efforts. I'm hoping that the conference will promote knowledge exchange between academic and practitioners.

Wishing conference, a grand success!

Best Wishes

**Smt.Sandhya Ramachandran**

**Joint secretary**

**Message from Deputy Joint Secretary**

My heartfelt congratulations to the department of commerce CA for conducing the **International Conference on "TECHNOLOGY AND SUSTAINABLE INNOVATION".** In today's rapidly evolving landscape, the intersection of finance and technology has unlocked unparalleled potential for reshaping economic ecosystems. Hope this conference aims to unravel the multifaceted aspects of technology and sustainable innovation and will provide a comprehensive understanding of the challenges faced and the opportunities presented in this domain.

Congratulations and best wishes to the participants.

Happy researching!!!

Best Wishes

**Ms. Nithya Ramachandran**

**Deputy Joint Secretary**

**Message from Principal**

In am very much delighted to know the Department of Commerce CA is Organizing an **International Conference On "TECHNOLOGY AND SUSTAINABLE INNOVATION".** The digital era has brought forth an array of technological innovations that are transforming the way we handle financial transactions, access banking services, and mange our resources. This transformation is both a challenge and an opportunity, as it has the potential to bridge gaps in financial inclusion while also presenting new obstacles to overcome. I hope thet this conference will raise awareness among academics, research experts, and student about the new financial technologies and innovation business approaches in digital era.

I congratulate the Department of Commerce CA for organizing this conference and my best wishes for the success of the event.

Best Wishes

**Dr. V. Radhika**

**Principal**

**Message from Vice Principal**

A warm and happy greeting to all. I am immensely happy that the Department of Commerce CA of our college are organizing an **International conference on "TECHNOLOGY AND SUSTAINABLE INNOVATION"** on 29th February 2024and are going to publish a collection of various papers in the conference edited book chapter.

This conference brings together esteemed researchers, practitioners, policymakers, and thought leaders who have dedicated their expertise to understanding the complex interplay between financial services and the digital realm. With participants hailing from diverse backgrounds, industries, and regions, we have a unique opportunity to exchange ideas and experiences that span across borders.

I am confident that this conference will provide an opportunity for academicians, research scholars, and students to exchange their ideas and research experience. I appreciate the conference organizers for arranging this international conference, as well as the attendees and presenters from various institutions.

Happy Researching!

Best Wishes

**Prof.S.bernard Edward**

**Vice Principal**

## Message by the Editor

Dear Esteemed Participants,

It is with great pleasure and pride that I extend my warmest greetings to each and every one of you gathered here today for the One-Day International Conference on "Technology and Sustainable Innovation" hosted by Sankara College of Science & Commerce.

As the editor of the conference proceedings, I am deeply honored to be a part of this transformative event that brings together scholars, researchers, professionals, and practitioners from diverse fields to explore the intersection of technology and sustainability. The collaboration between the Department of Commerce with Computer Applications and The Coimbatore Branch of SIRC of The Institute of Chartered Accountants of India underscores our shared commitment to fostering innovation and driving positive change in our society.

The conference serves as a platform for the exchange of ideas, the dissemination of cutting-edge research, and the cultivation of collaborative partnerships that have the potential to shape the future of our world. Through insightful discussions, thought-provoking presentations, and interactive sessions, we aim to harness the power of technology toaddress the challenges of sustainability and pave the way for a more equitable and resilient future.

As we embark on this enriching journey together, I encourage you to actively engage with the proceedings, share your expertise, and contribute your perspectives towards advancing our collective understanding of technology and sustainable innovation. Your insights and contributions will undoubtedly enrich the discourse and inspire meaningful action towards building a more sustainable and inclusive world for generations to come.

I would like to express my heartfelt gratitude to all the authors, reviewers, organizers, sponsors, and participants who have dedicated their time, expertise, and resources to make this conference a resounding success. Your unwavering support and commitment are truly commendable and have been instrumental in shaping the conference proceedings.

In closing, I am confident that the insights gained and connections forged during this conference will serve as catalysts for positive change and inspire us to redouble our efforts towards harnessing the power of technology for the greater good. Let us seize this opportunity to collaborate, innovate, and chart a course towards a more sustainable and prosperous future.

Thank you once again for your invaluable contributions, and I wish you all a productive and inspiring conference experience.

Warm
regards,Dr.K.Prince
Paul Antony
Chief Editor,

# INDEX

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# TO STUDY THE IMPACT OF DIGITAL MARKETING ON INTERNET USERS' BRAND RECOGNITION

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***Abstract*— Information technology growth has changed how marketing is carried out in the industry, resulting in an assortment of platforms and strategies for enhancing customer brand recognition. Because technology is advancing so quickly, digital marketing techniques, including advertising, social media marketing, content marketing, email marketing, and website marketing, are widely recognized and utilized in many different sectors. The relationship between brand recognition and different digital marketing techniques is thoroughly studied in this study. Given this, the research methodology for this study is descriptive, and the main data utilized were collected from 196 digital media users, who are purchase mobile phones in Coimbatore city and analyzed through the use of the AMOS software. The theory was tested, and the results showed a strong positive relationship between online advertising and the recognition of brands. Data from different age groups, geographical regions, and other digital marketing tactics that were not further explored in this study can be used to broaden the study**

## I. INTRODUCTION

Digital marketing is the most recent type of marketing to emerge as information technology evolves. The rapid advancement of technology has made it possible for firms to leverage many digital marketing platforms to promote their products and services both domestically and globally (Makrides et al., 2020). Emerging breakthroughs and technological advancements are elements that promote the growth of digital marketing. According to Kannan and Li (2017), digital marketing is an adaptive process driven by technology that attempts to facilitate business-customer and partner collaboration so that the resulting communication may effectively communicate and uphold the company's value. Consequently, the usage of digital media marketing may boost brand recognition by making it simpler for customers to recognize the brands that the firm more successfully markets (Ahidin et al., 2019). Digital marketing is the most recent type of marketing to emerge as information technology advances. The rapid advancement of technology has made it possible for firms to leverage many digital marketing platforms to promote their products and services both domestically and globally (Makrides et al., 2020). The growth of digital marketing has been facilitated by the introduction of technological developments and improvements. "Digital marketing" is a technology-enabled adaptive process that aims to facilitate business relationships with partners and clients so that the communication generated may maintain and communicate brand value (Kannan & Li, 2017). Therefore, employing digital media for marketing can make it easier and more effective for customers to learn about the brands that the company is promoting (Abidine al., 2019).

Advertising is widely used by businesses because it makes it easier for consumers to obtain the information presented in an advertisement. This is particularly true in the present era, since individuals utilise electronic gadgets like computers and cellphones on a regular basis (Putri, 2021). Advertising has the potential to increase consumer attention when it is presented in a way that aligns with their needs and viewpoints (Maria et al., 2020). A positive correlation has been observed between 41,47 percent of brand awareness and the effect of advertising factors. The results of this study are in line with those of previous studies that also had a significant positive influence. These results can bolster the company's success (Alamsyah et al., 2021). Advertising has an effect on the product's brand awareness, which leads to a more noticeable rise in brand awareness (Mac-ozigbo&Ogohi, 2021). Social media marketing facilitates online consumerinteraction and accelerates brand exposure (Ahmed et al., 2017). A company's brand recognition is greatly shaped by a type of marketing known as social media marketing (Ahmed et al., 2017). The favourable substantial link between social media and brand awareness is further investigated by Ganesha K S (2019), who concludes that a company's social media presence may have a considerable impact on brand awareness, their needs and viewpoints (Maria et al., 2020). A positive correlation has been observed between individuals utilize electronic gadgets like computers and cellphones on a regular basis (Putri,2021)

Advertising has the potential to increase consumer attention when it is presented in a way that aligns with their needs and viewpoints (Maria et al., 2020). A positive correlation has been observed between 41,47 percent of brand awareness and the effect of advertising factors. The results of this study are in line with those of previous studies that also had a significant positive influence. These results can bolster the company's success (Alamsyah et al., 2021). Advertising has an effect on the product's brand awareness, which leads to a more noticeable rise in brand awareness (Mac-Osogbo&Ogoni, Social media marketing facilitates online consumer interaction and accelerates brand exposure (Ahmed et al., 2017). A company's brand recognition is greatly shaped by a type of marketing known as social media marketing (Ahmed et al., 2017). The favourable substantial link between social media and brand awareness is further investigated by Ganesha K S (2019), who concludes that a company's social media presence may have a considerable impact on brand awareness.

When implemented effectively, content marketing may raise a business's hit rate by as much as 30% by increasing the probability that a viewer of an advertisement will become a client (Putri, 2021). To that end, in order to increase brand recognition, a business should provide information that is easy to find or comprehend (Renwarin, 2021). When it comes to marketing, customers often rank content as the second most essential factor. Generally speaking, because digital media may enhance consumer-business connection, businesses can leverage platforms like Facebook to raise consumer sensitivity to brands and brand awareness (Makrides et al., 2020).

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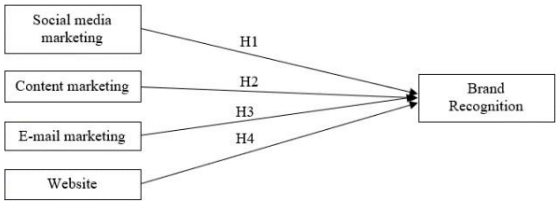
Correlation analysis, based on prior research, has demonstrated that digital marketing activities like email marketing have an impact on brand recognition. 95% showed that the two variables had a substantial positive association. Regression analysis is also used to demonstrate how the two variables positively and substantially impact and link to one another (Krishnaprabha& Tarunika, 2020).

Previous study has demonstrated through correlation analysis that e-mail marketing and other digital marketing activities have an effect on brand recognition. There was a substantial positive association between the two variables 95% of the time. Additionally, regression analysis shows that the two variables are positively and significantly correlated with one another and have an effect on one another (Krishnaprabha & Tarunika 2020)

**Conceptual model**




Questionnaires with multiple scales for the relevant variables are developed. Then, a random sample of 196 respondents' used digital media in Coimbatore city who are purchased electronic products. This study is descriptive in nature; it attempts to describe and examine the current scenario of the circumstance. This research was conducted in three stages. In the initial stage, a questionnaire was designed to measure the impact of digital marketing techniques on brand recognition in the context of an electronic product. Second stage: administer the questionnaire for data collection and evaluate the process. Third stage: use the SEM model to measure the cause and relationship between the variables.

**Measures**

The survey instrument had two sections (i) demographic profile (ii) impact of digital marketing techniques on brand recognition. The questionnaire comprised of 17 items designed by adopting standardized scales for each variable, impact of digital marketing techniques on brand recognition was measured by (Karen and Immanuel zai, 2022) The questionnaire was designed to a five-point Likert's scoring pattern (1-strongly disagree to 5-strongly agree), the overall reliability level (r) = 0.918.

**Results**

This section presents the findings and results of several statistical tests conducted to establish the reliability and validity of the measurements and to evaluate the conceptual model. CFA (Confirmatory Factor Analysis) has been used to establish the concept's validity and dependability. CFA determines, whether the observed variables are loading on their respective latent components, can be used to assess if the scales taken have convergent validity (Anderson and Gerbing, 1988, Kline, 2010). Fornell and Larcker's (1981) methodology has been applied in order to demonstrate discriminant validity. Composite reliability and average extracted variance were used as evidence of construct dependability. Using AMOS (Version 26), a through structural equation modeling (SEM) procedure has been used to validate the proposed model.

**Table 1**

| Fit indices | Value | Accepted value | Result |
|---|---|---|---|
| Comin/of | 2.116 | Less than 3 | Good |
| GFI | 983 | Value greater than .90 | Good |
| CFI | 989 | Value greater than .90 | Good |
| IFI | 988 | Value greater than .90 | Good |
| RMSEA | 0.05 | Value less than .08 | Acceptable |

Based on maximum likelihood technique carried out the SEM model results suggest that the data are good fit to the measurement model: $X^2$ (11) = 14.647, GFI =.971, CFI = .979, IFI = 976, RMSEA = 0.043. Table 2 represent result for the measurement model and all relationship are significant p < .005.

**Table 2**

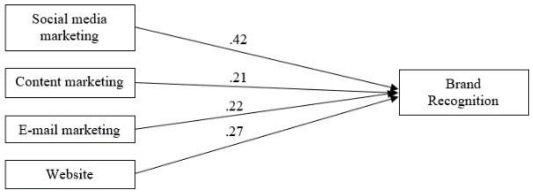
| Hypothesis | Relationship | | | Standardized estimates β | P value | Results |
|---|---|---|---|---|---|---|
| $H_1$ | Social media marketing | → | Brand Recognition | .421 | *** | Significant |
| $H_2$ | Content marketing | → | Brand Recognition | .215 | *** | Significant |
| $H_3$ | E-mail marketing | → | Brand Recognition | .227 | *** | Significant |
| $H_4$ | Website | → | Brand Recognition | .273 | *** | Significant |

Note: P value is less than .001 is ***, less than .005 is *

All variable and relationships are significant, the result path shows that Social media marketing (β = .421, P < .001) significantly influences Brand Recognition, therefore $H_1$ is significant. Content marketing (β = .215, P < .001) significantly influences Brand Recognition, therefore $H_2$ is also significant. E-mail marketing (β = .227, P < .001) is significantly influences Brand Recognition, therefore $H_3$ is also significant. Website (β = .273, P < .001) is significantly influences Brand Recognition, therefore $H_4$ is also significant. This study reveals there is significantly influence between media marketing, Content marketing, E-mail marketing, Website and Brand Recognition.

**MEASUREMENT MODEL**

**Figure 2**




**Conclusion**

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The outcomes of this significant influence have been successful in validating and supporting earlier findings. Certain results contradict many previous studies that reported significant positive results. The study's findings led to the conclusion that there was no appreciable advantage to the association between brand recognition and different types of content marketing. The association between the website variable and brand awareness is further established as being favourably significant based on the study's test results.For companies to be able to increase brand awareness in the context of mobile phones by making the most of websites and social media marketing. Since advertising can be used to track consumer behaviour, it is obvious that it plays a key role in marketing effectiveness when it comes to raising brand recognition. One of the ways that social media advertising affects brand recognition is for this reason.

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# The Role of FinTech in Sustainable Finance: ASystematic Review

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***Abstract*— This narrative review explores the potential of financial technology (FinTech) and sustainable investing, highlighting their transformative potential, challenges, and future directions. Through a literature review and empirical analysis, it explores FinTech's role in advancing sustainability in sectors like energy management, transportation, and financial services. FinTech fosters financial inclusion by providing access to banking, credit, and insurance, benefiting underserved populations and promoting sustainable agriculture. Also, it promotes green finance initiatives but faces challenges such as regulation and cybersecurity. Future research should focus on emerging trends and regulatory frameworks to integrate FinTech into sustainable finance practices, fostering a more inclusive and resilient financial ecosystem.**

***Keywords*— *FinTech, sustainable finance, sustainable investment, sustainable development, ESG,***

## I. INTRODUCTION

Recently, the combination of financial technology (FinTech) and sustainable investing has become an important area of interest in the financial world. Fintech has changed the way companies, investors, and customers handle their money with their specialized apps and softwares [2]. This not only transforms traditional financial markets but also holds the promise of promoting sustainability in investment practices [40].

When making investment decisions, sustainable investing involves considering environmental, social, and governance (ESG) factors. This approach has gained popularity for aligning financial goals with broader societal and environmental objectives [40][24]. The balance between FinTech and sustainable investing is evident, as new technologies provide opportunities to incorporate ESG considerations into investment strategies [40][29][20].

Furthermore, FinTech acts as a catalyst for financial inclusion, allowing underserved populations to access financial services and participate in sustainable investments [8][17][3]. By making credit accessible and promoting financial literacy, FinTech contributes towards sustainable economic growth [10][38].

In a world that is continuously facing challenges like climate change and social inequality, the role of FinTech in sustainable investing becomes very crucial [15][4][43]. It facilitates green finance initiatives and helps to maintain the balance between environmental and social sustainability goals [30][14][20], providing innovative solutions to meet evolving investor and societal needs.

However, the rapid growth of FinTech raises concerns about regulation, cyber security, and ethical frameworks [33][9][45]. Finding the right balance between promoting innovation and ensuring consumer protection is a challenge for policymakers and industry stakeholders.

Given these developments, it is essential to explore the relationship between FinTech and sustainable investing to understand the potential benefits, risks, and implications for the future of the financial world. This paper aims to delve into this dynamic intersection, examining how FinTech is reshaping sustainable investing and its impact on financial markets, society, and the environment.

## II. LITERATURE REVIEW

A comprehensive literature review was conducted to analyze existing research, academic papers, and practical insights on the intersection of FinTech and sustainable finance. Relevant databases such as academic journals, conference proceedings, and industry reports were searched using keywords related to FinTech, sustainable finance, and related concepts..

## III. DATA COLLECTION

The Data were collected from various sources, including academic publications, industry reports, and relevant websites. Data encompassed qualitative information, allowing for a comprehensive analysis of FinTech's impact on sustainable finance.

## IV. SYNTHESIS

The findings from the data analysis were synthesized and discussed in the context of existing literature and theoretical frameworks. Implications for theory, practice, and policy were explored, and recommendations for future research and industry stakeholders were provided based on the synthesized findings.

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## V. RESULT

### A. *Emerging interest in FinTech, InsurTech, and Blockchain*

FinTech, applied to assist firms, business holders, investors, and clients in managing financial activities, is gaining traction at the intersection of sustainability [40]. This specialized application of FinTech aims to promote sustainable business practices while enhancing financial efficiency.

### B. *Combining business and sustainability benefits*

The study underscores that innovative technology enables amore obvious combination of business and sustainability benefits [40]. This synergy is made possible through the application of FinTech, InsurTech, and blockchain, particularly in areas such as energy management, financial services, and transportation.

### C. *FinTech's role in financial inclusion*

Financial technology serves as the primary driver for financial inclusion, a cornerstone of sustainable balanced development [8]. By leveraging FinTech, societies can expandaccess to financial services, thereby fostering economic growthand social stability.

### D. *Supporting sustainable agriculture*

The study emphasizes FinTech's potential to become a vital support system for sustainable agriculture [30]. Improved access to financial services empowers smallholder farmers to enhance productivity, adapt to climate change, and make profitable investments, fostering sustainable development in the sector.

### E. *Boosting green finance*

FinTech is poised to boost the development of green finance by providing innovative solutions that align financial activities with environmental sustainability goals [36]. Through FinTech applications, financial businesses can promote green finance initiatives, contributing to the global transition to a more sustainable economy.

### F. *Enhancing financial inclusion through regulation*

A responsive regulatory approach is identified as the most suitable framework for boosting financial inclusion through technological innovation [17]. This approach balances the need for regulatory oversight with the imperative to foster innovation and expand access to financial services, particularly in underserved communities.

### G. *Addressing cybersecurity risks*

The alliance between banks and FinTech firms, while beneficial, also triggers significant cybersecurity risks [33]. Effective collaboration between these entities is essential for yielding profitability and increasing sustainability, but it necessitates proactive measures to mitigate cybersecurity threats and safeguard consumer data.

### H. *Promoting sustainable investing.*

Sustainable investing offers the best chance of outperformance in the modern age and contributes to financialstability [24].

By integrating environmental, social, and governance (ESG) criteria into investment decisions, sustainable investing

aligns financial goals with long-term societal and environmental objectives.

### I. *Expanding financial access*

Fintech has a critical role to play in democratizing credit access to unbanked and thin-file consumers globally [3]. Through innovative financial solutions, Fintech can bridge the gap between traditional banking systems and underserved populations, thus promoting financial inclusion and stability.

### J. *Supporting sustainable business practices.*

Fintech applications enable businesses to adopt sustainable practices by providing efficient, secure, and convenient payment transactions [28]. This fosters a shift towards environmentally friendly and socially responsible business models, aligning financial activities with sustainability goals.

## VI. ADVANTAGES AND DISADVANTAGES

| **Advantages** | |
|---|---|
| **Promotion of Sustainability:** | FinTech promotes sustainability in energy management, transportation, and financial services [40][15]. |
| **Financial Inclusion:** | It drives financial inclusion by providing access to banking, credit, insurance, and investment for underserved populations [8][25]. |
| **Support for Sustainable Agriculture:** | FinTech aids sustainable agriculture, improving financial services for smallholder farmers [30][20]. |
| **Green Finance Promotion:** | It promotes green finance, making financial businesses more sustainable by offering transparent investment opportunities [14,29]. |
| **Addressing Climate Change:** | FinTech addresses climate change by financing climate-resilient investments and integrating sustainability criteria into financial decisions [4][33]. |
| **Potential for "Green FinTech":** | The concept of "Green FinTech" highlights technology's role in linking sustainability, finance, and technology, especially amid the COVID-19 pandemic [29]. |
| **Synergies with Sustainable Development Goals (SDGs):** | FinTech synergizes with Sustainable Development Goals, enhancing responsible production and economic empowerment [20][15]. |
| **Accelerated Innovation:** | It accelerates innovation in financial services, focusing on sustainable performance and societal needs [2][5]. |

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| Disadvantages | |
|---|---|
| Regulatory Challenges: | Regulatory oversight and compliance requirements [33][27].<br>Adaptive regulatory regimes [42]. |
| Cybersecurity Risks: | Data breaches, fraud, and hacking attacks [33]. |
| Technological and Managerial Challenges: | Technical and managerial adaptation for startups and traditional institutions [26][28]. |
| Need for Empirical Testing: | Research and empirical analysis of FinTech's impact [15][44]. |
| Shariah Compliance Challenges: | Ensuring Shariah compliance in FinTech solutions [22]. |

## VII. FUTURE OPPORTUNITIES

### A. *Expansion of Financial Inclusion*

FinTech presents a significant opportunity to further expand financial inclusion, providing access to banking, credit,insurance, and investment opportunities for underservedpopulations globally [8][25].

### B. *Advancement of Sustainable Agriculture*

FinTech can continue to advance sustainable agriculture by providing improved financial services for smallholder farmers, enhancing agricultural productivity, and promoting financial inclusion. [30][20].

### C. *Promotion of Green Finance:*

There is a growing interest in "Green FinTech," which presents an opportunity to bridge the gap between sustainability, finance, and technology. This includes offering transparent investment opportunities, facilitating green financial products, and integrating sustainability criteria into financial decision- making processes [14][29].

### D. *Integration with Sustainable Development Goals*

FinTech integration with green technologies can enhance synergies between environmental and social SustainableDevelopment Goals (SDGs), promoting responsible production, economic empowerment, and societal well-being [20][15].

### E. *Accelerated Innovation:*

FinTech accelerates innovation in financial services, focusing on sustainable performance and addressing emerging societal needs. This includes advancements in digital infrastructure, financial products, and services that align with sustainability objectives [2][5].

## VIII. FUTURE CHALLENGES

### A. *Regulatory* Hurdles

Collaborations between banks and FinTech firms pose significant regulatory challenges, requiring robust oversight and risk mitigation strategies to ensure compliance and consumer protection. Regulatory uncertainty may impede the growth of FinTech initiatives [33][27][42].

### B. *Cybersecurity* Risks

The collaboration between banks and FinTech firms also presents cybersecurity risks, including data breaches, fraud, and hacking attacks. Proactive measures are needed to safeguard financial systems and consumer data from cyber threats [33].

### C. *Technological* and Managerial Complexity

Fintech innovations introduce technical and managerial challenges for both startups and traditional financial institutions. This includes adapting to new technologies, managing data privacy and security, and developing new capabilities to navigate the evolving landscape [26][28].

### D. *Empirical* Testing Needs

There is a need for empirical testing of the relationship between FinTech and sustainable development to ensure that intended benefits are realized and potential risks mitigated. Robust research and evaluation frameworks are essential for assessing the impact of FinTech initiatives on sustainability outcomes [15][44].

## IX. FUTURE SCOPE OF THE STUDY

Future research should explore how FinTech can driveinnovation and sustainable performance while addressing the challenges in financial inclusion and sustainable development. This entails investigating emerging trends in FinTech, InsurTech, and blockchain, as well as understanding the transformative potential of digital finance infrastructure. Additionally, there's a need to bridge the gap between FinTech and sustainable finance, promoting green finance initiatives and ensuring regulatory frameworks support consumer protection. Future studies should also address current limitations by conducting more empirical testing, regional analysis, and exploring regulatory strategies for emerging FinTech technologies. Overall, research should focus on interdisciplinary approaches to drive meaningful societal change and foster a more inclusive and resilient financial ecosystem.

## X. LIMITATIONS OF THE STUDY

The research paper has several limitations that should be considered. Firstly, due to its reliance on a limited number of papers, the generalizability of findings to all FinTech applications may be constrained. This underscores the need for a more extensive and diverse dataset to ensure robust insights. Additionally, the paper's focus on global regulations may overlook the nuanced regulatory landscapes of different regions. Furthermore, the absence of quantitative analysis limits a comprehensive understanding of the subject matter. While casestudies provide valuable insights, they may not fully capture FinTech's holistic impact on sustainable finance, necessitating the incorporation of complementary research methods. Moreover, the paper's entrepreneurial perspective may omit perspectives from other relevant stakeholders. Lastly, identified informational gaps pose challenges, indicating the necessity forfurther research to assess proposed regulatory strategies and address data limitations.

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## XI. CONCLUSION

The coming together of FinTech and sustainable investing isreally shaking things up in the financial world. FinTech's smart tools are making everything from energy to finance more eco- friendly and accessible to all. It's like giving everyone a fair shotat managing their money and supporting green projects. Sure, there are some hurdles like rules and keeping things safe online, but the possibilities for FinTech to make finance more sustainable are massive. With more research and teamwork, FinTech could pave the way for a financial future that's fairer and greener for everyone.

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# IMPACT OF ARTIFICIAL INTELIGIENCE ON DIGITAL MARKETING

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**ABSTRACT:**

**Digital marketing has benefited greatly from the use of artificial intelligence (AI). Marketers can use AI to improve their products, provide customers with advertising that is more timely and relevant, and gain a deeper comprehension of their audiences and data patterns. Brands are involving artificial intelligence in their promoting to make more customized client encounters across all channels, from email missions to online entertainment. This can assist marketers with better comprehension how their crowd collaborates with their image and what messages reverberate most successfully. Simultaneously, brands are attempting to track down a harmony between the utilization of computer based intelligence and straightforwardness for clients. As additional organizations put resources into simulated intelligence fueled items, clients expect more noteworthy straightforwardness about how these advances work and their security. Man-made consciousness can be utilized in numerous ways, from further developing site route to utilizing PC vision to make designated advertisements. Man-made intelligence is incorporated into a considerable lot of the computerized showcasing devices that advertisers utilize consistently. It can assist them with things like virtual entertainment the board, visual communication, content creation and watchword research. It can likewise assist them with things like client care and lead age via computerizing monotonous assignments. Without the need for human intervention, AI can respond to straightforward inquiries regarding a company's offerings. Man-made consciousness can possibly change advertisers and #039; life will become simpler in the future via mechanizing numerous ongoing undertakings and giving buyers bits of knowledge. This study broke down the different man-made consciousness devices utilized in advanced showcasing and how they can be utilized to further develop computerized advertiser's ventures utilizing content examination and interview techniques.**

**Keywords: Digital Marketing, Artificial intelligence, Tools, Impact, Future**

**INTRODUCTION**

In the long run, artificial intelligence (AI) will become an essential component of every commercial entity worldwide. Significant shifts in the AI landscape are reflected in the new trends in AI-driven automation. It is evident in the organization's reconfigured ideas, interests, and investments in AI adoption. This innovation is adequately modern to perceive faces and articles, which has tremendous ramifications for different business applications. Object detection can be used to distinguish and analyze images, whereas facial recognition can be used for security purposes. AI treats human images like cookies, making it possible to provide more individualized services based on the preferences of customers. Organizations are trying different things with facial acknowledgment to analyze their clients' temperaments and therefore, make suitable item suggestions.

The primary focus of AI in digital marketing is to retain users and convert leads. It can lead a user in a direction that is in line with the business's objectives through intelligent AI chat bots and intelligent email marketing and interactive web design. There are several factors that influence how AI impacts digital marketing.

Machine learning refers to computer programs that can access data and learn independently. ML collects data from various sources, such as social media profiles, menu boards, online reviews and websites. ML then uses the data to create and deliver content that is relevant to the target audience.

AI software enables deep-dive online analysis of a restaurant and its customers. By integrating AI into marketing strategies, businesses can make better use of available data and reach potential customers with appealing commercials at more opportune times.

Digital Marketing offers its clients a visually pleasing experience with AI for advertising on social media and digital platforms such as Face book and Instagram. These platforms have been rated by users and before directing them to offers that suit their needs. Artificial intelligence also helps marketers identify and predict trends. This prevents the company from overspending on digital

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ISBN: 978-93-340-1483-9
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advertising and ensures that money is spent properly. The computer's ability to recognize objects, scenes and actions in images is called computer vision. Medical image analysis, facial recognition, public safety and security monitoring are some of the uses. If computer vision and artificial intelligence are combined correctly, robots can predict what will happen in the future and act accordingly to possible changes.

Building customer profiles and comprehending the customer journey process have become simpler thanks to AI. It enables businesses to quickly and easily provide valuable, individualized content to various client profiles across all channels and stages of the marketing funnel. In view of verifiable information, man-made intelligence applications in computerized advertising can figure out what content is probably going to take clients back to the site. Simulated intelligence distinguishes which clients are probably going to withdraw from a particular help and investigations which highlights are standard among unsubscribe. Marketers can use these analytics to plan their next campaigns and implement strategies that encourage people to stay. Man-made intelligence applications in computerized advertising can filter through billions of data of interest on the web and tell definitively what it has to be aware for business. It will portray what cost will get the most transformations, when is the best opportunity to post, what headline will stand out, and so forth. Shrewd advertisers stay current with all patterns. It improves on positions and considers greater imagination and out-of-the-crate thinking. It likewise increases the value of the clients who benefit. This paper analyzed man-made intelligence and its need in the advertising area. We momentarily cover the different uses of man-made intelligence in a few showcasing portions. The paper additionally takes a gander at other simulated intelligence based changes for the showcasing ventures. At last, the review recognizes and talks about significant purposes of simulated intelligence in promoting.

## ARTIFICIAL INTELLIGENCE

Artificial Intelligence (AI) is a computer science technique that teaches machines to understand and mimic human behavior and communication. AI has produced a new intelligent computer that thinks, reacts, and works in a manner similar to that of humans based on the data that was made available. Artificial Intelligence is capable of doing intricate and specialized tasks including problem-solving, speech and image recognition, robotics, and natural language processing. Artificial Intelligence is a grouping of many technologies that can do jobs that require human intelligence. These technologies possess human-like intelligence in their ability to learn, act, and execute when integrated into routine business activities. It saves us time and money in business transactions by simulating human intelligence in machines.

Artificial Intelligence is worried about making clever machines that can think and carry on like people. It gives excellent open doors to a large number of ventures. Each industry referenced is either scared or captivated by the appearance of computer based intelligence. Simulated intelligence makes keen machines and gadgets that can think and respond like people. This innovation has been named the "following stage" in the modern upset. It is accepted that computer based intelligence and ML hold answers for the vast majority of the present issues. Besides, computer based intelligence might support the forecast of future issues. Computer based intelligence can make new advances, ventures, and conditions. Simply put, AI is the use of machines to imitate human intelligence processes. This might incorporate getting the hang of, thinking, and, in particular, the capacity to self-right. AI can comprehend, analyze, and make decisions. It is used to make market predictions and predict user behavior and is for existing user data. It is otherwise called information figure and associations overall use it to tweak their deals and promoting procedures to increment deals. Personalizing product recommendations, assisting in the discovery of the most effective promotion channels, estimating churn rate or customer lifetime value, and building superior customer groups are just a few of the many AI applications in marketing that use machine learning today.

### NEED FOR COMPUTERIZED REASONING IN SHOWCASING

Man-made intelligence is an entrancing and state of the art innovation that supplements an organization's ongoing substance system. This technology is a broad term that includes computer vision, natural language processing, machine learning, deep learning, and other technologies. Due to its capacity for data analysis and the provision of analytical tools, ML has a significant impact on the digital marketing scenario. Accordingly, it helps advertising groups in directing requirements based examinations. By concentrating on other aspects of digital marketing, businesses that make use of AI tools save time. Computer based intelligence is a tremendous and progressing mechanical development with extensive outcomes. Therefore, it is recommended to incorporate AI into digital marketing in order to encourage creativity and boost productivity in the coming years.

Advertisers can utilize computer based intelligence to acquire further purchaser bits of knowledge and better comprehend how to arrange and drive clients to the subsequent stage in their excursion, giving the most ideal experience. By thoroughly analyzing consumer data and knowing what consumers really want, marketers can increase ROI without wasting money on unsuccessful efforts. They can likewise abstain from throwing away life on mind-desensitizing publicizing that aggravates clients. Computer based intelligence will customize advertising in more ways than one. To better meet the needs of customers, numerous businesses are already utilizing AI to personalize their websites, emails, social media posts, videos, and other materials. One of the essential objectives of computer based intelligence is to mechanize occupations that previously required human acumen. This reduction in the quantity of work assets expected by an association to execute a task, or how much time an individual should devote to routine errands, considers huge effectiveness benefits.

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**PARTICULAR APPLICATIONS OF AI ACROSS DIFFERENT MARKETING DOMAINS**

The different essential showcasing fragments of artificial intelligence drives are Estimating, procedure and arranging, item, advancement, and place the board have been crucial in focusing on man-made intelligence based frameworks in advertising situations. The significance and meaning of different issues, for example, focusing on and situating, circumstances, and thinking models towards the item plan and end-client needs have been designated as fundamental parts of promoting for simulated intelligence applications.
Advertisers use man-made intelligence to increment client interest. Clients have a positive client experience through incorporated applications that utilize machine insight. It monitors buys, including where and when they are made. It can investigate the information and give altered showcasing messages to clients. At the point when a client visits a close by retailer, these messages contain ideas and exceptional proposals to further develop the client's typical request esteem. By combining system automation and marketing, the business gains a competitive advantage. Direction and client micromanagement are benefits of the man-made intelligence advertising approach. Information is basic for working on the examples of material prescribed to clients by ML calculations. Automatic media offering is the mechanized methodology for trading web promoting advertisements. These computer-based models inherit ML characteristics; make use of audience data, and present relevant advertisements to target customers.
Since man-made intelligence calculations and ML are utilized to help models, the gamble of human mistake is decreased, crowd information is effective, and show promoting is scaled. Individuals like to see commercials that are pertinent to them or address their interests. Marketers can ensure that they are dealing with the right consumer core groups, who are most likely to behave and respond positively to the advertising that is in front of them, by developing targeted ad strategies for suitable customers. Advertisers can do this by utilizing the computerized genius of artificial intelligence models and calculations. Man-made intelligence can assist advertisers with designated promoting efforts that include promotion focusing on. It can utilize ML to recognize purchasing, genuine change, and exploratory way of behaving and retarget possibilities with a higher possibility changing over them. Facial acknowledgment programming, one of many astounding artificial intelligence driven apparatuses, helps with following clients' in-store visits and connecting pictures to their virtual entertainment profiles. When matched with man-made intelligence fueled savvy warnings, these refined innovations send constant rebate offers and inviting messages to every guest, bringing about another degree of altered client experience.
When paired with excellent market research data, AI is a powerful tool. This makes it possible for businesses to finish a variety of activities. One key component of this popular use case is the segmentation of target groups. In this work, AI is significantly faster and more effective than humans. If companies dig a little farther, they might be able to present their target audiences with more individualized offers that they are more likely to accept. Many sector leaders have been enticed to expand into more sophisticated and effective fields, where artificial intelligence (AI) has solidified itself as the most valuable, by the rapid proliferation of new technology. AI-enabled organizations will be more likely to maintain their competitive advantage.

**DIFFERENT ARTIFICIAL INTELLIGENCE BASED CHANGES FOR ADVERTISING AREAS**

**COMPUTERIZING CONTENT:**
In the advanced promoting industry, quality written substance makes all the difference. Computer based intelligence helps advertisers in 2 jobs: Mechanizing content creation, content duration and conveyance. Natural language generation, or NLG, is a method for automatically producing content from data. The advertiser will pick the substance type, subject, number of words and information to be utilized. The simulated intelligence driven stages, for example, NLG then utilizes a calculation to deliver extraordinary articles. The substance delivered will reenact human-composed content setting aside organization time and cash.
Content duration is the process of collecting quality published articles and spinning the content while adding your own opinion. Not only did AI help automate the content collection process but also customized it depending on the targeted audience. AI harvests the audience's social media activities, engagements and interactions on the web. Then it ensures individualized content is delivered to each target audience.
**MASS PERSONALIZATION:**
The value of personalization lies in its ability to significantly influence consumer behavior. Before artificial intelligence, marketers used tools to segment their audience into clusters. Based on location, interests, preferences, demographics and other characteristics, and then create different personalized offers for each segment of that audience.

Today, marketers can deliver a personalized user experience to every million users. The availability of this technology replaced the segmentation of the public into individuals. With the support of artificial intelligence, especially machine learning, unique offers are created for each customer based on the digital footprint of the users. AI's ability to look at and analyze overlapping attributes and find patterns and what humans cannot do. These AI capabilities help businesses execute digital marketing campaigns based on micro-segmentation. This technique ensures that marketers know what message resonates with their audience and deliver exactly what they need.

**ADVERTISING AND PRODUCT OFFER**:
In digital marketing, online advertising is one of the most important channels for generating leads. Platforms that provide advertising services, such as publishers and social media sites, compete to provide marketers with more targeted advertising. Targeted ads bring higher conversion rates to businesses. For example, recommended products/items that were only visible to users based on their transaction history. Nowadays, websites are adopting

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machine learning (ML). ML takes into account users' behavioral history, as well as their implicit and explicit intent, resulting in more meaningful recommendations. Bidding is another aspect of online advertising that used to take up most of marketers' time when handled manually. Artificial intelligence automates the process with smarter offers. AI combines user-specific information (signals) such as device, location, language and other information that may also be collected by third parties. This improves ad effectiveness and campaign bottom line, saving marketers time to focus on more valuable campaign aspects such as content and appearance.

**USER TRACKING & DATA ANALYTICS:**

AI and machine learning have also significantly changed this area of digital marketing. A buyers journey is a sequence of steps in a funnel. From being aware of a brand to expressing interest in and interacting with it to making a purchase. By streamlining the purchasing process, expanding the channels for engagement, and providing tools for comparison and review, digital marketing changed the funnel and allowed users to proceed through it more quickly. But the ability to measure and analyze results is a crucial component that these developments in digital marketing have overlooked. Artificial Intelligence cannot just combine vast amounts of data gathered from many sources. Additionally, it can examine the items that users have looked up, the content types they engage with most frequently, and the preferred marketing channels of each user. With the use of this streamlined, organized, and filtered analysis of massive amounts of data, marketers were able to cut the amount of time spent testing and eliminate conjecture while still developing campaigns based on data.

**CUSTOMER SERVICE AND CHATBOTS:**

AI plays an important role in increasing customer satisfaction at several stages. Social listening is the process of monitoring consumer conversations on social media and online about your brand, including feedback, experiences, reviews. Machine learning has helped brands process massive amounts of data. It even includes recognizing images containing your brand logo and intelligently picking up relevant conversations.

AI is also used for voice authentication to verify customers and speed up the support process to bypass the security and password process.

Introducing deep learning and NLU (natural language understanding) based AI chatboot support. NLU is also part of artificial intelligence and allows a machine to understand human language, analyze written sentences or voice, and communicate with people. Thus, an AI-based chat room interacts with customers and provides relevant information. It single-handedly resolves the recurring questions and queries that make up more than 30% of support cases, providing seamless and consistent support.

**PREDICTING HOW CUSTOMERS WILL ACT:**

Advertisers never again foster techniques to address clients issues and needs founded on their own seeing exclusively yet rather depending on substantial information and data. Man-made intelligence, explicitly profound learning has empowered advertisers not exclusively to break down yet additionally to precisely foresee future client ways of behaving. The availability of massive amounts of data has made this conceivable. There's additional clients Face book than the number of inhabitants in the US, China and Brazil joined. Now, businesses can sort huge amounts of detailed data like customer interactions and likes and dislikes to find metrics that show how a user behaves. Then change these discoveries into significant bits of knowledge to interface with their buyers on a more profound level and foresee their future activities. AI's capacity to furnish constant prescient investigation joined with consistent learning is affecting advanced advertising tremendously.

**ADVANTAGES OF INVOLVING MAN-MADE INTELLIGENCE IN ADVANCED PROMOTING**

**THE BEHAVIOR OF CUSTOMERS IS NOW MORE VARIABLE**

Trying to reach every individual that fits into your company's specialty will take a significant amount of time, money, and energy. Thankfully, you can use AI algorithms to sort through an otherwise dispersed audience and find the prospects who are most likely to take action on your offer. For the purpose of finding convertible prospects from pricey Google advertising, a more thorough and in-depth study is required.

A statistical decision tree that evaluates historical data and determines marketing objectives can be used by an AI technology. AI and machine learning models can also be used to study customer behavior, spot trends, and create digital marketing plans based on those findings. Additionally, build these models around the goals you want to accomplish with your marketing, like higher lead generation, website traffic, or conversion rates.

**CLIENT ENGAGEMENTS ARE ANALYZED SUPERIOR**

Measuring client engagements is basic for deciding what worked and didn't, particularly since client securing costs distant exceed client maintenance costs. Utilizing AI to track each campaign will give superior experiences into which client sections marketers ought to target.

AI instruments can moreover give bits of knowledge by comparing ancient and unused clients to educate you how to create more standard clients. It too permits you to target their past clients way better and move forward their involvement. Moreover, AI too conveys relevant data approximately what each client needs and how to target them.

We'll moreover track our audience's behavior and lock in with them more viably utilizing AI. Look at buyer dialogs in real-time and decide why individuals talk about them on diverse social media stages. This will permit you to way better target clients by utilizing compelling exercises for each gathering of people.

**MARKETING CAN NOW BE AUTOMATED**

AI can also help you automate digital marketing while keeping your audience targeting. Automation and

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personalization via artificial intelligence are ideal combos that result in a high level of marketing personalization.Our business can also gain the upper hand in getting clients – something every company needs in a fast-growing market. Through AI systems, you are now able to automate pay-per-click (PPC) ads, search engine marketing (SEM), SEO, conversion rates, social media marketing (SMM), and keyword research.

**ADVERTISEMENTS CAN NOW BE TARGETED TO SPECIFIC AUDIENCES**

Persuading potential customers is an important aspect of targeted marketing, but any marketer knows how to persuade strangers. will tell you how difficult it is to do. Fortunately, this goal can be achieved by combining AI with predictive consumer segmentation, virtual assistants, or intelligent design for personalized customer experiences. Traditional advertising is also much less effective than marketing that targets people based on their general preferences. With the advent of AI, marketers can use customized data to predict whether a shopper is interested in making a purchase before asking them for cash or credit
.

**BETTER CUSTOMER RELATIONS ARE NOW MAINTAINED**

Since businesses can now obtain real-time insights into how their customers interact via various communication platforms, artificial intelligence (AI) is essential to customer relationship management.
AI is able to use statistical models to identify the best course of action after automatically assigning concerns to the relevant support group. Moreover, incorporate chat bots that utilize automated procedures into your website to provide clients with a broad overview of your offerings. This might be a reasonably priced way to grow the clientele.
You can keep an eye on the user data on your website to determine which visitors are most likely to stick around. You can determine what promotions you can use to maintain their brand loyalty by looking at their preferences. Furthermore, major corporations like Volvo have experimented with fusing AI with virtual reality. Customers can decide whether or not to purchase a product by taking advantage of this free "try-on" feature. Increased sales and customer loyalty are the outcomes of this.

**HAZARDS ASSOCIATED WITH DIGITAL MARKETING WITH ARTIFICIAL INTELLIGENCE**

**THE ELEVATED EXPENSE OF PRODUCTION**

AI has the potential to be abused to impact and control client behavior, driving to clients being uncovered to unimportant focused on advertisements and substance. This might eventually result in clients losing intrigued within the brands they are interacting with.
AI may be utilized to assemble huge sums of information around clients without their information or assent. This information may at that point be utilized for noxious purposes, such as character burglary or extortion. Additionally, if this information were to drop into the off-base hands, it can be utilized to target and abuse people.

**LESSENING HUMAN POSITIONS**

AI-powered frameworks may not be completely precise or solid. This may lead to untrue positives or negatives when focusing on clients with showcasing substance, which may cause them to either overlook or lock in with a brand superfluously.
Consumers dislike conversing on the phone with computers or even chat bots: Although artificial intelligence (AI) has the potential to enhance customer service and engagement, it's crucial to remember that not all consumers will feel at ease conversing over the phone or interacting with chat bots. It is imperative to take into account the inclinations of the intended audience and offer substitute means of communication.

**NEITHER EMOTIONS NOR CREATIVITY**

Without humans, computers cannot achieve this: Artificial intelligence (AI) cannot replace human intellect and creativity. It's crucial to remember that while AI may automate processes and offer insights, it cannot take the place of the human element and creativity required in digital marketing.

**CONCLUSION**

Manufactured insights is having a critical affect on advanced showcasing by revolutionizing the way companies associated with their clients, personalizing their promoting procedure and making strides their social media nearness.
It may be a profitable instrument that permits companies to analyze huge sums of information in genuine time. Also, AI is revolutionizing the way companies conduct their showcase examination and make trade choices. It is critical to note, in spite of the fact that, that AI ought to not be seen as a substitute for marketers, but as a apparatus that makes a difference them move forward and optimize their strategies.
In outline, counterfeit insights may be a important innovation for computerized promoting that gives modern openings to personalize the client encounter and progress trade productivity.

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IC-TSI 2024
ISBN: 978-93-340-1483-9
29th February 2024

# ARTIFICIAL INTELLIGENCE IN E-COMMERCE

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**ABSTRACT**
Modern technical science includes artificial intelligence. It has the capacity to gather and evaluate vast amounts of data in order to make actionable judgments. Online purchasing and selling of goods and services is known as e-commerce. E-commerce companies are increasingly utilizing AI technology to improve customer experience and gain a deeper understanding of their customers. The use of artificial intelligence in e-commerce is briefly covered in this study.
Keywords: Artificial intelligence · AI · Machine learning · E-commerce · Electronic commerce

## INTRODUCTION

Artificial intelligence has the capacity to gather, analyze, and make decisions based on enormous amounts of data. Many e-commerce companies have started implementing various forms of AI in order to gain a deeper understanding of their customers and enhance their overall experience. The science and engineering of creating intelligent computers and machines is known as artificial intelligence. It has been more than 60 years since the invention of AI, and its enormous accomplishments are still evident in both our economy and culture.

## OBJECTIVES

- Develop the problem-solving ability
- Incorporate knowledge representation
- Facilitate planning
- Allow continuous learning
- Encourage Social Intelligence
- Promote creativity
- Achieve General Intelligence
- Promote synergy between humans and AI f

## WHAT IS ARTIFICIAL INTELLIGENCE (AI)?

Artificial intelligence is the simulation of human intelligence processes by machines, especially computer systems. A few particular applications of AI are in machine learning, speech recognition, natural language processing, expert systems, and vision. The scientific discipline of artificial intelligence (AI) seeks to extend and reconstruct human intellect in order to understand the independent brain functions. Intelligent technology is the cornerstone of artificial intelligence technology, and devices that are built on this foundation include robotics, speech environments, picture visualization, and other devices that are close to human mind. Artificial intelligence is gaining more attention as modern science and technology continue to push the envelope. Information technology and artificial intelligence are growing simultaneously and are impacted by each other's advancements in popular culture. Popular artificial intelligence research presently focuses primarily on machine learning and immersive learning.

## TYPES OF ARTIFICIAL INTELLIGENCE

1. Narrow AI or artificial narrow intelligence (ANI)
2. General AI or artificial general intelligence (AGI)
3. Super AI or artificial super intelligence (ASI)
4. Reactive machines.
5. Limited memory.
6. Theory of mind.
7. Self-aware.

1. Narrow AI or artificial narrow intelligence (ANI)

A particular kind of artificial intelligence identified as "narrow artificial intelligence" (or "narrow AI") is one in which a learning algorithm is created to carry out a single job and any information obtained from completing it is not automatically transferred to other tasks.

2. General AI or artificial general intelligence (AGI)

The representation of generalized human cognitive capacities in software is known as artificial general intelligence (AGI), which enables the AGI system to solve problems when confronted with novel tasks..

3. Super AI or artificial super intelligence (ASI)

The area of artificial intelligence known as Artificial Super Intelligence, or ASI, is capable of thinking and doing activities that are beyond the capacity of the human mind. That is the part of intellect that is more powerful and sophisticated than the intelligence of humans.

4. Reactive machines.

AI systems that are task-specific and lack memory are known as reactive machines; this means that an input will always result in the same output. Because machine learning models use consumer data, including search or purchase history, to make suggestions to the same customers, they are typically reactive machines.

5. Limited memory.

IC-TSI 2024
ISBN: 978-93-340-1483-9
29th February 2024

Machine learning models with limited memory make use of an external memory to hold pertinent data while they are learning. When it's necessary to keep a long-term memory of prior inputs, these models are utilised to tackle sequence learning problems.

6. Theory of mind.

Machine learning models with limited memory make use of an external memory to hold pertinent data while they are learning. When it's necessary to keep a long-term memory of prior inputs, these modelsare utilized to tackle sequence learning problems.

7. Self-aware.

It is known as an artificial system's capacity for awareness or self-perception. Beyond pattern recognition and rule-based decision-making, AI systems must eventually be able to understand their own behaviors' and intentions in order to be considered self-aware.

**AI IN BUSINESS TODAY**

Financial business procedures can be automated with AI's assistance, improving efficiency and accuracy. Fraud detection is one of the popular business uses of AI in finance and accounting. AI can assist you in preventing online fraud by instantly identifying transactions that seem suspect.

**BENEFITS OF AI**

The advantages range from streamlining, saving time, eliminating biases, and automating repetitive tasks, just to name a few. Almost any company plan can incorporate AI. It's crucial to first comprehend the role that data gathering and analysis play in artificial intelligence before beginning any AI project. We can better understand how artificial intelligence (AI) might benefit your industry by looking at the methodology underlying it.

**THREATS FROM ARTIFICIAL INTELLIGENCE**

Just as every light side contains a gloomy side. Additionally, artificial intelligence has several drawbacks. Although the implementation of intelligent systems comes at a high cost Because artificial intelligence apps compete with humans for the majority of tasks, artificial intelligence is making people lazy. human intervention is decreasing as a result, which could result in unemployment. Beyond that, there is no room for sentiment or unconventional thinking.

1. Danger to Personal Space

The ability of machines to comprehend human language is known as natural language processing. An artificial intelligence programme that can recognize speech and comprehend spoken language may also comprehend every email and phone conversation that a person has. Users' privacy may be compromised by this.

2. Danger to one's employment

According to a Citigroup prediction, the banking industry may lose about one-third of its positions in the ten years between 2015 and 2025. Certain duties performed by a doctor can also be completed by a computer. MRI scans can be analyzed by IBM's Watson to detect lung cancer far more reliably than by actual people.Algorithms can also perform some accounting tasks. Accounts can now be preparedand financial data analysed by algorithms. With the use of big dataand machine learning,computers can alsohandle insurance and brokers.

1. Transparency issue
   One could take advantage of disparities in information availability. For instance, an online merchant can use AI to anticipate someone is prepared to pay based on their online behavior or other data without their knowledge, or a political campaign might modify their messaging. The fact that it is occasionally unclear to users whether they are communicating with AI or a human is another problem with transparency.
2. Risks to safety and security
   AI programmes that interact with people directly or are incorporated into the human body run the risk of being misused, hacked, or badly constructed. A lack of human control over lethal weapons could result from the improper regulation of AI use in weaponry.
3. Competition
   Getting a lot of knowledge could also cause businesses to acquire an advantage over rivals, so distorting the market

**ELECTRONIC COMMERCE**

E-commerce is the term for the buying and selling of products and services online. Affiliate marketing strategies are also included in the definition of an e-commerce business. To increase online sales, you can use ecommerce platforms like social media, your own website, or a well-known retailer like Amazon. Buying something these days simply requires two or three steps when using electronic commerce. There are many different e-commerce websites, such as Flipkart, eBay, Amazon, Myntra, and so on. It uses modern communication technology and the internet to facilitate corporate process management and knowledge sharing. All business operations—internal and external—like network marketing, wallet payments, UPI transactions, logistics, and delivery—are totally dominated by it. The Internet, Intranet, email, databases, software development tools, EDI (Electronic Data Exchange), and other technologies form the essential technical basis of e-commerce. All business operations—internal and external—like network marketing, wallet payments, UPI transactions, logistics, and delivery—are totally dominated by it. The Internet, Intranet, email, databases, software development tools, EDI (Electronic Data Exchange), and other technologies form the essential technical basis of E-Commerce. The purchasing and selling of products and services over the Internet is known as electronic commerce, or e-commerce. Another phrase that is occasionally used in place of e-commerce is e-business. All business operations—internal and external—like network marketing, wallet payments, UPI transactions, logistics, and delivery—are totally dominated by it. The Internet, Intranet, email, databases, software development tools, EDI (Electronic Data Exchange), and other technologies form the essential technical basis of E-Commerce. The purchasing and selling of products and services over the Internet is known as electronic commerce, or e-commerce. Another phrase that is occasionally used in place of e-commerce is e-business.

IC-TSI 2024
ISBN: 978-93-340-1483-9
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**E-COMMERCE MODELS:**

1. Business-to-Business (B2B)

Establishing a B2B strategy is your best option if the nature of your offerings is focused on satisfying the requirements of businesses. Reaching out and networking are more important components of this approach. Large advertising expenditures don't really assist. Convincing established firms that your products/services are a perfect fit for their operations would be your biggest difficulty. The benefit of this business model is that, if you maintain the calibre of your goods and services, repeat business and larger order amounts are common. The Media Lounge B2B model is an excellent illustration.

2. BUSINESS-TO-CONSUMER (B2C)

If the primary target market for your goods or services is individuals, you should choose this model. After visiting your website, the prospective buyer decides if your offering may help them with their problems. The buyer may choose to place an order after perusing the store. Portugal Footwear is an example of a profitable business to consumer.

3. CONSUMER-TO-CONSUMER (C2C)

While business principles for B2B and B2B transactions are well-known, customer-to-customer (C2C) transactions are exclusive to e-commerce. This is mostly because of how popular websites like eBay, OLX, and Craigslist are.
Users of these sites can purchase, sell, rent, and exchange goods and services. A tiny commission is received by the platforms from each transaction. Operating this company model demands considerable preparation due to its complexity. A lot of platforms have failed, usually because of legal problems.

4. CONSUMER-TO-BUSINESS (C2B)

The Customer-to-Business (C2B) business model is a well-received concept that has gained popularity mostly because of platforms that serve independent contractors. Freelancers in the C2B industry complete tasks given to them by clients. The majority of these clients are businesses, and independent contractors are frequently people. Simplify this by thinking of C2B as a lone proprietorship that provides services to larger companies. This business model includes affiliate marketing, freelance marketplaces, and reverse auction websites. Again, because of the many legal issues, this strategy necessitates forethought.

5. BUSINESS TO GOVERNMENT (B2G)

A business that sells its goods to government organisations uses the business to government (B2G) e-commerce business model. You will need to submit bids for government contracts if you decide to pursue this e-commerce company strategy. E-commerce companies are typically required to submit bids for government projects when governments post requests for proposals. A government agency would rarely visit your e-commerce website to place an order. Nevertheless, depending on their requirements, some local government organisations may be an exception to the rule.

6. BUSINESS TO BUSINESS TO CONSUMER (B2B2C)

B2B2C ecommerce is the term used to describe the situation in which a company sells goods to another company, which in turn sells those goods to customers online. An example of this kind of e-commerce business model involves three parties. For instance, if you decide to proceed, you will need to form a partnership with another company before you are able to market its goods and give the partner a cut of each sale. Owners of e-commerce stores select this business model mostly for bringing in new clients. This occurs when, despite their familiarity with the partner's items, customers are unable to place online orders because of a variety of barriers, including geographic location and expensive delivery charges. Therefore, new E-commerce store owners looking to grow their clientele would find this business strategy most suited. Online shopping and artificial intelligence Since the advent of artificial intelligence, the e-commerce industry has expanded dramatically, and over 72% of business executives believe AI will continue to help their organizations in the future. Furthermore, artificial intelligence will benefit the e-commerce industry more and more in the future.

**AI IN E-COMMERCE CAN BE EVIDENT IN:**

1. enhancing client support
2. making suggestions for products
3. dividing up the audience
4. examining client contentment
5. Recognizing fraud

1. ENHANCING CLIENT SUPPORT

When you went to a website, did you ever see a Chabot greet you? One of the most prevalent ways that users communicate with AI directly is through chat bots. Business-wise, chat bots enable organizations to expedite their customer support procedures and free up staff members' time for problems that need for more individualized attention. To comprehend client demands, chat bots often use AI, machine learning, and natural language. Additionally, Chabot technology can assist in connecting clients with the most qualified live agent to handle their inquiries.

2. MAKING SUGGESTIONS FOR PRODUCTS

AI can be used by businesses to make product recommendations that will pique customers' interests and keep them coming back. You can show your clients products that are similar to the ones they have already viewed by keeping track of their online behavior. This is a particularly smart strategy for businesses in the

E-commerce industry. Streaming services are another source of tailored recommendations. Streaming services can incentivize you to use their app longer by displaying titles that are similar to the ones you click on most often.

IC-TSI 2024
ISBN: 978-93-340-1483-9
29th February 2024

This allows them to see what kinds of films and shows you are most likely to watch.

### 3. DIVIDING UP THE AUDIENCE

Advertising departments can utilize AI to segment consumers and develop customized ads in a similar way to how it recommends things. Reaching the correct audience is crucial in fiercely competitive sectors. Companies use data to determine which user types will see which adverts in order to increase the effectiveness of their marketing initiatives. Artificial Intelligence (AI) is used to forecast consumer behavior in response to particular ads

### 4. EXAMINING CLIENT CONTENTMENT

Businesses utilize sentiment analysis, also known as emotion AI, as a strategy to predict their customers' responses. Businesses utilize AI and machine learning to collect data on how consumers view their brands. This could entail sifting through social media postings, ratings, and reviews mentioning the brand using AI. The knowledge gathered from this study enables businesses to pinpoint areas in need of development.

### 5. IDENTIFYING FRAUD

AI can assist businesses in identifying and mitigating fraud risks. Within the financial sector, there exist instruments that employ machine learning algorithms to detect transactions that appear suspicious. The application halts the transaction and notifies the relevant parties when
it it detects a fraud risk.
In summary

## CONCLUSION

India is the e-commerce market with the quickest rate of growth, per Forrester [9]. AI will have a big impact on how e-commerce companies draw in and keep clients. There will be a huge demand for new data science, machine learning, and engineering due to the AI revolution in e-commerce. In addition to creating jobs in IT, AI-based e-commerce will also create jobs in system and software development and maintenance for those AI algorithms. But in the upcoming years, the combination of AI and e-commerce may make it more likely for those without in-demand skill sets to face unemployment.

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IC- TSI 2024
ISBN: 978-93-340-1483-9
29th February 2024

# CONSUMER PERCEPTION TOWARDS CASHLESS PAYMENT METHODS IN INDIA

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**Abstract:**

**The Digital India Program has been launched by the Government of India in order to transform the country into a knowledge economy and to empower citizens digitally. With this in mind, the government has been rigorously promoting cashless payment methods through its various reforms and policies. The main focus of the study is to understand the mind-set of the people while transitioning from cash-based economy to cashless economy. For this purpose, 160 well-structured questionnaires were distributed. From this study, it has been found that a majority of the respondents believe that cashless method is the way to go method in the future and that it will contribute to a greener society. The study also shows that consumers rate banking sector as the most preferred sector to utilize cashless methods. It has also been found that there is a relation between the area of residence of the respondents and their ability to adapt to the technological advancements in the financial sector. It has been found that cashless payment method is still a relatively new concept to many and the people are unaware of the various modes of cashless payments methods.**

**Keywords—Cashless Payment, Digital Transaction, Perception**

## Introduction

The Government of India envisages a digital India in which the people aretechnologically empowered and the economy is knowledge based. The Government is encouraging its citizens to utilize internet as means to improve quality, convenience in processing and to create a faceless, paperless and cashless society. A cashless society is onein which financial transactions are carried out by transfer of digital information between the parties involved, rather than exchange of physical money. The trend of using non-cash transactions in daily life begun in 1990s and from thereon it has gained the interests of many. It has also attracted the Government of India as it could aid in curbing terror financing as well bring a control over fake money circulation. A cashless society will also help the government to monitor the money laundering cases. There is a wide variety of cashless payment methods such as credit cards, debit cards, cheques, demand drafts, digital wallets, etc., Even though there are multiple payment options available, cash transactions accounts for about 85% of the total consumer transactions globally. Our society has always been a cash based society and hence transitioning from cash-based society to cashless society could take time. However it must be noted that a completely cashless economy has a sinister side to it. A cashless economy is more vulnerable to fraudulent activities, control of data by the government and ignorance to spending among the people. Economists express mixed opinions about cashless methods and this study was conducted to understand the consumer perception on cashless transaction methods, to gain more knowledge on the subject.

## REVIEW OF LITERATURE

According to Worthington (1995), electronic payment method serves as an efficient method of handling cash where the society is clumsy and expensive to handle it. He also projected that some will be more benefited from this system than others. The payment by plastic cards were analyzed under the three headings of pay later, pay now and pay before.

Gambir (1998), describes that credit cards as a means of consumerism and holding it would mean as a status symbol. Initially banks showed reluctance in introducing credit cards due to the economic condition of the country. But with the increase in economic and financial liberalization, entering in to the field seemed more desirable. He also states that this would reduce the burden on cash in our system.

Al-Laham (2009) in his research has found out that there is a increase in the development of electronic payment schemes in the recent years, which has the ability to takeover cash as the primary means of payment. He also describes electronic money as a record of funds with the capacity to turn into an important means of transaction in the future. Further, he feels that the banks will have to change their operational target and bring about a closer coordination of monetary and fiscal polices if the demand for the bank reserves gets limited due to e-money.

Rashmi Bindra(2017), has expressed that cashless economy would help in the
reduction of parallel economy of the people who hoard money, bypass banking channels,

IC- TSI 2024
ISBN: 978-93-340-1483-9
29th February 2024

terror funding. It will help in reducing instances of tax avoidance as there is continuous
monitoring of an individual's behavior. The author has said that cashless economy will
increase consumption which will increase demand for the products or services which in turn
will increase employment opportunities and thereby raise the income of the people

Preeti Garg (2017), has said that the major obstacles that will obstruct the growth of
cashless economic policy are the cyber fraud, lack of transparency & efficiency in
digital payment system, illiteracy rate, attitude of the people,. However the study shows that
this is a step in the right direction in order to develop the economy in India.

RESEARCH OBJECTIVES

1. To study the consumer awareness on different modes of cashless transactions
2. To understand the consumer attitude towards cashless economy.
3. To analyze the preference of the consumers to utilize different modes of cashless
methods in various sectors.

RESEARCH METHODOLOGY

Research is a well-structured, methodical study of an event, happening, new ideas or
an existing problem in order to generate answers for the betterment or growth of the field of
study. In order to understand the state of mind of the consumers, the primary data was
collected by distributing 160 well-structured questionnaires among the respondents through
convenience sampling method. The secondary data includes information provided by the
journals, books, other research findings, and internet. The tools used for analysis are
percentage analysis method, weighted average ranking method, Chi-square test method,
Pearson's Correlation Coefficient method.

DATA ANALYSIS AND INTERPRETATION

Table 1 shows that a majority of the respondents (80%) belong to the age group
between 21-30 years. The samples have a equal population of male and female respondents.
It must also be noted that none of the respondents are uneducated or are from school level of
education. It can be seen that most of the respondents (55.625%) are post graduates. Also,
most of the respondents (60.625%) come from urban region and a vast amount of the
respondents (69.375%) are salaried employees. It can also be seen that majority of the
respondents (56.875%) are from the monthly income category of Rs.10,001 – Rs.25,000.

TABLE 1: DEMOGRAPHIC PROFILE OF RESPONDENTS

| Factors | RESPONSE | |
|---|---|---|
| | Particulars | Percentage of Respondents |
| Age | Less than 20 years | 6.875% |
| | 21-30 years | 80% |
| | 31-40 years | 6.875% |
| | 41-50 years | 5% |
| | Above 50 years | 1.25% |
| Area of Residence | Urban | 60.625% |
| | Rural | 12.5% |
| | Semi-Urban | 26.875% |
| Educational Qualification | Under graduate | 37.5% |
| | Post graduate | 55.625% |
| | Others | 6.875% |
| Occupation | Unskilled Labour | 0 |
| | Self Employed | 6.875% |
| | Salaried Employee | 69.375% |
| | Contractual Labour | 0.625% |
| | Unemployed/Student | 23.125% |
| Income | Nill – Rs.10,000 | 27.5% |
| | Rs.10,001-Rs.25,000 | 56.875% |
| | Rs.25,001-Rs.40,000 | 8.75% |
| | Rs.40,001-Rs.55,000 | 3.75% |
| | Above Rs.55,000 | 3.125% |

Table 2 shows the rank of order of awareness of the consumers to use cashless payment methods. It can be seen that consumers mostly are aware about debit cards and are least aware when it comes as to Aadhar Enabled Payment Systems

a. **W.A – Weighted Average**
b. ***AEPS-aadhar enabled payment systems***
c. *USSD-* ***unstructured supplementary service data***
d.

Table 3 shows the rank of order of preference of the consumers to use cashless payment methods in the different sectors. It can be seen that consumers mostly prefer to use cashless means when it comes to banking sector and exhibit least preference when it comes as a gift from relatives.

**TABLE 2: Awareness of Different Modes of Cashless Payment**

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ISBN: 978-93-340-1483-9
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| Particulars | RESPONSE | | | | | | |
|---|---|---|---|---|---|---|---|
| | 5 | 4 | 3 | 2 | 1 | W.A | Rank |
| Credit Card | 330 | 256 | 87 | 0 | 1 | 5.617 | III |
| Debit Card | 625 | 140 | 0 | 0 | 0 | 6.375 | I |
| Cheque | 265 | 368 | 45 | 0 | 0 | 5.65 | II |
| Net Banking | 305 | 132 | 186 | 8 | 0 | 5.258 | IV |
| E-Wallets | 85 | 316 | 93 | 66 | 0 | 4.667 | VI |
| M-Wallets | 45 | 248 | 150 | 78 | 0 | 4.342 | VII |
| Cryptocurrency | 20 | 44 | 87 | 108 | 51 | 2.583 | XI |
| Demand Draft | 255 | 252 | 63 | 24 | 13 | 5.058 | V |
| UPI Apps | 90 | 192 | 81 | 86 | 24 | 3.942 | IX |
| Gift Cards | 75 | 212 | 126 | 82 | 9 | 4.2 | VIII |
| AEPS | 0 | 108 | 0 | 128 | 69 | 2.542 | XII |
| USSD | 0 | 136 | 21 | 146 | 46 | 2.908 | X |

TABLE 3: **Preference Of Cashless Payment At Different Sectors**

| Particulars | RESPONSE | | | | | | |
|---|---|---|---|---|---|---|---|
| | 5 | 4 | 3 | 2 | 1 | W.A | Rank |
| Purchase of Automobile | 185 | 280 | 78 | 20 | 17 | 4.833 | V |
| Construction/ Buying of Assets | 170 | 268 | 21 | 8 | 48 | 4.292 | VII |
| Capital Goods | 185 | 244 | 93 | 8 | 27 | 4.642 | VI |
| Banks | 350 | 252 | 63 | 0 | 6 | 5.592 | I |
| Consumer Staples | 305 | 268 | 96 | 0 | 0 | 5.575 | II |
| Jewellery | 355 | 224 | 36 | 0 | 21 | 5.3 | III |
| Telecom | 240 | 184 | 174 | 0 | 8 | 5.05 | IV |
| Paints | 130 | 44 | 276 | 42 | 10 | 4.183 | VIII |
| Energy and Power | 60 | 116 | 138 | 62 | 42 | 3.483 | XI |
| Gifts from Relatives | 100 | 20 | 159 | 12 | 76 | 3.058 | XII |
| Earnings from the side | 95 | 120 | 195 | 66 | 13 | 4.075 | IX |
| Weddings, Ceremonies | 95 | 180 | 105 | 0 | 61 | 3.675 | X |

Table 4 shows that there is positive relation between area of residence of the respondents and the adaptability to technological growth in financial sector with the magnitude of 0.388. This shows that as the more urbanized is the region of location the more adaptable respondents are to technological growth

**TABLE 4: RELATION BETWEEN AREA OF RESIDENCE AND ADAPTABILITY TO FINANCIAL TECHNOLOGICAL GROWTH**

**X = Area of Residence Of Respondents**
**Y= Adaptability To Growth In Financial Technology**

| PARTICULARS | | Y | | | | | |
|---|---|---|---|---|---|---|---|
| | | *S.A* | *A* | *N* | *D* | *S.D* | *TOTAL* |
| X | Urban | 60 | 30 | 0 | 7 | 0 | 97 |
| | Rural | 12 | 8 | 0 | 0 | 0 | 20 |
| | Semi urban | 8 | 33 | 0 | 2 | 43 | 43 |
| | total | 80 | 71 | 0 | 9 | 0 | 160 |

*Correlation Coefficient Method*

Where, S.A -Strongly Agree, A-Agree-Neutral-Disagree, S.D-Strongly Disagree

**Correlation Coefficient R = 0.338**

Table 5 shows that there is no significant relation between educational qualification of the respondents and their agreement that cashless payment method will be the primary method of payment in the future.

**TABLE 5: RELATION BETWEEN EDUCATIONAL QUALIFICATION AND AGREEMENT AS PRIMARY METHOD OF PAYMENT IN FUTURE**

| PARTICULARS | | Y | | | |
|---|---|---|---|---|---|
| | | *Yes* | *No* | *Maybe* | *TOTAL* |
| X | Under graduate | 48 | 9 | 3 | 60 |
| | Post Graduate | 69 | 16 | 4 | 89 |
| | Semi-Urban | 5 | 6 | 0 | 11 |
| | TOTAL | 122 | 31 | 7 | 160 |

*Chi-square Method*

Chi-square Value = 9.261;

Degree of Freedom = 4;Alpha = 0.05

Critical Value = 9.49

**FINDINGS AND SUGGESTIONS**

The study shows that the awareness among the consumers about different modes of cashless payment methods is uneven. The consumers are more familiar with only few methods like debit card, credit card and cheque and are not much aware about modes like Aadhar Enabled Payment Systems, Cryptocurrency and Unstructured Supplementary Service Data. Also it has been found that

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ISBN: 978-93-340-1483-9
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consumers prefer to use debit card the most followed by net banking. From the study it can be understood that most of the consumers have faced issues while making use of cashless payment methods. And majority have stated that it was because of the transaction error caused by network problems. The study also has shown that the consumers feel forced to used cashless methods due to factors such as unavailability of other modes of payment, restrictions made by government and the need to be updated with technology. The majority of respondents have also expressed that they like cashless method for the convenience that it offers. A large portion of the respondents believe that cashless payment methods will contribute to a greener society. It is recommended that the education about the different methods of cashless payment must start from educational systems. Unstructured Supplementary Service Data is a very good choice for people without smart phones. Service organizations must help the illiterate non smart phone holders about this service so that they have ease of accessibility to their money. Banks must also be encouraged to play a major role in communicating the new financial advancements to people, particularly in the rural region.

**CONCLUSION**

India is traditionally a cash-based society with about 884 million rural population. According to Socio Economic and Caste Census(2011) 64% of the rural population have not completed even their primary school. To educate this population about cashless society is difficult. Therefore for the vision of the government to be successful special attention must be paid to this rural population so that they can cope up with the pace of growth as well. It is an undeniable fact that cashless payment methods will be more prevalent in the coming years and therefore it essential for the country to tackle two of the major issues that the Indian society faces in this system, namely, cyber fraud and internet accessibility. Government must also conduct a financial literacy campaign from time to time to help them.

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IC- TSI 2024
ISBN: 978-93-340-1483-9
29th February 2024

# "The influence of Fintech on the efficiency of private and public sector banks in India"

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**ABSTRACT**

**Fintech, the amalgamation of finance and technology, offers an alternative perspective on financial services and banking-related activities. In the realm of finance, FinTech represents a rapidly evolving and enhanced framework. This paper primarily aims to investigate the influence of fintech on the operational efficiency of both private and public sector banks in India. This paper delves into the fintech offerings provided by Indian banks and the evolution of current financial technologies. It also provides an overview of the historical development of Fintech and the significant markets it encompasses, along with their growth trajectories. The burgeoning pace of fintech services is not confined to India alone but extends globally. Anticipated as transformative, these services are poised to reshape the norms and practices within the financial sector in India and beyond.**

**Keywords: Financial Technology, Fintech, Internal Indicators, banks, profitability, Fintech development,**

## INTRODUCTION

The chance to transform the landscape, offering customers a broader array of financial products at competitive rates, and aiding financial institutions in enhancing their efficiency. the rapid and transformative changes brought about by fintech necessitate scrutiny and assessment, ensuring regulatory bodies and the general public remain abreast of mainstream technologies and business trends. this paper provides a concise exploration of the sector, delving into its expansion, characteristics, and diverse driving influences within both the indian and global markets. in order to foster a sustainable entrepreneurial ecosystem, fintech needs to navigate the digital landscape and facilitate equitable and extensive customer involvement. (source: www.rbi.org.in.)

The inception of the contemporary banking system in india traces its roots to the latter part of the 18th century. over the course of the struggle for independence from colonial rule, the subsequent nationalization efforts, and the attainment of freedom, fintech technology has undergone significant transformations spanning the past two centuries. in the 21st century, propelled by technological advancements and governmental initiatives such as upi, coupled with the burgeoning fintech industry, india's banking landscape has emerged as a focal point on the global stage. notably, a may 2019 report by pwc and assocham revealed that india boasts the second-highest fintech adoption rate in the world, standing at an impressive 57.9% (agarwal, m., and staff, i, 2019).

## Literature Review

Srinivasan. K., and Rajarajeswari. S. (2021) This paper endeavors to engage in discussions surrounding pivotal themes such as the intersection of technology and trade, the limitations of conventional financial services, and the role of labor in technological development. Additionally, the article delves into the intricacies of fintech reserves and explores their consequential implications.

It explores challenges within financial technology, encompassing aspects like investment management, client services, and regulatory frameworks. The thesis examines the evolution of fintech on the global stage during the specified period. (Kandpal, V., and Mehrotra, R., 2019)

The prevalence of cashless transactions is on a continuous rise, aligning with the expansion of the global market and advancements in the banking sector. As the financial landscape evolves, an increasing number of individuals are transitioning from cash to non-cash transactions. The shift towards a cashless system is not just a natural progression but a necessity in the present order. In recent years, endeavors to broaden India's financial reach have resulted in diverse outcomes. Stricter policies and regulations have significantly enhanced access to bank accounts.

Raj, B., and Upadhyay, V. (2020) The term "fintech" originates from the combination of "financial" and "technical." In a broader context, it can be described as the convergence of technology and finance, resulting in innovative solutions that introduce new business models, processes, products, or applications with substantial implications for the administration of financial markets, services, and institutions.

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Vijai, C. (2019) Fintech, an abbreviation for financial technology, encompasses a diverse range of outcomes applicable to both banking and non-banking financial services. Representing a relatively novel concept in the financial industry, this paper aims to delve into the challenges and opportunities within the fintech sector. It elucidates the shifts occurring in the financial technology market and examines the impact of modern financial technologies (fintech) on the Indian financial sector.

M, C. S., & R, K. (2019) The advent of the Internet in the 1990s and 21st century has disrupted or dismantled numerous major industries. Consider industries entirely overhauled by online systems or street fashion stores eclipsed by online retailers. Surprisingly, even the financial sector, which might have seemed impervious to transformation, has proven that assumption wrong. It is undergoing changes at a pace faster than any other business sector today.

Chugh, B. (2020) This article aims to unravel the genesis of Fintech in India. In its exploration, the article begins by examining the prevalent fintech features embraced by consumers in the country. Finetech categorizes 14 types of businesses encountered by consumers in India, mirroring the diversity of fintech enterprises present in the Indian landscape. The subsequent analysis delves into the intricacies of these 14 businesses and their significance in the fintech sector in India.

Pant, S. K. (2021) In simple terms, fintech leverages cutting-edge technology to deliver banking and financial solutions to businesses and individuals alike. This sector stands out as one of the fastest-growing in both developed and developing nations, with India securing a position among the top three fintech startups globally. Fintech companies harness advanced technologies such as big data, cryptocurrency, artificial intelligence, blockchain, machine learning, data analysis, robotics, and cloud computing to develop innovative products. The integration of broadband services by telecommunications providers, both domestically and internationally, has become a crucial infrastructure component facilitating the expansion of fintech. This article explores the dynamic landscape of fintech, shedding light on its technological foundations and India's prominent role in this transformative industry.

Guild, J. (2017) The infusion of new technology into the financial services industry, commonly referred to as Fintech, has garnered substantial investment capital in recent years, amounting to billions of dollars. Noteworthy examples of Fintech innovations include digital money transfer services in India and Kenya, as well as peer-to-peer credit platforms in China. The success of these initiatives, when aligned with supportive government policies and procedures, has enabled the provision of financial assistance to hundreds of millions of customers, establishing a novel foundation for financial management. This article delves into the transformative impact of Fintech innovations, exploring their investment landscape and highlighting key examples that have reshaped financial services on a global scale.

Objective:

To assess the potential impact of Fintech on the profitability of both public sector and private sector banks.

Scope & Technology:

The expanding influence of Fintech has compelled banks to undergo operational transformations and confront formidable competition from both financial and non-financial entities providing cost-effective financial services. This necessitates financial institutions to strategically invest in Fintech resources, ensuring the delivery of high-quality services and innovative products aligned with customer-centric missions and visions. This proactive approach not only facilitates the enhancement of business capabilities for emerging startups and banks with fundamental requirements but also mandates the continual renewal and reorganization of each financial entity to effectively meet and contend with evolving market demands.

Source of Data:

The data utilized in this study has been acquired from previously collected sources and has undergone rigorous statistical analysis. Various secondary sources, including newspapers, publications, magazines, books, the internet, reports, and journals, were consulted to gather comprehensive information for the research. This approach ensures a diverse and well-informed foundation for the study, drawing insights from a range of reputable outlets and contributing to the depth and reliability of the gathered data

Research Hypothesis:

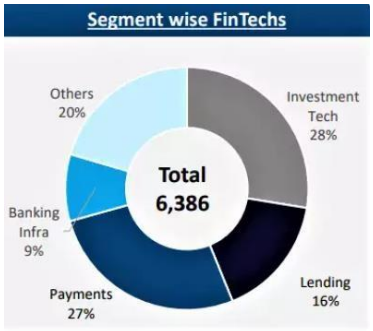
(H0): There is no impact of Fintech on the profitability of the chosen public sector and private sector banks.

Fintech:

Fintech, short for Financial Technology, denotes the utilization of technology within the financial sector to enhance and streamline services for its clientele. In simpler terms, Fintech represents the amalgamation of financial and technological expertise, fostering mutual benefits for both domains. Over the years, Fintech has been the driving force behind various technological advancements in the financial market, spanning from ATMs to commodities.

This integration has revolutionized financial transactions, enabling individuals to access cash without a visit to the bank, make purchases without the need for physical currency, or invest in company shares without cumbersome paperwork. Such innovations have facilitated seamless financial interactions, allowing individuals to transact with a simple click on their mobile phones, exemplifying the transformative impact of Fintech on modern finance.

Segment wise Fintech Industry



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ISBN: 978-93-340-1483-9
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Source: (https://bfsi.economictimes.indiatimes.com/)

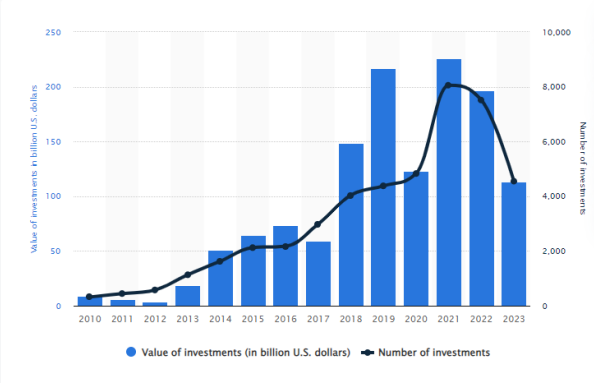
Global Fintech Market Size:

The global fintech market achieved an estimated value of $111,240.5 million in 2019, registering a compound annual growth rate (CAGR) of 7.9% from 2015. It is projected to continue its upward trajectory with an anticipated annual growth rate (CAGR) of 9.2%, reaching $158,014.3 million by 2023. Further expansion is expected, with the market reaching $191,840.2 million at a CAGR of 10.2% in 2025 and reaching $325,311.8 million at a CAGR of 11.1% by 2030. This robust growth underscores the dynamic evolution and increasing significance of the global fintech landscape over the coming years.

Historical progress was shaped by the evolution of emerging markets, heightened investment in fintech startups, increased internet accessibility, and growing managed revenues. Factors impeding growth during this period included stringent government regulations and limited interpersonal communication. Looking ahead, the surge in digital payment popularity is anticipated, propelled by investments in blockchain technology improving data management capabilities, substantial e-commerce growth, and the expected post-COVID-19 market stimulation.

While these trends are promising, concerns about consumer data security loom large, posing a potential obstacle to the future growth of the fintech market. Addressing these security challenges will be crucial for the sustained development of the industry.

Global Fintech Investment



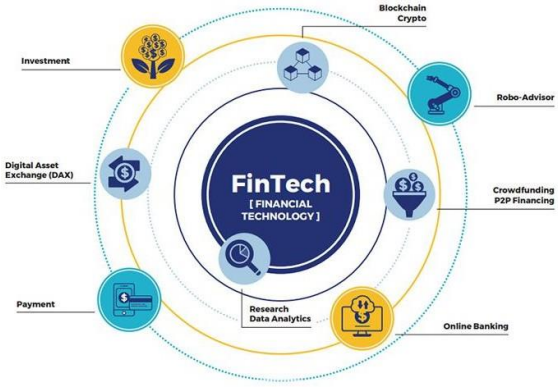

(Source: https://www.statista.com/statistics/719385)

Fintech Industry in India:

The Fintech industry is poised for substantial growth, projected to increase from $150 billion to $160 billion by 2025. This surge represents an added value potential of around $100 billion. To achieve this ambition, the Indian fintech sector is anticipated to require an investment ranging between $20 billion to $25 billion over the next five years. The dynamic landscape of the Indian fintech industry boasts over 2,100 players, with a remarkable 67% of them emerging within the last five years. The cumulative value of this sector is estimated to be in the range of $50-60 billion.

Notably, the industry has demonstrated resilience, remaining unaffected by recent epidemics. Instead, it has witnessed the emergence of three new unicorns and five Soon corns (startups with an estimated value of $500 million or more) since January 2020. PrateekRoongta, CEO of Boston Consulting Group India, expressed confidence in the potential of the Indian Fintech sector, stating, "We believe Indian Fintech is positioned at the epicenter, poised to create $100 billion in value over the next five years." This optimistic outlook suggests that the number of Indian Fintech unicorns is expected to more than double in the coming years.

Structure of Fintech Industry




(Source: https://www.apu.edu.my/fintech)

India's Fintech Startup:

The emergence of fintech startups has brought about profound transformations in our economy, particularly revolutionizing the way we conduct transactions. The payment landscape is undergoing a revolutionary shift, influencing the dynamics of business operations for everyone involved. Numerous fintech companies have garnered attention in the financial industry, introducing exclusive financial solutions as they expand into diverse markets. These companies are not only altering the way we pay but also shaping the future of financial transactions on a global scale. Let's explore some of these trailblazing fintech firms that are making headlines with their innovative contributions to the evolving financial landscape.

As per a study conducted by Medici in July, the landscape of Indian technology startups encompasses various sectors, with 405 companies dedicated to payments, 365 focusing on loans, 313 in wealth technology, 173 in personal finance management, 111 in insurance technology, and 58 in cybersecurity. The geographical concentration of these startups reveals that the majority are situated in Bangalore (447) and Bombay (437), collectively constituting 40.6% of the headquarters of fintech startups across the country. This data highlights the significant presence of fintech innovation in these key Indian cities, showcasing their prominence in fostering technological advancements in diverse financial domains.

Fintech Hubs top ten cities of India

IC- TSI 2024
ISBN: 978-93-340-1483-9
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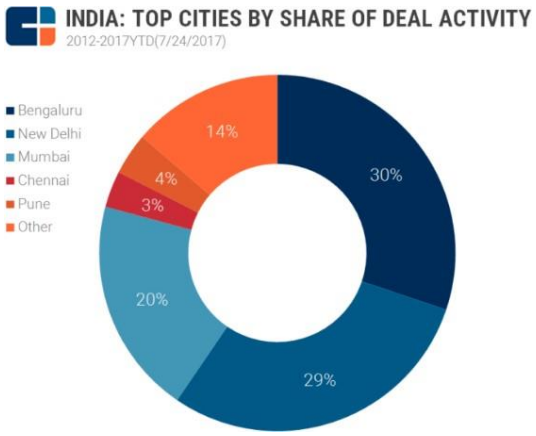



Active Areas of Fintech Innovation:

Exploring the realm of digital currencies and cryptocurrencies.

Investigating blockchain technology, a decentralized system that maintains records across a computer network without relying on a central ledger.

Delving into the world of smart contracts, where computer software, frequently leveraging blockchain technology, autonomously executes agreements between buyers and sellers.

Exploring the concept of Open Banking, a blockchain-driven idea where third parties are granted access to banking information to develop applications fostering a network connecting financial institutions and third-party service providers.

Delving into Insurtech, a movement dedicated to leveraging technology to simplify and streamline processes within the insurance industry.

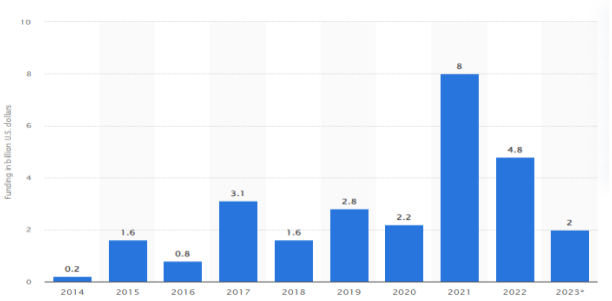
Exploring Regtech, a sector dedicated to assisting financial services companies in adhering to industry compliance regulations, with a particular focus on anti-money laundering and related protocols.

Delving into the interconnected landscape of cybersecurity, cybercrime, and decentralized storage, where the realms of cybersecurity and financial technology are intricately woven together. Explore how these elements converge and influence each other in the modern digital landscape.

Collaboration Between Fintech & Banks:

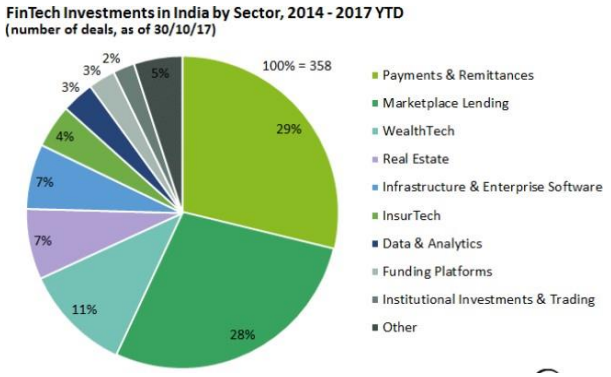
Exploring the impact of digital technology, big data, and analytics on the financial services industry, a recent report by McKinsey suggests that despite the transformative effects, investors foresee fintech startups becoming increasingly influential. The dawn of fintech players initially posed a challenge to traditional banks, but over time, banks have recognized the value in collaborating with these startups to enhance their existing systems, fostering smoother processes for an enhanced consumer experience. This collaboration has not only made banks more adaptable in their early stages but also led to a convergence of services, facilitated by data analytics, allowing various financial service providers to deliver products and services through an open and interconnected framework. The evolving landscape suggests a future where the synergy between traditional financial institutions and fintech entities plays a pivotal role in shaping the industry.

Table A: Funding value of fintech startups in India from 2014 to 2023




(Source: https://www.statista.com/statistics/1373398)

Sector wise fintech business models in India




(Source: https://www.researchgate.net/figure/Fintech)

Optimal Blend of Incentives, Policies, and Regulations:

Reserve Bank of India:

The Reserve Bank of India (RBI) has actively promoted the adoption of the Unified Payment Interface (UPI) and the Bharat Bill system in the country. Moreover, it has endorsed the utilization of automated algorithms for digital payments, peer-to-peer (P2P) loans, and financial advice. Expanding its support, the RBI has granted licenses to 11 fintech companies to establish payment banks, allowing them to offer a range of services, including savings, deposits, and payment services. This proactive approach by the RBI reflects a commitment to fostering innovation and expanding financial services through strategic partnerships with fintech entities.

Government Schemes:

Government-led initiatives like Jan DhanYojana, Digital India Program, and the National Payments Council of India (NPCI) have become crucial platforms for tech innovators. Additional efforts include abolishing e-commerce premiums,

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ISBN: 978-93-340-1483-9
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offering tax exemptions for electronic payments, and easing validation requirements. These measures reflect the government's commitment to fostering rapid growth in India's fintech ecosystem.

Fintech Startup Sector:

The robust regulatory environment stands as a significant catalyst for the growth of fintech ventures in India. In 2018 alone, more than 125 fintech startups were launched, underscoring the industry's dynamic expansion. Notably, both national and international banks, along with investment groups, are actively investing in and financing fintech solutions within the Indian market, further fueling the sector's momentum.

Image D: Regulatory Bodies in India


(Source: https://kuvera.in/blog/financial)

Impact of Fintech on Banking Sector:

Loans:

Fintech has revolutionized the banking landscape, creating vast opportunities in the lending market. The adoption of fintech loans has become easily attainable, with innovative models catering to both business and personal needs. These organizations prioritize enhancing customer experience, ensuring efficient cash flow, and expediting loan approval processes.

Payment Services:

Fintech plays a pivotal role in reshaping payment services. Online installment payments, tailored to merchant accounts, web usage, or mobile phone bills, have become prevalent. Direct transfers to cash balances streamline transactions, minimizing discrepancies in exchange rates and mitigating counterfeit risks.

Wealth Management:

With the rise of technology, the way people save money, control resources and contribute capital is evolving. Using new monetary innovations, these organizations intend to provide redesigned mechanisms to combat their own wealth and business. Fintech programmer further helps in contrasting different choice and preparing the best speculative plans for a single budget.

Remittance Transfers:

Remittance transfers have long been characterized by high costs and complexity for individuals and banks. Fintech companies are striving to simplify and make these inbound and outbound transactions more essential and cost-effective over time.

Insurance Services:

Securing insurance has become a more straightforward process in contemporary times. With revamped plans, every aspect can now be handled online, from engaging with programs to handling periodic billing. Technological advancements have significantly transformed and streamlined the entire insurance service landscape.

Equity-Funding:

Equity funding has been revolutionized by technology, enabling new project enterprises and businesses to raise capital from a large number of people. This crowdfunding approach has transformed the traditional methods of capital acquisition.

Fintech Challenges:

Addressing security concerns and safeguarding data privacy

Integrating Big Data and Artificial Intelligence effectively

Implementing blockchain technology seamlessly

Overcoming the shortage of mobile and technological expertise

Ensuring compliance with state regulations

Tackling growth challenges and implementing effective marketing strategies to acquire customers

Prioritizing customer retention and addressing user experience issues

Future of Fintech in India:

The future of fintech in India is promising, with the country emerging as a key player in financial technology development. The ongoing financial innovation is reshaping the landscape for Indian citizens, positioning the nation as a leader in the tech industry. In the era of "Digital India," fintech organizations are poised to discover numerous endorsement opportunities. The government's initiatives, such as the 'Jan DhanYojana,' aim to provide every citizen with a bank account, fostering financial inclusion. Additionally, to incentivize electronic payments, merchants are offered various discounts. The digitalization of banks is set to make fintech innovation the future of India's banking and financial sector.

Conclusion:

The future of Indian Fintech is expansive, encompassing both vertical and horizontal growth. Promotion aims at increasing accessibility of existing technologies to a wider audience, while rising growth involves introducing new avenues for individuals to trade, donate, allocate funds, and manage their finances. This dual-pronged approach is expected to propel India on a robust financial development journey, unlocking significant advancements in various financial sectors.

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IC-TSI 2024
ISBN: 978-93-340-1483-9
29th February 2024

# DIGITAL COMMERCE TRANSFORMATION

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***Abstract:***

**The Evolution of Commerce: Navigating Digital Transformation in the dynamic landscape of business, the concept of commerce has undergone a profound transformation with the advent of digital technologies. This shift, often referred to as digital commerce transformation, represents a revolutionary journey that organizations must embark on to remain competitive in an increasingly interconnected and technology-driven world. The twenty-first century has witnessed an unprecedented surge in digital innovations, reshaping the way we conduct transactions and redefine commerce. Digital commerce, or e-commerce, goes beyond mere online shopping. It encapsulates the integration of digital technologies into all aspects of business, from marketing and sales to supply chain management. The journey of Digital commerce transformation is not just a response to technological advancements but Strategic imperative for businesses seeking longevity and relevance. The Key Trends Shaping Digital Commerce One of the cornerstones of digital commerce transformation lies in understanding and embracing Key trends that dictate consumer behavior and market dynamics. Artificial Intelligence (Al) is at the forefront, driving personalized experiences by analyzing vast datasets to predict and cater to individual preferences. Mobile commerce, with the ubiquity of smart phones, has become a dominant force, blurring the lines between online and offline shopping experiences. Omni channel Strategies have emerged as a necessity, offering consumers a seamless transition between physical and digital touch points.**

**KEYWORDS :**

**Digital Revolution, challenges, reimagining ecosystems, future horizons.**

## INTRODUCTION

Commerce, once confined to brick-and-mortar stores, has taken a remarkable leap into the digital realm. This shift, known as digital commerce transformation, is not just trend; it'a game-changer.

Let's take a simple journey into

the world of digital commerce transformation. The Digital Revolution: From Stores to Screens not long ago, shopping meant going to a physical store, but now, it happens with just a click. Digital commerce is like bringing the entire marketplace to your fingertips. From clothes to gadgets, everything is available online. This shift is not just about shopping on the internet; it's about how businesses use technology to make our shopping experiences better.

## STRATEGIC SHIFTS FOR DIGITAL COMMERCE TRANSFORMATION:

Digital commerce transformation requires a strategic overhaul, encompassing various facets of a business. Cloud-based solutions are instrumental in providing scalable and flexible infrastructures, enabling businesses to adapt swiftly to changing demands. The integration of AI and machine learning enhances the customer journey through personalized recommendations and targeted marketing. Cyber security becomes paramount, safeguarding sensitive customer data and fostering trust. Adopting an omnichannel approach ensures a cohesive and synchronized experience for consumers, irrespective of the platform or device they choose**.**

## OVERCOMING CHALLENGES:

While the benefits of digital commerce transformation are immense, organizations often face challenges in navigating this complex journey. Legacy systems pose a hurdle, necessitating a delicate balance between maintaining existing infrastructure and embracing new technologies. Data security concerns demand robust measures to protect customer information and build confidence. Skill gaps within organizations highlight the need for continuous training and up skilling to harness the full potential of digital tools. But, wait – not everything is as easy as it sounds. Some businesses have old systems that don't speak the same language as new ones. It's like trying to use a cassette player in a world of streaming services. That's a challenge, but businesses are learning to balance the old with the new. And just like you lock your door to keep your room safe, businesses use special tools for cyber security to keep all the digital information safe from 'bad guys.'

## REIMAGININGE-COMMERCE ECOSYSTEMS

The COVID-19 pandemic has fundamentally changed consumer behavior, with an accelerated shift to shopping online. What should wholesalers and retailers consider when adapting their e-commerce ecosystems and supply chains in the "new normal?" Explore the seven key areas essential to successful digital commerce transformation. Stores are open, but customers are still online, Relaxed restrictions and a pent-up desire to shop for pleasure has increased consumer intent to purchase apparel, footwear, and other nonessential products. However, for the foreseeable future, customers will continue to shop online more frequently. What's causing the ongoing shift? Consumers have become comfortable purchasing additional product categories online. Online grocery shopping tripled during the pandemic.

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ISBN: 978-93-340-1483-9
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Expanded online assortments and new promotional tactics have encouraged customers to start their journeys online. Despite distancing and safety measures, almost half of consumers surveyed by Deloitte in August 2020 did not feel safe shopping in a brick-and-mortar store. Limited stock and selection in-store is driving consumers online, despite delivery costs and delays. Forty-two percent of consumers are willing to pay for convenience.

DIGITAL COMMERCE PROS :

Digital commerce transformation comes with a myriad of advantages, offering businesses and consumers alike a range of benefits. Here are some of the key pros of digital commerce transformation:

1. Global Reach:

Increased Market Access: Digital commerce breaks down geographical barriers, allowing businesses to reach a global audience. This opens up new markets and customer segments that were previously inaccessible through traditional brick-and-mortar channels.

2.Convenience and Accessibility:

24/7 Availability: Digital commerce operates round the clock, providing customers the convenience to shop at any time, irrespective

of traditional business hours. Accessible Anywhere: With mobile commerce, customers can make purchases on the go, enhancing the accessibility and flexibility of the shopping experience.

3.Personalization and Customer Experience:

AI-Driven Personalization: Artificial Intelligence enables businesses to analyze customer data and provide personalized recommendations, creating a more tailored and engaging shopping experience. Enhanced Customer Engagement: Digital platforms offer various tools, such as live chat and social media integration, fostering direct and immediate communication between businesses and customers.

4.Cost Savings:

Reduced Overheads: Digital commerce eliminates the need for physical storefronts, reducing expenses related to rent, utilities, and staffing.

Targeted Marketing: Online marketing campaigns can be more precisely targeted, minimizing wasted resources on reaching irrelevant audiences.

5.Data-Driven Insights:

Analytics and Reporting: Digital platforms generate extensive data that businesses can analyze to gain insights into customer behavior, preferences, and trends. This data-driven approach enables informed decision-making. Real-Time Monitoring: Businesses can monitor online activities in real-time, allowing for quick adjustments and responses to market changes.

6.Flexibility and Scalability:

Adaptability to Change: Digital commerce platforms are adaptable to changes in market trends, consumer behavior, and technology. Businesses can quickly adjust their strategies to stay relevant.

Scalability: Digital platforms can easily scale to accommodate growing business needs without significant infrastructure changes, supporting business expansion.

7.Competitive Advantage:

Differentiation: Embracing digital commerce transformation can set businesses apart from competitors, demonstrating a commitment to innovation and customer-centricity.

Agility: Digital-native businesses can respond rapidly to market changes, gaining a competitive edge over those still reliant on traditional models.

FUTURE HORIZONS :

As we stand at the intersection of the present and the future, it is crucial to anticipate the next wave of digital commerce evolution. Emerging technologies such as augmented reality, block chain, and the Internet of Things are poised to redefine the landscape once again. To stay ahead, businesses must cultivate a culture of innovation, encouraging experimentation and adaptation. Continuous monitoring of industry trends and customer preferences will be integral to making informed decisions. The digital world is always changing. Think about how cool it would be to try on clothes without going to the store – that's where augmented reality might come in. And what if you could be sure where your food comes from? Block chain technology might help with that. The future is full of exciting possibilities, and businesses need to keep learning and trying new things to stay ahead.

CONCLUSION :

In conclusion, digital commerce transformation is not a one-time event but an ongoing process. It is a journey that demands agility, innovation, and a keen understanding of the evolving digital landscape. Organizations that embrace this transformation with a strategic mind set and a commitment to customer-centricity are poised not just to survive but to thrive in the digital age. As the digital revolution continues to unfold, the businesses that lead the way in digital commerce transformation will shape the future of commerce itself. Digital commerce transformation is like upgrading from a flip phone to a Smartphone for businesses. They're using cool tech to understands better, make shopping easier, and keep everything safe. As we tag along on this digital adventure, we can expect more surprises, innovations, and maybe even a few digital shopping wonders in the future. So, buckle up, because the world of digital commerce is changing, and we're all part of this exciting journey.

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IC- TSI 2024
ISBN : 978-93-340-1483-9
29th February 2024

# E-Commerce and Environmental Impact

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**Abstract**

**The rapid growth of e-commerce has revolutionized the way we shop and conduct business, offering convenience and accessibility to consumers worldwide. However, this digital transformation has also brought significant environmental challenges, raising concerns about its sustainability. This paper examines the environmental impact of e-commerce operations, focusing on energy consumption, carbon emissions, and waste generation. Despite these challenges, there are opportunities for mitigating the environmental footprint of e-commerce through innovative solutions such as green logistics, sustainable packaging, and renewable energy adoption. By addressing these challenges, e-commerce can contribute to economic, social, and environmental sustainability. Through case studies and examples, this paper highlights successful initiatives and identifies key recommendations for policymakers, businesses, and consumers to promote sustainability in e-commerce. Collaboration between stakeholders is essential to overcome the challenges and seize the opportunities in making e-commerce more sustainable for future generations.**

**Keywords:**
**E-commerce, Traditional Retailing, Transportation, Packaging, Environment, Sustainability**

## INTRODUCTION

The advent of e-commerce has ushered in a new era of convenience, transforming the way we shop and do business. With just a few clicks, consumers can access a vast array of products and services, anytime and anywhere. This digital revolution has not only reshaped traditional retail landscapes but has also profoundly impacted our environment, raising critical questions about sustainability. In this paper, we delve into the environmental ramifications of e-commerce and its implications for sustainability. While e-commerce offers unparalleled convenience and accessibility, its exponential growth has resulted in significant energy consumption, carbon emissions, and waste generation. From the vast data centres powering online platforms to the fleets of delivery vehicles crisscrossing our streets, the environmental footprint of e-commerce is undeniable.Yet, amidst these challenges lie opportunities for innovation and change. Through the adoption of green logistics, sustainable packaging solutions, and the integration of renewable energy sources, e-commerce can pave the way towards a more sustainable future. By leveraging technology and embracing sustainable practices, businesses can not only mitigate their environmental impact but also drive economic and social sustainability. Throughout this paper, we will explore the multifaceted relationship between e-commerce and sustainability, examining the economic, social, and environmental dimensions of this complex issue. Through case studies, examples, and analysis, we aim to shed light on both the challenges and opportunities inherent in making e-commerce more sustainable. As we navigate the intersection of commerce and environmental stewardship, it becomes increasingly clear that collaboration and collective action are paramount. Policymakers, businesses, consumers, and other stakeholders must work together to forge a path towards a more sustainable e-commerce ecosystem. Only by recognizing the interconnectedness of our actions and embracing a shared commitment to sustainability can we ensure a thriving planet for generations to come.

**Challenges:**

**Energy Consumption:**

The energy-intensive nature of data centers and warehouses powering e-commerce platforms poses a significant challenge. These facilities require substantial amounts of electricity to operate, contributing to carbon emissions and environmental strain.

**Carbon Emissions:**

E-commerce logistics, including transportation and delivery, are major contributors to carbon emissions. The last-mile delivery, in particular, involves multiple trips to individual households, resulting in increased emissions and traffic congestion.

**Waste Generation:**

IC- TSI 2024
ISBN : 978-93-340-1483-9
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The packaging materials used in e-commerce, such as cardboard boxes and plastic wrap, contribute to waste generation and environmental pollution. Additionally, product returns further exacerbate the problem, leading to additional waste and disposal challenges.

**Supply Chain Complexity**:

E-commerce supply chains are often complex and fragmented, involving multiple stages of production, transportation, and distribution. Managing and optimizing these supply chains to minimize environmental impact presents a significant challenge**.**

**Opportunities:**

**Green Logistics**:
Implementing sustainable transportation practices, such as route optimization, vehicle electrification, and alternative fuel adoption, can reduce carbon emissions associated with e-commerce logistics**.**

**Sustainable Packaging:**
Investing in eco-friendly packaging materials, such as biodegradable or recyclable alternatives, can help minimize waste generation and environmental pollution.

**Renewable Energy Adoption**:
Transitioning to renewable energy sources, such as solar or wind power, for powering data centers and warehouses can reduce the carbon footprint of e-commerce operations.

**Circular Economy Initiatives**:
Embracing circular economy principles, such as product reuse, recycling, and refurbishment, can help minimize resource consumption and waste generation throughout the e-commerce lifecycle.

**Consumer Awareness and Behavior Change**:
Educating consumers about the environmental impact of their purchasing decisions and promoting sustainable consumption habits can drive demand for eco-friendly products and services, encouraging businesses to adopt more sustainable practices**.**

By addressing these challenges and seizing opportunities for innovation and change, e-commerce can transition towards a more sustainable model that minimizes environmental impact while continuing to meet consumer demands for convenience and accessibility. Collaboration between businesses, policymakers, and consumers is essential to drive meaningful progress towards a greener and more sustainable e-commerce ecosystem.

**Implications for Sustainability:**

**Environmental Sustainability**:

Addressing the environmental impact of e-commerce is crucial for overall sustainability. By reducing energy consumption, carbon emissions, and waste generation, e-commerce can contribute to environmental conservation and mitigate its ecological footprint. Sustainable practices such as green logistics, renewable energy adoption, and circular economy initiatives can help minimize environmental degradation and preserve natural resources for future generations.

**Economic Sustainability:**

Sustainable e-commerce practices can also have positive implications for economic sustainability. By optimizing supply chain efficiency and reducing operational costs through energy savings and waste reduction, businesses can improve their bottom line and enhance long-term profitability. Moreover, investing in sustainable innovation and technology can drive economic growth and create new opportunities for green jobs and industries.

**Social Sustainability**:

The social implications of e-commerce sustainability extend to various stakeholders, including workers, communities, and consumers. Ensuring fair labour practices, safe working conditions, and equitable distribution of economic benefits within the e-commerce supply chain is essential for social sustainability. Moreover, fostering community engagement and supporting local economies can enhance social cohesion and well-being.

**Consumer Behavior:**

Sustainable e-commerce practices can also influence consumer behaviour and purchasing decisions. Increasing consumer awareness about the environmental impact of e-commerce and providing transparent information about product sustainability can empower consumers to make more informed choices. By supporting eco-friendly brands and products, consumers can drive demand for sustainable solutions and incentivize businesses to adopt more environmentally responsible practices.

**Regulatory Compliance:** The implications of sustainability for e-commerce extend to regulatory compliance and governance. Governments and regulatory bodies may implement policies and regulations to promote environmental sustainability in e-commerce, such as emissions standards, waste management regulations, and green labeling requirements. Compliance with these regulations is essential for businesses to operate ethically and sustainably in the long term. Overall, embracing sustainability in e-commerce is not only essential for mitigating environmental impact but also for fostering economic prosperity, social equity, and consumer trust. By considering the implications of sustainability across environmental, economic, social, and regulatory dimensions, e-commerce can transition towards a more sustainable and resilient future. Collaboration between stakeholders, including businesses, governments, civil society, and consumers, is crucial for driving meaningful progress towards sustainable e-commerce practices.

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ISBN : 978-93-340-1483-9
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**Traditional Retailing:**

Traditional retailing refers to the conventional method of selling goods and services through physical brick-and-mortar stores, as opposed to online or e-commerce platforms. In traditional retailing, customers visit stores in person to browse products, make purchases, and interact with sales representatives. This form of retailing has been the dominant model for centuries and remains a significant part of the global economy, despite the rise of e-commerce.

**Characteristics of Traditional Retailing:**

**Physical stores:**

Traditional retailing relies on physical storefronts or shops located in commercial areas such as shopping malls, main streets, or city centres. These stores provide a tangible shopping experience for customers, allowing them to see, touch, and try onproducts before making a purchase.

**Personal Interaction**:

Traditional retailing emphasizes personal interaction between customers and sales staff. In-store employees assist customers with product inquiries, offer recommendations, and provide customer service to enhance the shopping experience.

**3. Merchandising and Display**:

Traditional retailers use merchandising techniques to showcase products effectively and attract customers' attention. Visual displays, product placement, and store layout are carefully designed to optimize sales and create a pleasant shopping environment.

**4. Inventory Management:**

Traditional retailers manage physical inventory in their stores, warehouses, or distribution centres. Inventory levels are monitored to ensure adequate stock availability while minimizing excess inventory and carrying costs.

**5. Point-of-Sale Systems:**

Traditional retailers use point-of-sale (POS) systems to process transactions and manage sales data. These systems track sales, inventory levels, and customer information, facilitating efficient operations and decision-making.

**Case Studies and Examples**:

Amazon's Sustainability Initiatives:
Amazon, one of the world's largest e-commerce companies, has made significant strides in implementing sustainability measures across its operations. The company has committed to achieving net-zero carbon emissions by 2040 and aims to power its operations with 100% renewable energy by 2025. Amazon's initiatives include investments in renewable energy projects, electric delivery vehicles, and sustainable packaging innovations. The company's Climate Pledge aims to inspire other businesses to adopt ambitious sustainability goals.

Patagonia's Circular Economy Model:
Outdoor apparel retailer Patagonia has embraced a circular economy model, emphasizing product durability, repairability, and recycling. Patagonia offers a repair and reuse program, encouraging customers to repair their garments rather than discard them. The company also uses recycled materials in its products and has launched initiatives to reduce water and energy consumption in its supply chain. Patagonia's commitment to sustainability has earned it a loyal customer base and recognition as a leader in corporate environmental responsibility.

Alibaba's Green Logistics Initiative:
Chinese e-commerce giant Alibaba has launched a Green Logistics initiative to reduce carbon emissions and environmental impact across its supply chain. The company has implemented measures such as route optimization, vehicle electrification, and packaging optimization to minimize emissions from transportation and delivery. Alibaba's Cainiao Network has also invested in smart logistics technologies, including data analytics and AI, to improve efficiency and reduce resource consumption.

Etsy's Ethical Marketplace:
Online marketplace Etsy is known for its commitment to sustainability and ethical sourcing. The platform provides a platform for independent sellers to showcase handmade, vintage, and eco-friendly products. Etsy promotes sustainable practices such as using recycled materials, reducing waste, and supporting artisanal craftsmanship. The company also offsets carbon emissions from shipping and encourages sellers to participate in sustainability initiatives.

IKEA's Sustainable Supply Chain
: Furniture retailer IKEA has implemented sustainable practices throughout its supply chain, from sourcing raw materials to product design and distribution. IKEA aims to use 100% renewable or recycled materials in its products by 2030 and has invested in renewable energy projects to reduce its carbon footprint. The company also offers services such as furniture take-back and repair to promote circularity and reduce waste.

These case studies demonstrate how e-commerce companies can adopt innovative solutions and sustainable practices to minimize their environmental impact and contribute to sustainability. By prioritizing sustainability in their operations and supply chains, these companies consumers not only reduce their ecological footprint but also enhance their brand reputation, attract environmentally conscious, and drive long-term business success.

**Conclusion:**

IC- TSI 2024
ISBN : 978-93-340-1483-9
29th February 2024

The emergence of e-commerce has revolutionized the way we shop and conduct business, offering convenience and accessibility. However, it has also led to significant energy consumption, carbon emissions, and waste generation. The environmental footprint of e-commerce is undeniable, from the vast data centres powering online platforms to the fleets of delivery vehicles. Despite these challenges, there are opportunities for innovation and change. By adopting green logistics, sustainable packaging solutions, and integrating renewable energy sources, e-commerce can pave the way towards a more sustainable future. By leveraging technology and embracing sustainable practices, businesses can mitigate their environmental impact and drive economic and social sustainability. This paper explores the relationship between e-commerce and sustainability, examining the economic, social, and environmental dimensions of this complex issue. Through case studies, examples, and analysis, it aims to shed light on both the challenges and opportunities inherent in making e-commerce more sustainable. Collaboration and collective action are crucial as we navigate the intersection of commerce and environmental stewardship. Recognizing the interconnectedness of our actions and embracing a shared commitment to sustainability can ensure a thriving planet for generations to come.

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ISBN : 978-93-340-1483-9
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# ECO-ENTREPERNEURSHIP AND BUSINESS SUCCESS

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**Abstract**

**Eco-entrepreneurship is a growing trend that combines environmental stewardship and profitability, transforming the way businesses operate. It involves a commitment to sustainability through innovative business models, products, and practices that minimize ecological footprints while maximizing value creation. Eco-entrepreneurs differentiate themselves in the market by integrating environmental considerations into every aspect of their operations, appealing to a more conscientious consumer base and enhancing brand reputation. Efficiency and resource optimization are key drivers of eco-entrepreneurship success, as they adopt renewable energy, waste reduction strategies, and sustainable sourcing practices. Innovation is also a competitive advantage, as eco-entrepreneurs develop novel solutions to environmental challenges. However, the success of eco-entrepreneurship depends on a supportive ecosystem that fosters entrepreneurship, incentivizes sustainable practices, and facilitates market access. By embracing sustainability as a core value proposition, eco-entrepreneurs are driving innovation, fostering resilience, and shaping a more prosperous future for businesses and society.**

**Keywords:**

**Carbon emission, conduct business, sustainability, Eco-Entrepreneurship, Business Success, Eco-Friendly Products, Green Innovation.**

## INTRODUCTION

In the introduction section of your paper on eco-entrepreneurship and business success in sustainability, provide context and background information. Defining eco-entrepreneurship involves individuals establishing businesses focusing on addressing environmental issues while pursuing profit. Highlight the importance of eco-entrepreneurship in the context of pressing environmental challenges like climate change, pollution, and resource depletion. Emphasize how eco-entrepreneurship can contribute to sustainable development by fostering innovative solutions and responsible business practices. Introduce the concept of sustainability in business, highlighting its relevance in balancing economic, social, and environmental considerations in operations. State the purpose and objectives of your paper, such as exploring the role of eco-entrepreneurship in advancing sustainability goals, examining factors contributing to the success of sustainable businesses, and providing insights for practitioners and policymakers. Overview the structure of your paper, including a literature review, case studies of successful eco-entrepreneurs and sustainable businesses, analysis of key success factors and challenges, and recommendations for fostering business success in sustainability efforts. This clear introduction helps orient readers to the topic and prepares them for the in-depth exploration that follows in the rest of the paper.

## LITERATURE REVIEW

1. Define Key Concepts Begin by defining key terms and concepts related to eco-entrepreneurship and sustainability in business. This includes terms like green entrepreneurship, sustainable business models, corporate social responsibility (CSR), triple bottom line, etc.

2. Scope of the Review: Clarify the scope and focus of your literature review. You may choose to focus on specific aspects such as the drivers of eco-entrepreneurship, sustainable business practices, factors influencing success, or barriers and challenges faced by sustainable businesses.

3. Review of Relevant Studies: Summarize and critique relevant studies, academic articles, and reports on eco-entrepreneurship and sustainability in business. Discuss key findings, methodologies, and theoretical frameworks used in these studies.

4. Key Themes and Trends: Identify common themes, trends, and debates within the literature. This could

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ISBN : 978-93-340-1483-9
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include discussions on the motivations of eco-entrepreneurs, the adoption of sustainable business practices, the impact of regulatory frameworks, consumer attitudes towards sustainability, etc.

5. Empirical Evidence: Highlight empirical evidence supporting or challenging various theories and hypotheses related to eco-entrepreneurship and sustainable business success. This may include case studies, surveys, statistical analyses, and qualitative research findings.

6. Critical Analysis: Provide a critical analysis of the strengths and limitations of existing literature. Discuss gaps in the literature and areas where further research is needed to advance understanding in the field.

7. Theoretical Frameworks: Discuss relevant theoretical frameworks that have been applied to study eco-entrepreneurship and sustainability in business. This could include frameworks from economics, management, environmental studies, sociology, etc.

8. Synthesis and Integration: Synthesize the findings from the reviewed literature and integrate them into a coherent narrative. Identify overarching patterns, insights, and implications for theory and practice.

**Factors for success:**

1. Innovation and Creativity: Highlight the importance of innovation and creativity in eco-entrepreneurship and sustainable business. Successful ventures often develop novel products, services, or business models that address environmental challenges in unique ways, setting them apart from competitors.

2. Visionary Leadership: Discuss the role of visionary leadership in driving sustainability initiatives within businesses. Effective leaders inspire and motivate their teams, set clear sustainability goals, and allocate resources strategically to achieve those goals.

3. Strategic Partnerships and Collaboration: Explore the significance of forming strategic partnerships and collaborations with stakeholders such as suppliers, customers, NGOs, government agencies, and other businesses. Partnerships can provide access to resources, expertise, market opportunities, and regulatory support, enhancing the chances of success.

4. Stakeholder Engagement and Communication: Emphasize the importance of engaging with stakeholders, including employees, investors, communities, and the public, to build trust and support for sustainability initiatives. Transparent communication about environmental goals, progress, and challenges fosters accountability and buy-in from stakeholders.

5. Market Demand and Consumer Behaviour: Analyse the role of market demand and consumer behaviour in driving the adoption of sustainable products and services. Successful eco-entrepreneurs and sustainable businesses often leverage consumer preferences for environmentally friendly options, positioning themselves as ethical and responsible brands.

6. Access to Capital and Financial Resources: Discuss the challenges and opportunities related to accessing capital and financial resources for eco-entrepreneurs and sustainable businesses. Securing funding from investors, banks, grants, or crowd funding platforms is critical for scaling operations, investing in innovation, and weathering economic uncertainties.

7. Regulatory and Policy Support: Examine the impact of regulatory frameworks, government incentives, and supportive policies on the success of eco-entrepreneurship and sustainable business. Clear regulations, tax incentives, subsidies, and procurement preferences for sustainable products/services can create a conducive environment for growth and innovation.

8. Operational Efficiency and Cost Management: Highlight the importance of operational efficiency and cost management in achieving sustainability goals while maintaining competitiveness. Sustainable businesses optimize resource use, minimize waste, and adopt eco-efficient practices to reduce costs and enhance profitability.

9. Long-Term Vision and Resilience: Discuss the value of having a long-term vision and resilience in navigating challenges and uncertainties. Sustainable businesses prioritize long-term sustainability over short-term gains, demonstrating resilience in the face of economic, social, and environmental shocks.

**Challenges and barriers:**

1. Financial Constraints: Limited access to capital and funding is a significant challenge for eco-entrepreneurs and sustainable businesses. Developing sustainable products or implementing environmentally friendly practices may require upfront investments that some entrepreneurs may struggle to secure, especially if traditional lenders are hesitant to finance innovative or unproven ventures.

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ISBN : 978-93-340-1483-9
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2. Market Acceptance and Consumer Education: Lack of awareness or understanding among consumers about the benefits of sustainable products or services can pose a challenge for eco-entrepreneurs and sustainable businesses. Convincing consumers to prioritize sustainability and pay a premium for eco-friendly alternatives may require extensive education and marketing efforts.

3. Regulatory Compliance and Uncertainty: Navigating complex and evolving regulatory frameworks related to environmental protection, waste management, emissions reduction, etc., can be challenging for businesses, particularly smaller enterprises with limited resources for compliance. Regulatory uncertainty or inconsistency across jurisdictions can also create challenges for businesses trying to plan and implement sustainability initiatives.

4. Supply Chain Complexity and Transparency: Ensuring sustainability throughout the supply chain, from sourcing raw materials to manufacturing and distribution, can be challenging due to the complexity and opacity of supply chains. Identifying sustainable suppliers, verifying their practices, and ensuring compliance with ethical and environmental standards can pose logistical and operational challenges for businesses.

5. Technological and Infrastructure Limitations: Limited availability or high costs of sustainable technologies and infrastructure can be barriers for businesses seeking to adopt environmentally friendly practices. For example, renewable energy systems, waste recycling facilities, or sustainable transportation options may not be readily accessible or affordable in all regions, hindering businesses' ability to transition to sustainable practices.

6. Competitive Pressures and Market Dynamics: Intense competition in markets dominated by conventional, non-sustainable products or services can pose challenges for eco-entrepreneurs and sustainable businesses. Competing on price, quality, and brand recognition while also prioritizing sustainability requires strategic differentiation and innovation to stand out in the market.

7. Cultural and Behavioural Barriers: Cultural norms, attitudes, and consumer behaviours that prioritize convenience, cost, or short-term benefits over long-term sustainability can pose challenges for businesses seeking to promote sustainable consumption patterns. Overcoming entrenched habits and perceptions may require targeted marketing, advocacy, and societal shifts.

8. Risk of Green washing and Reputational Damage: Businesses that engage in superficial or deceptive green marketing practices, known as green washing, risk damaging their reputation and losing consumer trust. Maintaining authenticity and transparency in sustainability efforts is essential to avoid accusations of green washing and ensure credibility with stakeholders.

By understanding and addressing these challenges and barriers, eco-entrepreneurs and sustainable businesses can better navigate the path to success in integrating sustainability into their operations and achieving their environmental and business objectives.

**Strategies for overcoming challenge**

1. Build Strong Networks and Partnerships: Forge strategic alliances with other businesses, industry associations, research institutions, government agencies, and non-profit organizations to access resources, expertise, and support. Collaborative partnerships can help overcome financial constraints, navigate regulatory complexities, and enhance market visibility and credibility.

2. Access Alternative Financing: Explore alternative financing options such as impact investing, venture capital funds focused on sustainability, crowd funding platforms, grants, and subsidies targeting green initiatives. Seek out investors who are aligned with your environmental and social mission and are willing to provide patient capital for sustainable ventures.

3. Focus on Innovation and Differentiation: Invest in research and development to innovate new products, services, and business models that address environmental challenges and meet market demands. Differentiate your offerings through unique value propositions, superior performance, and sustainability credentials to attract environmentally conscious consumers and investors.

4. Educate and Engage Consumers: Invest in marketing and educational campaigns to raise awareness and educate consumers about the benefits of sustainable products and practices. Communicate transparently about your environmental efforts, certifications, and impact metrics to build trust and loyalty among environmentally conscious consumers.

5. Advocate for Supportive Policies: Engage with policymakers, industry associations, and advocacy groups to advocate for supportive policies, regulations, incentives, and subsidies that promote sustainability and level the playing field for

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ISBN : 978-93-340-1483-9
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sustainable businesses. Participate in public consultations, policy dialogues, and industry forums to voice your concerns and recommendations.

6. Embrace Circular Economy Principles: Adopt circular economy principles to minimize waste, maximize resource efficiency, and create value from by-products and waste streams. Design products for durability, repair ability, and recyclability, and explore opportunities for product-as-a-service models, remanufacturing, and closed-loop supply chains.

7. Invest in Sustainability Training and Capacity Building: Provide training and capacity-building programs for employees to enhance their skills and knowledge in sustainability-related areas such as energy efficiency, waste reduction, sustainable sourcing, and supply chain management. Empower employees to contribute ideas and initiatives for driving sustainability within the organization.

8. Harness Technology and Data Analytics: Leverage technology solutions and data analytics to monitor, measure, and optimize environmental performance across your operations. Implement smart sensors, Io T devices, and energy management systems to track resource consumption, identify inefficiencies, and make data-driven decisions for continuous improvement.

9. Cultivate a Culture of Sustainability: Foster a culture of sustainability within your organization by embedding environmental stewardship and social responsibility into your corporate values, policies, and practices. Engage employees at all levels in sustainability initiatives, recognize and reward environmentally friendly behaviours, and encourage cross-functional collaboration to achieve sustainability goals.

**Future directions:**

1. Technological Innovation: The rapid advancement of technology, including artificial intelligence, block chain, and biotechnology, offers new opportunities for innovation in sustainable business practices. Future eco-entrepreneurs may leverage these technologies to develop novel solutions for environmental monitoring, renewable energy generation, waste management, sustainable agriculture, and more.

2. Circular Economy Transition: The transition towards a circular economy, where resources are reused, recycled, and regenerated, is expected to gain momentum in the future. Businesses will increasingly adopt circular business models, such as product-as-a-service, sharing platforms, and closed-loop supply chains, to minimize waste and maximize resource efficiency.

3. Climate Resilience and Adaptation: As the impacts of climate change become more pronounced, businesses will need to prioritize climate resilience and adaptation strategies. Future eco-entrepreneurs may focus on developing climate-resilient infrastructure, technologies, and services, as well as providing adaptation solutions for vulnerable communities and industries.

4. Social Impact and Equity: The emphasis on social impact and equity is expected to grow, with businesses increasingly addressing social issues such as income inequality, diversity and inclusion, and community development alongside environmental sustainability. Future eco-entrepreneurs may adopt business models that create shared value for both shareholders and stakeholders, prioritizing social and environmental justice.

5. Policy and Regulatory Changes: Anticipated changes in government policies and regulations, including stricter environmental standards, carbon pricing mechanisms, and sustainability reporting requirements, will shape the future landscape of sustainable business practices. Businesses will need to adapt to evolving regulatory landscapes and proactively engage in policy advocacy to influence decision-making.

6. Consumer Behaviour Shifts: Changing consumer preferences and behaviours, driven by increased awareness of environmental and social issues, will continue to influence the demand for sustainable products and services. Future eco-entrepreneurs may capitalize on growing consumer interest in ethical consumption by offering transparent, eco-friendly, and socially responsible products and brands.

7. Global Collaboration and Partnerships: Addressing complex sustainability challenges requires collaborative action across sectors and borders. Future eco-entrepreneurs and businesses may engage in multi-stakeholder partnerships, cross- sectoral collaborations, and global initiatives to scale up impact, share best practices, and drive systemic change towards sustainability.

8. Green Finance and Investment: The growing availability of green finance and investment opportunities, including green bonds, impact investing, and sustainable investment funds, will enable businesses to access capital for sustainability initiatives. Future eco-entrepreneurs may tap into

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ISBN : 978-93-340-1483-9
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these funding sources to scale up their ventures and accelerate the transition to a sustainable economy.

9. Education and Capacity Building: Investing in education, training, and capacity building for future generations of eco-entrepreneurs and sustainability professionals will be crucial for driving innovation and leadership in sustainability. Future initiatives may focus on integrating sustainability into business curricula, promoting interdisciplinary collaboration, and fostering entrepreneurship skills for sustainable development.

**Policy Implications and Recommendations:**

1. Supportive Regulatory Frameworks: Governments should develop and implement supportive regulatory frameworks that incentivize and reward eco-entrepreneurship and sustainable business practices. This may include tax incentives for green businesses, subsidies for renewable energy and sustainable technologies, and streamlined permitting processes for eco-friendly initiatives.

2. Access to Finance and Funding: Policymakers should prioritize improving access to finance and funding for eco-entrepreneurs and sustainable businesses. This can be achieved through the establishment of green investment funds, venture capital programs targeting sustainable ventures, and financial incentives for banks and investors to allocate capital towards environmentally friendly projects.

3. Capacity Building and Technical Assistance: Governments, in collaboration with industry associations and educational institutions, should invest in capacity building programs and technical assistance initiatives to support eco-entrepreneurs and businesses in adopting sustainable practices. This may include training programs on green technologies, sustainability management, and access to expert advice and mentorship.

4. Promotion of Innovation and Research: Policymakers should promote innovation and research in sustainability by providing grants, funding opportunities, and research incentives for eco-entrepreneurs, start ups, and academic institutions. This can drive technological advancements, product innovations, and solutions to pressing environmental challenges.

5. Public Procurement Policies: Governments can leverage their purchasing power to drive demand for sustainable products and services through public procurement policies. By incorporating environmental criteria into procurement decisions and favouring suppliers with strong sustainability credentials, governments can create market opportunities for eco-entrepreneurs and businesses.

6. Education and Awareness Campaigns: Policymakers should invest in public education and awareness campaigns to promote sustainable consumption patterns and encourage support for eco-entrepreneurs and sustainable businesses. This may include initiatives to raise awareness about the environmental and social benefits of sustainable products, as well as campaigns to empower consumers to make informed choices.

7. Partnerships and Collaboration: Governments should foster partnerships and collaboration between public, private, and civil society stakeholders to drive collective action towards sustainability. This can include multi-stakeholder platforms, public-private partnerships, and collaborative initiatives aimed at addressing shared sustainability challenges and driving systemic change.

8. Monitoring and Reporting Mechanisms: Policymakers should establish monitoring and reporting mechanisms to track progress towards sustainability goals and hold businesses accountable for their environmental and social impacts. This may include mandatory sustainability reporting requirements, environmental performance benchmarks, and regular audits to ensure compliance with regulations and standards.

By implementing these policy recommendations, governments can create an enabling environment that empowers eco-entrepreneurs and businesses to thrive while advancing sustainability goals and contributing to a greener and more resilient economy.

**Conclusion**:

The conclusion of a paper should summarize the key findings, insights, and implications of the research on eco-entrepreneurship and business success in sustainability. It should provide a concise summary of the main findings from the literature review, case studies, and analysis, highlighting the factors contributing to success in eco-entrepreneurship and sustainable business, as well as the challenges and barriers faced by entrepreneurs and businesses in integrating sustainability into their operations. The paper should discuss the theoretical and practical implications of the findings for eco-entrepreneurship, sustainability studies, and business management, highlighting how the research contributes to existing knowledge, advances theoretical frameworks, and informs best practices for entrepreneurs, businesses,

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policymakers, and researchers. The paper should also emphasize the importance of sustainability in the context of business success and societal well-being, emphasizing the role of eco-entrepreneurs and sustainable businesses in addressing environmental challenges, promoting social equity, and contributing to sustainable development goals. The paper should also encourage further engagement with sustainability initiatives among entrepreneurs, businesses, investors, policymakers, and consumers, advocating for continued investment in sustainable innovation and policy support for eco-entrepreneurship. The conclusion should conclude with a thought-provoking message or call to action, reinforcing the significance of sustainable entrepreneurship in shaping a better future for the planet and society.

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ISBN : 978-93-340-1483-9
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# E-Commerce and Environmental Impact: A Sustainable Perspective

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**Abstract:**

**E-commerce has revolutionized the way business is conducted, offering convenience and accessibility to consumers worldwide. Conversely, its swift growth has elevated alarms about its environmental impact. This research paper examines the environmental implications of e-commerce operations and explores potential strategies for mitigating its negative effects. This paper seeks to explore the relationship between e-commerce and environmental impact, shedding light on the various environmental challenges associated with online retailing, packaging waste, energy consumption, and carbon emissions from transportation logistics while also examining potential strategies for mitigating these effects. Additionally, the paper discusses emerging trends and technological innovations aimed at promoting sustainability in e-commerce, such as green packaging solutions, efficient logistics optimization, and renewable energy utilization. By synthesizing research findings and industry best practices, this paper provides valuable insights for e-commerce businesses, policymakers, and stakeholders seeking to minimize the environmental footprint of online retailing and foster a more sustainable future.**

**Keywords: E-commerce, Environmental Impact, Sustainability, Green Packaging, Logistics Optimization, Renewable Energy**

## INTRODUCTION

In recent decades, the exponential growth of e-commerce has revolutionized the way business is conducted globally. With the click of a button, consumers can now access a vast array of products and services from the comfort of their homes, leading to unparalleled convenience and efficiency in the marketplace. However, this surge in online retailing has not come without its consequences, particularly in terms of its environmental impact. E-commerce operations Encompass a wide range of activities, from digital transactions and data storage to warehousing, packaging, and transportation logistics. Each of these facets contributes to the overall environmental footprint of e-commerce, generating energy consumption, packaging waste, carbon emissions, and other environmental externalities. By delving into the multifaceted dimensions of e-commerce & environmental footprint, we aim to foster a deeper understanding of the environmental consequences of digital commerce and pave the way for more sustainable practices in the e-commerce sector.

The proliferation of e-commerce platforms and online marketplaces has reshaped the retail landscape, with global e-commerce sales reaching trillions of dollars annually. According to Smith and Rendall (2020), the global e-commerce market is expected to continue its upward trajectory, driven by increasing internet penetration and consumer demand for online shopping experiences. While e-commerce offers unparalleled convenience and accessibility, its rapid expansion has raised concerns about its environmental impact. From energy-intensive data centers to packaging waste and carbon emissions from transportation logistics, e-commerce operations generate a range of environmental externalities that contribute to climate change and ecological degradation (Zhang et al., 2019). As consumers increasingly prioritize eco-friendly products and businesses, e-commerce companies face mounting pressure to adopt sustainable practices and minimize their environmental footprint (Liao et al., 2021).

The raising awareness of the environmental consequences of online retailing and proposing actionable solutions can provide us with the hope to contribute to the ongoing dialogue on responsible business practices and environmental stewardship in the era of e-commerce.

## REVIEW OF LITERATURE

Environmental Implications of E-Commerce Operations" (Watson & Newton, 2019):

This study highlights the significant environmental implications of e-commerce operations, including packaging waste, energy consumption, and carbon emissions . It emphasizes the need for sustainable practices in the e-commerce sector to mitigate these environmental impacts.

Assessing the Environmental Impact of E-Commerce on Last-Mile Transportation"(Seebacher et al., 2020): Seebacher et al. conducted a comparative analysis to assess the environmental impact of e-commerce on last-mile transportation. The study underscores the importance of optimizing delivery routes and exploring alternative transportation modes to reduce carbon emissions and alleviate traffic congestion.

Sustainable Practices in E-Commerce: A Systematic Literature Review" (Govindan et al.,2021): Govindan

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ISBN : 978-93-340-1483-9
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et al. conducted a systematic literature review on sustainable practices in e-commerce. The study identifies various sustainable initiatives adopted by e-commerce companies, such as green packaging solutions, renewable energy adoption, and carbon offset programs, to minimize their environmental footprint.

Consumer Behavior and Environmental Awareness in E-Commerce" (Wu & Shen, 2021):Wu and Shen explore consumer behavior and environmental awareness in the context of e-commerce. The study reveals a growing preference among consumers for eco-friendly products and brands, highlighting the influence of environmental considerations on purchasing decisions in the digital marketplace.

Technological Innovations for Sustainability in E-Commerce" (Yuan & Cheng, 2021):Yuan and Cheng examine technological innovations for sustainability in e-commerce, such as AI-driven route optimization, IoT-enabled supply chain monitoring, and renewable energy integration. The study underscores the role of technology in reducing the environmental footprint of e-commerce operations.

Corporate Social Responsibility and Sustainable Business Models in E-Commerce"(Bansal & Song, 2017): Bansal and Song discuss the importance of corporate social responsibility (CSR) and sustainable business models in the e-commerce sector. The study highlights the role of CSR initiatives, such as eco-friendly product sourcing and transparent supply chains, in promoting environmental sustainability in e-commerce.

Policy and Regulatory Frameworks for Environmental Sustainability in E-Commerce" (Haigh & Griffiths, 2016): Haigh and Griffiths examine policy and regulatory frameworks aimed at promoting environmental sustainability in e-commerce. The study evaluates the effectiveness of government policies and regulations in incentivizing e-commerce companies to adopt sustainable practices and reduce their environmental impact.

## The environmental impact of e-commerce:

This refers to the effects that online retailing activities have on the environment. As e-commerce
continues to grow and evolve, its environmental footprint becomes increasingly significant.

**Some key aspects of the environmental impact of e-commerce include:**

**Energy Consumption**: E-commerce operations require significant energy consumption, particularly in data centers and server farms that host websites and process online transactions. These facilities require continuous power for cooling systems and server maintenance, leading to
high energy usage and carbon emissions.

**Packaging Waste:** E-commerce transactions often involve packaging materials such as cardboard boxes, bubble wrap, and plastic envelopes. The widespread use of packaging materials contributes to increased waste generation, leading to environmental pollution and landfill accumulation.

**Carbon Emissions:** The transportation and logistics involved in e-commerce, including delivery trucks, airplanes, and delivery vans, generate carbon emissions that contribute to climate change. Last-mile delivery, in particular, can be inefficient and result in higher emissions due to multiple delivery attempts and inefficient routing.

**Resource Depletion:** The production of goods sold through e-commerce channels requires natural resources such as water, minerals, and raw materials. The extraction and processing of these resources can lead to habitat destruction, biodiversity loss, and ecosystem degradation.

**Electronic Waste**: The intensification of electronic devices and gadgets purchased online contributes to electronic waste (e-waste) generation. E-waste contains hazardous materials such as lead, mercury, and cadmium, which can leach into the environment and pose risks to human health and ecosystems if not properly disposed of or recycled.

**Land Use:** The expansion of e-commerce infrastructure, including warehouses, fulfillment centers, and distribution hubs, can lead to land use changes and habitat fragmentation. Land development for e-commerce facilities can result in deforestation, loss of wildlife habitat, and disruption of ecosystems. The production and transportation of goods sold through e-commerce channels can contribute to water pollution through industrial runoff, chemical spills, and improper waste disposal practices. Contaminants from packaging materials, cleaning agents, and manufacturing processes can enter waterways and degrade water quality.

Addressing the environmental impact of e-commerce requires concerted efforts from e-commerce companies, policymakers, consumers, and other stakeholders. Strategies for mitigating environmental impact may include adopting sustainable packaging practices, optimizing transportation and logistics operations, investing in renewable energy sources ,promoting responsible consumption and recycling, and implementing policies and regulations to incentivize environmentally friendly practices. By adopting a holistic approach to sustainability-commerce can minimize its environmental footprint and contribute to a more sustainable future. The key environmental challenges posed by e-commerce operations, include energy consumption in data centers, packaging waste generation, carbon emissions from transportation logistics, and the broader ecological impact of online retailing. It also includes the role of technological innovations, corporate social responsibility initiatives, consumer behavior, and policy interventions in shaping the environmental sustainability of e-commerce.

**Recommendations for addressing the environmental impact of e-commerce:**

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ISBN : 978-93-340-1483-9
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Adopt Sustainable Packaging Practices: E-commerce companies should prioritize the use of eco-friendly packaging materials, such as recycled and biodegradable materials, to minimize packaging waste. Implement packaging optimization strategies to reduce the size and weight of packages, thereby decreasing material usage and transportation emissions.

**Optimize Last-Mile Delivery:** To explore alternative delivery methods, such as electric vehicles, bicycles, and drones, for last-mile delivery to reduce carbon emissions and traffic congestion. Implement route optimization algorithms and delivery scheduling systems to minimize delivery distances and improve delivery efficiency.

**Invest in Renewable Energy:** The awareness of Transition to renewable energy sources, such as solar, wind, and hydroelectric power, to power e-commerce operations and to reduce reliance on fossil fuels. Install solar panels and other renewable energy infrastructure at fulfillment centers, warehouses, and data centers to offset energy consumption.

**Promote Sustainable Consumption**: Educating consumers about the environmental impact of e-commerce and encourage sustainable consumption habits, such as purchasing eco-friendly products and choosing reusable packaging options. Offering incentives, such as discounts or rewards, for customers who opt for sustainable delivery and packaging choices.

**Enhance Supply Chain Transparency**: Focus to Improve supply chain transparency by providing consumers with information about the environmental footprint of products, including their sourcing, manufacturing, and transportation. Partnering with the suppliers that adhere to sustainability standards and certifications, such as Fair Trade and Forest Stewardship Council (FSC) certifications.

**Collaborate with Stakeholders:** Collaborating with the industry stakeholders, government agencies, NGOs, and academic institutions to develop and implement sustainability initiatives. Participate in industry-wide initiatives and partnerships to share best practices, conduct research, and address common environmental challenges.

**Support Policy and Regulatory Efforts:** To support for policies and regulations that promote sustainability in the e-commerce industry, such as carbon pricing mechanisms, waste reduction targets, and renewable energy incentives. Work with policymakers to develop and implement environmental standards and certifications for e-commerce operations.

**Invest in Research and Innovation:** Allocating resources towards research and innovation to develop new technologies and solutions for reducing the environmental impact of e-commerce. Investing in research projects focused on sustainable packaging, green logistics, energy efficiency, and other areas relevant to environmental sustainability.

By implementing these recommendations, e-commerce companies can minimize their environmental footprint and contribute to a more sustainable future. Additionally, collaboration and engagement with stakeholders across the e-commerce ecosystem are essential for driving collective action and achieving meaningful progress towards environmental sustainability.

## Conclusion

The rapid expansion of e-commerce has brought unparalleled convenience and accessibility to consumers worldwide, transforming the way we shop and conduct business. However, alongside its many benefits, e-commerce also presents significant environmental challenges that cannot be overlooked. This paper has explored the environmental impact of e-commerce, analyzing its implications and discussing potential strategies for mitigation. Addressing energy consumption through renewable energy adoption and energy-efficient technologies is imperative for reducing the environmental footprint of e-commerce. Optimizing delivery routes, utilizing alternative transportation modes, and promoting sustainable logistics practices are crucial for reducing carbon emissions in e-commerce. Educating consumers about the environmental consequences of their purchasing decisions and promoting sustainable consumption habits are essential for reducing the environmental footprint of e-commerce. The propagation of online shopping has led to increased packaging waste, posing challenges for waste management and environmental sustainability. Sustainable packaging solutions, such as recyclable materials and minimalistic designs, are essential for minimizing packaging waste in e-commerce. By implementing sustainable practices, instigating regulatory measures, and fostering consumer awareness, the e- commerce industry can switch towards a more environmentally sustainable future.

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IC- TSI 2024
ISBN : 978-93-340-1483-9
29th February 2024

# A COMPREHENSIVE STUDY ON GREEN AUDIT FOR SUSTAINABLE DEVELOPMENT

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**Abstract:**

**Green audits are essential tools for assessing and enhancing sustainable development practices within organizations. These audits typically involve evaluating environmental impacts, resource usage, and compliance with regulations. One of their key functions is to identify areas where improvements can be made to minimize ecological footprints and promote eco-friendly initiatives. Some features of green audits include comprehensive assessments of energy consumption, waste management, and emissions control. Advantages of implementing green audits include enhanced corporate social responsibility, cost savings through resource efficiency, and improved reputation among environmentally conscious consumers. However, disadvantages may include initial implementation costs and the need for ongoing monitoring and adjustments. Overall, green audits play a crucial role in fostering sustainable development by guiding organizations towards more environmentally responsible practices.**

**KEY WORDS:**

**Green Audit, Functions, Features, Advantages and Disadvantages, Sustainable Development**

## INTRODUCTION

Green audits serve as crucial instruments in the pursuit of sustainable development within society. These audits are precisely designed to evaluate and optimize environmental practices across various sectors, ranging from industries to public institutions. By conducting thorough assessments of resource utilization, waste management, and compliance with environmental regulations, green audits empower communities to identify areas for improvement and implement eco-friendly initiatives.

Through their comprehensive analysis and actionable recommendations, green audits pave the way for a more sustainable future by promoting responsible stewardship of natural resources and mitigating the adverse impacts of human activities on the environment**.** In the quest for a more sustainable future, the integration of green audits stands as a key strategy in shaping the course of societal development. Rooted in the beliefs of environmental stewardship, green audits serve as the basis for evaluating, optimizing, and enhancing sustainable practices across diverse sectors of society.

These audits, characterized by their comprehensive assessment methodologies, delve deep into the complex connection of resource utilization, waste management, and adherence to environmental regulations. By accurately scrutinizing the ecological footprint of industries, public institutions, and communities, green audits not only reveal areas of inefficiency and environmental degradation but also offer a roadmap towards tangible and impactful solutions.

Through their systematic analysis and realistic recommendations, green audits catalyse a standard shift towards sustainable development, nurturing a harmonious coexistence between human activities and the delicate ecosystems upon which they depend. As society copes with the urgent necessities of climate change, resource depletion, and biodiversity loss, the implementation of green audits emerges not merely as a choice, but as an imperative for safeguarding the well-being of present and future generations.

## OBJECTIVES

1. To overview the functions and features of green audit for sustainable development
2. To identify the advantages and disadvantages of green audit for sustainable development.

## OVERVIEW:

A green audit is a systematic assessment of environmental practices of an organization and their impact on sustainability of ecological growth. It involves evaluating various aspects such as consumption of energy, management of waste, emissions, and compliance with environmental regulatory acts of government. The primary goal of a green audit is to identify opportunities for

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ISBN : 978-93-340-1483-9
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improvement and to implement measures that promote sustainable growth and development.

Green audits play a crucial role in sustainable growth and development by providing organizations with valuable insights into their environmental performance. By identifying areas of inefficiency and environmental impact, green audits enable organizations to implement targeted strategies to reduce their ecological footprint. This not only helps in preserving natural resources and protecting the environment but also contributes to cost savings and improved operational efficiency.

Moreover, green audits help organizations stay compliant with environmental regulations and standards, reducing the risk of legal penalties and reputational damage. They also foster a culture of accountability and transparency, as organizations are required to report their environmental performance to stakeholders.

Overall, green audits are essential tools for promoting sustainable growth and development by helping organizations become more environmentally responsible, efficient, and resilient. They empower organizations to make informed decisions that balance economic growth with environmental conservation, ensuring a better future for current and future generations.

**FUNCTIONS:**

Green audits play a critical role in catalysing sustainable growth and development by serving several key functions. Firstly, they act as comprehensive evaluative tools, systematically assessing environmental performance, resource usage, and waste management practices across various sectors. Through this assessment, green audits provide invaluable insights into areas ripe for improvement, guiding organizations towards more sustainable practices. Additionally, green audits function as proactive measures for risk management, identifying environmental vulnerabilities and enabling organizations to mitigate potential impacts. By ensuring compliance with environmental regulations and standards, these audits help mitigate legal and reputational risks while promoting responsible environmental stewardship. Moreover, green audits facilitate stakeholder engagement by providing transparent insights into environmental performance, fostering trust, collaboration, and alignment with stakeholder expectations. They also promote resource efficiency by examining energy consumption, water usage, and material inputs, thereby minimizing waste and reducing operational costs. Furthermore, green audits support a culture of continuous improvement by establishing frameworks for setting environmental targets, tracking progress, and implementing corrective actions. In essence, the functions of green audits are instrumental in driving sustainable growth and development, fostering resilience, innovation, and accountability in the face of evolving environmental challenges.

**FEATURES:**

The features of green audits are integral to enhancing sustainable development by providing a comprehensive framework for assessing, managing, and improving environmental performance. Firstly, green audits encompass a wide range of evaluation criteria, including energy consumption, waste management, emissions, and compliance with environmental regulations. This holistic approach ensures that all aspects of an organization's environmental impact are thoroughly examined, allowing for a comprehensive understanding of sustainability challenges and opportunities.

Moreover, green audits are characterized by their systematic and data-driven methodologies, which rely on quantitative analysis and objective assessment criteria. This enables organizations to identify specific areas where improvements can be made, prioritize actions based on their potential impact, and track progress over time. By providing clear and actionable insights, green audits empower organizations to implement targeted strategies that maximize environmental benefits while minimizing costs and risks.

Additionally, green audits promote stakeholder engagement and transparency by involving relevant stakeholders in the audit process, including employees, customers, regulators, and local communities. This ensures that diverse perspectives and priorities are taken into account, nurturing collaboration, trust, and accountability. By fostering open communication and dialogue, green audits create opportunities for collective problem-solving and innovation, driving continuous improvement and shared value creation.

Furthermore, green audits facilitate compliance with environmental regulations and standards by helping organizations identify and address non-compliance issues proactively. By staying ahead of regulatory requirements, organizations can avoid costly fines and penalties, as well as reputational damage associated with environmental violations. This proactive approach to compliance also positions organizations as leaders in environmental stewardship, enhancing their reputation and competitive advantage in the marketplace.

Overall, the features of green audits are essential for enhancing sustainable development by providing organizations with the tools, insights, and motivation needed to adopt more environmentally responsible practices. By promoting transparency, accountability, and collaboration, green audits empower organizations to achieve their sustainability goals while driving positive social, environmental, and economic outcomes for all stakeholders involved.

**ADVANTAGES:**

- Identification of Opportunities: Green audits pinpoint areas for improvement, enabling organizations to implement eco-friendly initiatives and sustainable practices.

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ISBN : 978-93-340-1483-9
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- Cost Savings: By optimizing resource usage and reducing waste, green audits help organizations save money through increased efficiency and decreased operational expenses.
- Compliance Assurance: Green audits ensure organizations comply with environmental regulations, reducing the risk of fines and penalties while fostering a culture of legal responsibility.
- Enhanced Reputation: By demonstrating commitment to environmental responsibility, organizations can improve their reputation among stakeholders, attracting environmentally conscious consumers and investors.
- Risk Management: Green audits help organizations anticipate and mitigate environmental risks, enhancing resilience to potential disruptions and ensuring long-term sustainability.
- Stakeholder Engagement: By involving stakeholders in the audit process, organizations can build trust, foster collaboration, and align sustainability efforts with stakeholder expectations.
- Innovation: Green audits stimulate innovation by encouraging organizations to explore new technologies and practices that promote sustainability and reduce environmental impact.
- Long-Term Sustainability: By promoting responsible resource management and environmental stewardship, green audits contribute to the preservation of natural resources and the well-being of future generations.

Overall, the advantages of green audits for sustainable development are instrumental in driving positive social, environmental, and economic outcomes, positioning organizations for long-term success in a rapidly changing world.

**DISADVANTAGES:**

- Cost: Implementing a green audit can require significant financial investment, including hiring external consultants, acquiring specialized equipment, and conducting extensive data collection and analysis. For smaller organizations with limited resources, the upfront costs of a green audit may be prohibitive.
- Complexity: Green audits can be complex and time-consuming processes, requiring expertise in environmental science, data analysis, and regulatory compliance. This complexity may pose challenges for organizations with limited internal capacity or experience in conducting audits.
- Resistance to Change: Some stakeholders within an organization may resist the findings and recommendations of a green audit, particularly if they perceive them as disruptive to established practices or costly to implement. Overcoming resistance to change and gaining buy-in from all stakeholders can be a significant challenge.
- Limited Scope: Green audits may focus primarily on environmental performance metrics and may not fully capture broader social or economic dimensions of sustainability. This limited scope can result in missed opportunities to address systemic issues or to achieve more holistic sustainability goals.
- Inaccuracy of Data: Green audits rely heavily on accurate and reliable data to inform decision-making and measure progress over time. If data collection processes are flawed or incomplete, the findings of a green audit may be unreliable or misleading, undermining the effectiveness of sustainability initiatives.
- Potential for Green washing: In some cases, organizations may use green audits as a marketing tool to portray themselves as environmentally responsible without making meaningful changes to their practices. This can lead to accusations of green washing and damage to their reputation if their actions do not align with their stated commitments to sustainability.

Despite these potential disadvantages, green audits remain valuable tools for assessing and improving environmental performance and promoting sustainable development. By addressing these challenges proactively and leveraging the insights gained from audits, organizations can overcome barriers to sustainability and achieve positive outcomes for both themselves and the environment.

**SUGGESTIONS:**

- Green audit helps to save time and money for long term.
- Enhances in developing the environmental ethic and value system among people.
- It secure the environment and cut down the threats posed to human health by analysing the pattern and extent of resource use.
- Through green audit the environment and resources depletion can be reduced and the protection of resources can be improved.
- If the organization use green audit it helps to regulate the eco-friendly practices for sustainability

**CONCLUSION:**

In conclusion, green audits stand as vital instruments in the pursuit of sustainable development, offering a systematic approach to assessing, managing, and enhancing environmental performance. Despite potential challenges such as upfront costs, complexity, and resistance to change, the benefits far outweigh the drawbacks. Green audits provide organizations with valuable insights into their environmental impacts, identifying opportunities for improvement, and driving innovation towards more sustainable practices. By promoting compliance with regulations, enhancing stakeholder engagement, and

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ISBN : 978-93-340-1483-9
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fostering a culture of transparency and accountability, green audits empower organizations to navigate the difficulties of sustainability with confidence. Ultimately, through their role in promoting responsible resource management, mitigating environmental risks, and fostering long-term resilience, green audits play a vital role in shaping a more sustainable future for generations to come.

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IC- TSI 2024
ISBN : 978-93-340-1483-9
29th February 2024

# Green Investments in Digital Age

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**Abstract**

**In the digital age, the intersection of sustainability and financial innovation has resulted in a vibrant green investment sector. Simultaneously, digital technologies have sped disruptive transformation across industries, opening up unprecedented opportunities to achieve sustainability goals in financial markets. However, issues remain, such as the need for strong regulatory frameworks, trustworthy sustainability indicators, and the reduction of digitalization's environmental impact. Furthermore, enabling inclusive and equitable access to green investment opportunities remains a top concern. Looking ahead, the combination between green investment and digital innovation has enormous potential for producing great environmental results while also generating financial gains. Green investment in the digital age has the potential to become a cornerstone of a more sustainable and resilient global economy if stakeholders work together to handle hurdles and harness technology's transformational power.**

**Keyword: Green Investment, Digitalage, Investment, Innovation, Sustainability**

## INTRODUCTION

The notion of green investment has become essential to promoting sustainable development in the light of swift advances in technology and mounting environmental concerns. Integrating green investment concepts into digital efforts offers a special chance to address environmental concerns while promoting economic development, as the digital era is transforming sectors all over the world. This essay explores the importance of green investment in the digital age, highlighting its advantages, difficulties, and potential for revolutionary change. There are now more chances than ever for efficiency and creativity in a variety of fields thanks to the digital era. Digitalization provides an array of instruments to improve environmental sustainability, ranging from smart infrastructure solutions to renewable energy technology. Green investment makes use of these technological advancements to direct funds toward projects and activities that are given top priority.

Exploring the synergies between digitization and green finance from a theoretical perspective:

Examining the theoretical connections between digitalization and green finance reveals a dynamic and intricate environment. With an emphasis on data openness, Simon Zadek emphasizes the critical role that digitalization plays in the gathering and examination of ESG data. Eugene Fama outlines how the quick integration of ESG data into asset prices is one way that digitalization enhances market efficiency. Jed Emerson and Antony Bugg-Levine emphasize the importance of assessing the true return on investments made in social and environmental sectors, taking advantage of digitization's capacity to do so. Robert Merton investigates diversification theory and demonstrates how digitalization makes a wide variety of green investments more accessible. The potential for digitization to spur innovation in green finance is highlighted by Clayton Christensen.These intricate relationships are essential to the creation of sustainable finance, enhancing transparency, market efficiency, impact measurement, investment diversification, and innovation.

**An Alliance for Green Digital Finance:**

BBVA is the first Spanish bank to join Every Action Counts, a group launched by the Green Digital Finance Alliance. This alliance was formed with the goal of engaging at least 1 billion persons worldwide through technical and digital activities to increase action and environmental awareness by 2025.Because, in addition to improving the quality of life for everyone on the planet, digitalization promotes long-term development, as Fuente explains: "Tools like big data and artificial intelligence, as well as the use of blockchain technologies, play a key role in accelerating sustainable finance." The influence of emerging technology on the environment might be enormous: "Artificial intelligence could streamline recycling activities by identifying waste; 3D printing could lead to reductions in"

**Digital economy and green investment level:**

The level of a regional digital economy encourages green investment in three ways: energy conservation and pollution reduction, green finance development, and economic growth facilitation.

First, the digital economy has the potential to help create a green economy by conserving energy and lowering emissions. This impact presents itself in three ways. 1) It promotes a green economy by reducing carbon emissions (Gelenbe&Caseau, 2015; Rehman et al., 2021; Xie, 2022). The digital industry emits less carbon dioxide during the production or provision of services than the old industry. The rapid expansion of the digital economy also accelerates the proliferation of mobile.

IC- TSI 2024
ISBN : 978-93-340-1483-9
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Second, the growth of the digital economy propels the progress of green finance. Green finance is essential for funding sustainable and green energy initiatives, as well as providing financial support for green investments (Taghizadeh-Hesary& Yoshino, 2019). Studies have shown that digital technologies empower the financial sector to transform and upgrade (Tian, Zhang, & Qu, 2022), integrate social capital and financial resources (Chen & Shen, 2022), promote improvement of the green financial regulatory system, build a green big data service platform, regulate green investment and green financial projects (Lan & Wang, 2021), and assist the traditional financial sector to transform into green finance, thereby driving up the green investment.

**The Rise of Green Computing:**

Green computing, often known as green IT, has arisen as a transformational approach to technology, with a primary focus on ecologically sustainable computing. This approach has progressed from a fringe thought to a mainstream strategy that many organizations and institutions are increasingly using.

**The Evolution of Green Computing:**

- **Early Beginnings** :

  The concept of green computing began in the early 1990s with the U.S. Environmental Protection Agency launching the Energy Star program, a voluntary label awarded to computers and monitors that were energy-efficient.

- **Broader Scope:**

  Green computing's application has grown beyond energy savings over time. It now includes a broader variety of activities, such as developing processors with lower energy consumption, supporting recyclable materials, using less hazardous components, and encouraging the recycling and correct disposal of electronic waste.

- **Corporate Adoption**:

Green computing principles are being incorporated into business processes by companies as a result of growing awareness of climate change and corporate responsibility. This change is prompted by growing awareness of the benefits of sustainable practices for reduced costs and enhanced brand recognition, in addition to environmental concerns.

Importance of green investment in digital age:

It is impossible to overestimate the significance of green investments in the digital era, especially in light of the urgent need to address environmental deterioration and climate change. In the current digital era, green investment is vital for the following reasons:

**Environmental Sustainability:** Green investment focuses on funding projects and initiatives that promote sustainability, such as renewable energy, energy efficiency, sustainable agriculture, and waste management. In the digital age, where energy consumption associated with digital infrastructure and data centers is significant, investing in green technologies helps reduce carbon emissions and mitigate environmental impact.

**Economic Growth and Innovation:** Green investment stimulates economic growth by creating new markets and driving innovation. In the digital age, technologies such as smart grids, energy-efficient buildings, electric vehicles, and clean energy storage solutions offer opportunities for job creation and entrepreneurship. Investing in these sectors fosters technological advancements and strengthens global competitiveness.

**Corporate Social Responsibility (CSR)** and Reputation: Businesses are increasingly expected to demonstrate their commitment to sustainability and CSR. Green investment allows companies to align their financial interests with environmental and social objectives, enhancing their reputation and stakeholder trust. In the digital age, companies can leverage digital platforms and communication channels to transparently showcase their green initiatives and engage with stakeholders.

**Regulatory Compliance and Policy Support:** Governments around the world are implementing regulations and policies to address climate change and promote sustainable development. Green investment helps companies comply with environmental standards and access incentives or subsidies offered by governments for renewable energy and green projects. Additionally, investing in lobbying efforts and advocacy can influence policymakers to enact supportive legislation and create a conducive environment for green investment.

**Long-Term Value Creation:** Green investment offers long-term value creation by reducing operational costs, minimizing resource dependencies, and mitigating risks associated with climate change and environmental degradation. In the digital age, adopting sustainable practices and investing in green technologies can future-proof businesses against evolving regulatory landscapes, market trends, and consumer preferences.

**Advantages of Green Investment in Digital Age :**

Here are some advantages of green investment in the digital age:

**Environmental Preservation:** Green investments focus on renewable energy, sustainable infrastructure, and environmentally friendly technologies, leading to reduced carbon emissions, pollution, and depletion of natural resources. This helps in preserving ecosystems and biodiversity, crucial for sustaining life on Earth.

**Cost Savings:** Investing in green technologies often leads to long-term cost savings. For instance, using renewable energy sources like solar or wind power can significantly reduce energy bills for businesses and households over time. Similarly, energy-efficient technologies lower operational costs by reducing energy consumption.

**Innovation and Job Creation:** The intersection of green investment and the digital age fosters innovation and creates new job opportunities. Development and adoption of technologies such as smart grids, energy storage solutions, and sustainable transportation systems require skilled labor, driving employment in these sectors.

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ISBN : 978-93-340-1483-9
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**Resilience to Climate Change:** Green investments help build resilience to the adverse effects of climate change. For instance, investments in climate-resilient infrastructure, such as flood defenses and drought-resistant agriculture, can mitigate the impact of extreme weather events on communities and economies.

**Enhanced Corporate Reputation:** Businesses that prioritize green investment enhance their reputation and appeal to environmentally conscious consumers and investors. Adopting sustainable practices and disclosing environmental initiatives can improve brand perception and customer loyalty, leading to a competitive advantage in the marketplace.

**Disadvantages of Green Investment in Digital Age:**

Here are some disadvantages of green investment in the digital age, expressed uniquely:

**Initial High Costs:** While green technologies offer long-term cost savings, the initial investment required for implementation can be prohibitively high for some businesses and individuals. The upfront costs associated with installing renewable energy systems, upgrading to energy-efficient infrastructure, or investing in sustainable technologies may pose financial barriers, particularly for small businesses and low-income households.

**Technological Risks:** Green investments in emerging technologies carry inherent technological risks, including reliability, performance, and compatibility issues. The rapid pace of innovation in the digital age introduces uncertainties regarding the maturity and effectiveness of green technologies, potentially leading to unexpected setbacks, implementation challenges, and operational disruptions for investors and adopters.

**Intermittency and Variability:** Renewable energy sources such as solar and wind power exhibit intermittency and variability, posing challenges for grid integration and energy supply reliability. The unpredictable nature of renewable energy generation necessitates the deployment of backup systems or energy storage solutions to ensure grid stability and meet demand fluctuations, adding complexity and costs to green investment projects.

**Infrastructure Requirements:** Green investment projects often require significant infrastructure upgrades and modifications to accommodate sustainable technologies and practices. For example, transitioning to electric vehicles necessitates the deployment of charging infrastructure, while integrating renewable energy into the grid requires grid modernization and transmission infrastructure enhancements. These infrastructure requirements may entail substantial investments, regulatory approvals, and construction timelines, delaying project implementation and increasing costs.

**Resource Constraints:** The production and deployment of green technologies depend on finite resources such as rare earth metals, minerals, and land, raising concerns about resource constraints and environmental impacts associated with extraction, processing, and disposal. The growing demand for green technologies in the digital age may exacerbate resource depletion, supply chain vulnerabilities, and environmental degradation, undermining the sustainability credentials of green investment initiatives.

**Theories of Green Investment in Digital Age**:

**Sustainable Development Goals (SDGs):** The SDGs, adopted by the United Nations in 2015, provide a comprehensive framework for sustainable development, addressing social, economic, and environmental dimensions. Green investment in the digital age aligns with several SDGs, including affordable and clean energy (SDG 7), industry, innovation, and infrastructure (SDG 9), and climate action (SDG 13), among others. By investing in projects that contribute to SDG targets, stakeholders can advance global efforts towards a more sustainable and inclusive future.

**Triple Bottom Line (TBL):** The TBL framework emphasizes the integration of social, environmental, and financial considerations in business decision-making. Green investment in the digital age adopts a TBL approach by seeking to generate positive environmental outcomes, deliver social benefits, and achieve financial returns simultaneously. This holistic perspective encourages investors and businesses to assess the broader impacts of their investments beyond purely financial metrics.

**Resource-Based View (RBV):** The RBV posits that a firm's competitive advantage stems from its unique bundle of resources and capabilities. In the context of green investment in the digital age, companies leverage their internal resources, such as technological expertise, intellectual property, and organizational capabilities, to develop and deploy innovative green technologies and solutions. By strategically leveraging their resources, firms can gain a competitive edge in green markets and drive sustainable growth.

**Principles of Green Investment in Digital Age:**

**Environmental Sustainability:** The primary principle of green investment is to prioritize environmental sustainability. Investments should focus on projects, technologies, and initiatives that mitigate climate change, reduce greenhouse gas emissions, conserve natural resources, and protect ecosystems. In the digital age, this includes investing in renewable energy, energy efficiency, clean transportation, sustainable agriculture, and circular economy solutions.

**Innovation and Technology Adoption:** Green investment in the digital age emphasizes innovation and the adoption of cutting-edge technologies to address environmental challenges. Investors should seek opportunities to support research, development, and deployment of innovative solutions such as smart grids, energy storage systems, digital agriculture, and clean technology startups. Embracing digital technologies such as artificial intelligence, blockchain, and Internet of Things (IoT) can enhance the effectiveness and scalability of green investment initiatives.

**Long-Term Value Creation:** Green investment should prioritize long-term value creation over short-term financial gains. Investors should consider the environmental, social, and economic impacts of their investments, aiming to generate sustainable returns while contributing to positive environmental outcomes. This requires a focus on resilience, adaptability, and durability of investments to withstand environmental risks and market fluctuations over time.

**Transparency and Accountability:** Transparency and accountability are essential principles of green investment

IC- TSI 2024
ISBN : 978-93-340-1483-9
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in the digital age. Investors should disclose information about their environmental performance, carbon footprint, and sustainability practices to stakeholders, including shareholders, customers, and regulators. Transparency builds trust and credibility, enabling stakeholders to assess the environmental impact of investments and hold investors accountable for their commitments to sustainability.

**Stakeholder Engagement and Collaboration**: Green investment initiatives should prioritize stakeholder engagement and collaboration to ensure inclusivity and alignment of interests. Investors should actively engage with communities, environmental organizations, government agencies, and other stakeholders to identify opportunities, address concerns, and co-create solutions. Collaboration fosters shared ownership of green investment projects, enhances local support, and increases the likelihood of success.

**Challenges in Implementing Sustainable technologies:**

Although switching to sustainable technologies is essential for protecting the environment, there are obstacles to overcome. Businesses in a variety of industries encounter obstacles while attempting to implement environmentally friendly solutions, which might include both financial and technological ones. Facilitating a more seamless transition to sustainability requires an understanding of these issues and investigating possible solutions.

**Financial and Investment Challenges:**

**High starting prices:**

Green technologies may demand a substantial initial outlay of funds. In comparison to their conventional counterparts, renewable energy systems, environmentally friendly manufacturing equipment, and electric automobiles can have higher startup prices.

**Issues with Return on Investment (ROI):**

Because they are unsure of the return on investment, many businesses are hesitant to invest in sustainable technologies. The upfront cost and hazy payback period may act as deterrents, despite the potential for significant long-term financial rewards.

**Technological Limitations and Scalability:**

**Technological Maturity:**

Certain environmentally friendly technologies are still in the research and development phase and might not be ready for widespread use just yet. This covers issues with effectiveness, robustness, and system integration.

**Scalability Problems:**

It might be difficult to scale up sustainable solutions to satisfy the needs of larger companies. This entails overseeing the logistics of supply chains and distribution networks and guaranteeing constant performance.

**Regulatory and Policy Barriers:**

**Absence of Adequate Policies:**

Some areas have weak regulatory environments or no government incentives, which makes it challenging for businesses to defend their adoption of sustainable technology.

**Observance of Varying Regulations:**

It can be difficult to navigate the complicated web of environmental legislation, particularly for multinational companies that operate in several jurisdictions with different standards and requirements.

**Future Trends in Sustainable Technology:**

Future developments in sustainable technology are expected to bring about major changes. Not only does anticipating these shifts provide us with a window into the future, but it also aids in directing investment and innovation. The possible advancements and new trends in sustainable technology that are anticipated to influence the upcoming years are examined in this section of the essay.

**Renewable Energy Advancements:**

Efficiency of Solar and Wind Energy Future developments in wind turbine and solar panel technology should lower costs and boost efficiency, increasing the availability and affordability of renewable energy for both consumers and companies.

**Creative Solutions for Energy Storage**

Energy storage innovations in the future are expected to include new battery technology and other approaches like storing hydrogen, which are essential for controlling the intermittent nature of renewable energy sources.

**Sustainable Transportation and Electric Mobility:**

Growth of Electric Cars (EVs) The EV industry is anticipated to expand rapidly due to rising environmental consciousness and developments in battery technology. It is probable that this tendency will not only affect vehicles but also trucks, buses, and possibly ships. Connected and Autonomous Vehicles Transportation could be revolutionized by integrating autonomous driving technology with electric vehicles (EVs) to make it safer, more efficient, and less carbon-intensive.

**Smart and Green Cities:**

Solutions for Urban Sustainability .The goal of smart city programs are to integrate technology in a way that makes living in cities more sustainable. This covers trash management systems that are effective, green buildings, smart grids, and urban agriculture technology. IoT for Tracking the Environment Environmental consequences will be monitored and managed in large part by the Internet of Things (IoT). Real-time data from sensors and smart devices will help decrease pollution and maximize resource consumption.

Conclusion

Green investing is becoming a key tactic in the digital age, as it offers viable answers to environmental problems and keeps pace with technology developments. This convergence offers a special chance to solve urgent environmental issues while promoting innovation and economic progress. Green investments have the potential to optimize resource allocation, enhance transparency, and propel sustainable development by means of the integration of digital technologies such as block chain, data analytics, and artificial intelligence. Furthermore, the digitization of green investment enables increased involvement and participation, enabling people and institutions to support environmental conservation. Through the utilization of digital platforms, social media, and crowd funding, stakeholders have the ability to gather support, increase awareness, and initiate transformative change on a worldwide level.

IC- TSI 2024
ISBN : 978-93-340-1483-9
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But even with its potential, green investment in the digital era depends on overcoming a number of obstacles, including technological obstacles, data privacy issues, and legislative frameworks. Governments, corporations, and civil society organizations must work together to create standards, incentives, and laws that encourage sustainable investing practices and guarantee accountability.

To sum up, green investment in the digital era has a lot of potential to promote social inclusiveness, economic development, and environmental stewardship. We can create new opportunities to create a more sustainable and resilient future for future generations by utilizing technology and encouraging teamwork.

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IC- TSI 2024
ISBN : 978-93-340-1483-9
29th February 2024

# E-COMMERCE AND ENVIRONMENTAL IMPACT

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**Abstract**

**This document gives information about e-commerce, the importance, history and the pros and cons of e-commerce in today's world. It also includes information about the impact that e-commerce has created on the environment, that includes both the merits and limitations.**

**Keywords- e-commerce, history of e-commerce, pros and cons of e-commerce, importance of e-commerce, e-commerce and its environmental impact of both positives and negatives.**

## INTRODUCTION

Ecommerce is the activity of electronically buying or selling products on online service or internet and trans meting of fund or data over and electronic network. You can use e-commerce Channels such as your own website or established selling like an Amazon or any social media to drive online sales. E-commerce operates on different types of market segments and can be conducted through computers, mobilephones and other smart devices. Almost anything can be purchased through e-commerce today which makes them highly competitive.The rise of e-commerce has also led to an increase in electronic waste. As more people purchase electronics online, the disposal of old electronic devices becomes a growing problem. Carbon emissions: The transportation of goods from warehouses to consumers generates significant carbon emissions.

## HISTORY

The industries has gone through so many changes since then resulting in a great deal of evaluation. Companies like Alibaba, Amazon, EBay became household name these companies had created a virtual market place for goods and services that consumers can easily access. Initially in 1960s when a company used an electronic system called the electronic data interchange just to facilitate for transfer of documents... New technology continues to make it easier for people to go for online shopping. People can connect with businesses through any smart devices by downloading apps to make purchases. Over the evolution of ecommerce, has introduced free shipping which reduces cost for consumers that has helped in increased the popularity of the e-commerce industries. In 1982 ecommerce company launches ( Boston Computer Exchange ) it was an online market place for people interested in selling there used computers such resulted in emergency of ecommerce as we know companies like Amazon and eBay.

## ADVANTAGES OF E-COMMERCE

**CONVENIENCE**:

E-commerce can occur 24 hours a day, seven days a week. It helps to earn revenues for the sellers while they are away from their stores.

**INCREASED SELECTION:**
Many stores offer a wider range of Products online than they carrying their retail stores.

**INTERNATIONAL SALES:**
As long as e-commerce stores can ship to the customers and e-commerce company can sell to anyone in the world, it is not limited by physical geography

**EASIER TO RETARGET CUSTOMERS:**
It is easier to grab their attention towards placed advertisements marketing campaigns or any pop-ups.

## DISADVANTAGE OF E-COMMERCE

**LIMITEDCUSTOMER SERVICE:**

Online websites will let you chat with the staff members but physical demonstration of a particular model to the customers.

**LACK OF INSTANT GRATIFICATION:**

Sometimes when you buy an item online you must wait for it to ship to your home but e-retailer Amazon provide same day delivery as a premium option for selected products.

**INABILITY TO TOUCH PRODUCTS:**

Generally, e-commerce purchases can unsatisfied the customers when they receive the products as it doesn't match their expectation.

**HIGHER COMPETITION:**

In online purchases generally products are lower in cost it acts as an advantage to the customers but then it increases the competition.

## IMPORTANCE:

**E-COMMERCE HELPS YOU KEEP A CHECK ON COSTS:**

Many online sellers showcase their entire inventory using the e-commerce by doing so they can save on rental for storage space, electricity, other charges involved to manage the products in physical forms so you need not have a physical space so it can either save a money with e-commerce.

IC- TSI 2024
ISBN : 978-93-340-1483-9
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**IT HELPS YOU TO EXPAND YOUR BRAND:**

E-commerce generally you to take your stores online in a creative and more attractive manner when you offer a quality product along with the dedicated customer supports, social media interaction and blogs, it helps you to create a strong online presence for your brand.

**WIDE RANGE OF PRODUCTS:**

In some areas there is a lack of availability of certain kinds of products and services this will lead to face the scarcity of products and services. This is when e-commerce plays an important role, they usually never fails to satisfy the customers buy limited access of variety of products.

**ATTRACT NEWER CUSTOMERS:**

Online sellers have a wider visibility to a larger set of audience around the globe it can reach new customers through internet access by social sharing, customer share their experience with the services using the internet. Other online sellers can easily know which product is been loved by many customers

**LOWER BUSSINESS RISK:**

Starting an online ecommerce store or website will cost you much lower than the brick stores. You need not to worry about overhead charges that might incur while selling online this will help you sell the product at competitive prices and lower business risk.

**TYPES OF E-COMMERCE**:

**BUSINESS TO CUSTOMERS (B2C):**

Business to customers model of business deals with retail aspects of E-commerce. The sale of goods and services to the end customers through digital means. Example; Amazon and Flipkart. This mode of purchase as improve the beneficial to customers compare to traditional methods.

**BUSINESS TO BUSINESS(B2B):**

B2B model of business involves the conduct of trade between two or more companies. The channels generally include wholesalers and producers who are deals with retailers.

**CUSTOMER TO CUSTOMER(C2C):**

This business model is leverage by a consumer for selling used goods or services to another consumer through digital medieties play form provided by a third party like OLX, QUICKR.

**CONSUMER TO BUSINESS C2B):**

A C2B model is the exact opposite of B2C model. Here the services are provided by the consumers to business. It provides an opportunity to consumer to sell their products.

**APPLICATION OF E-COMMERCE IN DIFFERENT FIELDS**:

- E-commerce allows the customers to choose the product or services they want from the suppliers anywhere in the world.
- It gives you wide choice compared to retailed stores.
- In manufacturing industries e-commerce serves as a platform for some companies to conduct electronic transaction in turn it helps the company to carryout than activities smoothly by purchasing and selling in all market conditions.
- Applying e-commerce in the field of trade elevates higher level of peoples to participate without geographical bodes.
- Commercialization of strategies like prices, variety of products, customer relationship can boost e-commerce. Digital marketing has grown in importance of mean of promoting enterprise.
- Banking of a known as online banking which allows bank customers to do online transaction without waiting in lengthy lines.
- Online booking allows the customers to buy travel necessity such as train, hotel booking, tourism package**.**

**EXAMPLE OF E-COMMERCE:**

- **Amazon:** Amazon is a behemoth in e-commerce space it acts as a world largest online retailer and continuous to grow it is a company based on e-commerce for sales and product delivery.
- It was founded by jeff Bezos in 1994 as an online book store and now expanded from clothing to housewares.
- Company sale increased by 9% in 2022 from the previous year. Amazon operating income dropped from $24.88 billion in 2021$12.25 billion in 2022,so company has faced a net loss.

**E-COMMERCE AND IT'S IMPACTS**

**POSITIVE IMPACTS ON THE ENVIRONMENT**

According to a 2011 International Conference on Environmental Science and Engineering study, there are several positive environmental impacts of e-commerce business models, and sustainable e-commerce models help attract customers.

**TRANSPORTATION EMISSIONS**

E-commerce business models allow for organizations to conduct business without physically commuting. Transportation is responsible for a large number of harmful emissions/pollutions, and by reducing your organization's reliance on it, you can reduce your carbon footprint. Additionally, if e-commerce organizations allow employees to work from home, they can decrease their footprint even further.

**PAPER WASTE**

Paper waste is created by most organizations. When information is transferred digitally, it reduces the need for the use of physical paper throughout the business. This can

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ISBN : 978-93-340-1483-9
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help reduce an organization's footprint by reducing (or eliminating) paper waste. Paperless business models have a number of benefits and can be made possible using e-commerce capabilities.

**DIGITAL CONSUMPTION**:

E-commerce encourages digital consumption, which means more electronic devices and their associated environmental impacts. It's important to be mindful of our electronic waste and properly recycle or dispose of old devices.

**SUPPLY CHAIN EFFICIENCY:**

E-commerce allows for more streamlined supply chains, reducing the need for excessive inventory and minimizing waste. Companies can optimize their supply chain processes to reduce environmental impact.

**SUSTAINABLE PRACTICES**:

Many e-commerce companies are adopting sustainable practices, such as using renewable energy sources, implementing green packaging initiatives, and supporting eco-friendly products. Supporting these companies can contribute to a more sustainable e-commerce industry.

**CONSUMER BEHAVIOUR**:

E-commerce has the potential to influence consumer behaviour, promoting conscious consumption and sustainable choices. By making informed decisions and supporting eco-friendly products, we can collectively reduce the environmental impact.

**INNOVATION AND RESEARCH:**

E-commerce has spurred innovation in logistics, packaging, and sustainability practices. Ongoing research and development can lead to further improvements in reducing the environmental footprint of e-commerce

These points shed light on different aspects of the impact of e-commerce on the environment. It's important to stay informed and make conscious choices to minimize our ecological footprints.

**NEGATIVE IMPACTS ON THE ENVIRONMENT**

According to the same 2011 International Conference on Environmental Science and Engineering study mentioned above, it is stated that "although the potentials of the Internet to save material and energy cannot be denied, it is too early to conclude that e-commerce has only positive impacts on the environment. Each potential positive impact is coupled with a potentially overwhelming negative impact as well." It should be noted that each e-commerce industry and its respective supply chain could pose its own challenges.

**TRANSPORTATION EMISSIONS**

Even though e-commerce business models reduce the number of transportation emissions put into the air by their customers, their delivery trucks and other vehicles (e.g. planes) can still emit large amounts of harmful pollutants. Additionally, the location of the customer to the distribution canter can make a large impact as well. Wholesale businesses are already primed for cutting down transportation emissions, but this is not always possible for businesses operating at different scales. Since there is a large emphasis on the importance of immediacy in business — especially in shipping offerings — businesses may have to send out freights that are only partially full. This will require additional trips and more transportation emissions.

**PACKAGING**

All shipped items require some degree of packaging, but the online shipping boom is creating a massive cardboard footprint from all of the materials used to ship. Additionally, organizations want to make sure their products are received in perfect condition. This can result in excessive padding techniques using Styrofoam packing peanuts or additional paper. As mentioned above, immediacy is key. When people want something, they want it now, and this can result in buying a number of items one-at-a-time, rather than waiting and making a larger order. This can contribute to additional packaging waste. Although most packaging materials can be recycled, a 2018 EPA study on containers and packaging shows that out of the nearly 82,000 tons of containers and packaging generated in the U.S., only around half was recycled, and 30,000 tons went into a landfill.

**ITEM RETURNS**

Not every customer is satisfied with an item that is shipped to them. For example, an item may not be the same as it appears online, it may not fit, something could have been broken in transit — there are a variety of possibilities that lead consumers to return the item. Item returns contribute negatively to the environment through both transportation emissions and packaging issues. If an item needs to be returned, it takes double the amount of transportation used to get the item to the consumer.

**ENERGY CONSUMPTION:**

E-commerce requires data centres' and servers to operate, which consume a significant amount of energy. However, advancements in technology have led to more energy-efficient infrastructure.

**PACKAGING WASTE:**

E-commerce often involves excessive packaging, leading to increased waste. Companies can address this by using recyclable or biodegradable materials and optimizing packaging sizes.

**TRANSPORTATION EMISSIONS**:

Deliveries from online shopping contribute to transportation emissions. Consolidating shipments, using electric vehicles, and optimizing delivery routes can help reduce these emissions.

**RETURNS AND REVERSE LOGISTICS:**

E-commerce has a higher rate of product returns compared to traditional retail. Proper management of returns and

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ISBN : 978-93-340-1483-9
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implementing efficient reverse logistics processes can help minimize the environmental impact.

**LOCAL ECONOMY:**

E-commerce can impact local businesses and communities. Supporting local businesses and considering their sustainability practices can help maintain a balance.

These points provide a general overview, and the actual impact can vary depending on various factors. It's essential to be aware of these aspects and make conscious choices to minimize the environmental impact of e-commerce.

**STEPS TAKEN IN E-COMMERCE TO REDUCE ENVIRONMENTAL IMPACT**

In recent years, the e-commerce industry has taken significant steps to reduce its environmental impact. Here are some key initiatives and strategies:

**OPTIMIZED PACKAGING**:

Many e-commerce companies are investing in packaging optimization technologies to reduce the size and weight of packages, minimizing material usage and transportation emissions.

**SUSTAINABLE MATERIALS:**

Companies are increasingly using eco-friendly packaging materials, such as recycled cardboard, biodegradable plastics, and compostable packaging, to reduce waste and environmental impact.

**EFFICIENT LOGISTICS:**

E-commerce platforms are optimizing their logistics networks to minimize the distance travelled and maximize the efficiency of delivery routes, reducing fuel consumption and carbon emissions.

**GREEN TRANSPORTATION:**

Some e-commerce companies are transitioning to electric vehicles for delivery fleets and partnering with logistics providers that prioritize sustainability to reduce the carbon footprint of transportation.

**RENEWABLE ENERGY**:

Many e-commerce companies are investing in renewable energy sources, such as solar and wind power, to power their data centres, warehouses, and fulfilment centres, reducing reliance on fossil fuels and lowering greenhouse gas emissions.

**SUPPLY CHAIN TRANSPARENCY:**

E-commerce platforms are working to increase transparency in their supply chains, ensuring responsible sourcing practices and minimizing the environmental impact of production processes.

**PRODUCT LIFECYCLE MANAGEMENT:**

E-commerce companies are exploring ways to extend the lifespan of products, promote reuse and recycling, and reduce the environmental impact of product disposal through initiatives such as take-back programs and recycling incentives.

**CONSUMER EDUCATION**:

E-commerce platforms are raising awareness among consumers about the environmental impact of their purchasing decisions and providing tools and resources to help them make more sustainable choices, such as eco-friendly product options and carbon footprint calculators.

**CERTIFICATIONS AND STANDARDS**:

Some e-commerce companies are seeking certifications, such as B Corp certification and LEED certification, and adhering to environmental standards and guidelines to demonstrate their commitment to sustainability and accountability.

**COLLABORATION AND INNOVATION**:

E-commerce platforms are collaborating with industry partners, government agencies, and non-profit organizations to drive innovation and share best practices for reducing environmental impact across the industry.

By implementing these strategies and initiatives, the e-commerce industry is actively working to minimize its environmental footprint and create a more sustainable future for both businesses and consumers.

**E-COMMERCE IN FUTURE**

The future of e-commerce holds numerous exciting developments and transformations that will shape how we shop, interact with brands, and experience online retail. Here are some potential trends and advancements we might see:

**AUGMENTED REALITY (AR) AND VIRTUAL REALITY (VR) SHOPPING:**

Enhanced virtual shopping experiences will become more common, allowing customers to virtually try on clothes, visualize furniture in their homes, or test products before purchase, enhancing the online shopping experience.

**PERSONALIZATION AND AI-DRIVEN RECOMMENDATIONS:**

E-commerce platforms will increasingly leverage artificial intelligence to analyse customer data and provide personalized product recommendations, creating tailored shopping experiences that anticipate and meet individual preferences and needs.

**VOICE COMMERCE:**

With the growing popularity of voice-activated assistants like Amazon Alexa and Google Assistant, voice commerce will become more prevalent, allowing customers to make purchases using voice commands, streamlining the shopping process.

**SUSTAINABILITY AND ETHICAL CONSUMPTION**:

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ISBN : 978-93-340-1483-9
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Consumers will place greater emphasis on sustainability and ethical considerations when making purchasing decisions, driving e-commerce companies to prioritize eco-friendly practices, transparent supply chains, and ethical sourcing.

**MOBILE COMMERCE (M-COMMERCE):**

Mobile shopping will continue to grow, with more consumers using smart phones and tablets to make purchases on the go. E-commerce platforms will optimize their websites and apps for mobile devices, offering seamless and user-friendly mobile shopping experiences.

**SOCIAL COMMERCE:**

Social media platforms will increasingly integrate e-commerce features, allowing users to discover and purchase products directly within their social feeds. Influencer marketing and user-generated content will play a significant role in driving sales through social commerce.

**INSTANT GRATIFICATION AND SAME-DAY DELIVERY:**

The demand for fast and convenient delivery options will continue to rise, with e-commerce companies offering same-day or even instant delivery services in select locations, meeting consumers' desire for instant gratification.

**BLOCKCHAIN TECHNOLOGY:**

Blockchain technology will be used to enhance security, transparency, and trust in e-commerce transactions, enabling secure payment processing, supply chain traceability, and the verification of product authenticity.

**SUBSCRIPTION SERVICES AND MEMBERSHIP PROGRAMS**:

Subscription-based e-commerce models and membership programs will become increasingly popular, offering consumers convenience, value, and personalized experiences through recurring deliveries and exclusive perks.

**GLOBAL EXPANSION AND CROSS-BORDER COMMERCE**:

E-commerce will continue to facilitate global trade, enabling businesses to reach customers worldwide and consumers to access a diverse range of products from international markets, driving cross-border commerce and globalization.

Overall, the future of e-commerce will be characterized by innovation, convenience, personalization, and sustainability, as businesses adapt to evolving consumer preferences and technological advancements to create more seamless and engaging online shopping experiences.

**CONCLUSION**

In conclusion, while e-commerce offers unparalleled convenience and accessibility to consumers worldwide, it also comes with significant environmental implications. From packaging waste and carbon emissions to energy consumption and supply chain impacts, the e-commerce industry has a notable footprint on the planet.

However, there is hope for mitigating these environmental impacts. E-commerce companies are increasingly adopting sustainable practices such as optimized packaging, green transportation, renewable energy usage, and supply chain transparency. Consumer awareness and education are also playing a crucial role in promoting more sustainable shopping habits.

Moving forward, collaboration between industry stakeholders, innovation in technology and logistics, and a commitment to corporate responsibility will be essential in reducing the environmental footprint of e-commerce. By implementing these strategies and initiatives, the e-commerce industry can strive towards a more sustainable future where convenience and environmental stewardship coexist harmoniously.

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[3] The Environmental Impact of E-Commerce" - This study published in the Journal of Industrial Ecology examines the environmental implications of e-commerce, focusing on carbon emissions and energy consumption: [Journal Article] (https://onlinelibrary.wiley.com/doi/abs/10.1111/jiec.12209)

[4] Greening E-Commerce: A Comparative Analysis of Environmental Impacts and Initiatives" - This research paper explores the environmental impacts of e-commerce and discusses various initiatives and strategies for reducing its environmental footprint:

[5] Sustainable E-Commerce: Environmental Impacts and Potential Solutions" - This article from the International Journal of Environmental Research and Public Health discusses the environmental impacts of e-commerce and proposes potential solutions for achieving sustainability: [Journal Article] (https://www.mdpi.com/1660-4601/17/12/4603)

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ISBN : 978-93-340-1483-9
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# GREEN INVESTMENTS IN THE DIGITAL AGE

(A Theoretical Framework for Unveiling the Synergies for Sustainable Development")

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**Abstract**

**In today's era characterized by rapid digital transformation and escalating environmental concerns, the convergence of green investment and the digital age offers a promising pathway for advancing sustainable development. This paper presents a comprehensive theory that delves into the intricate dynamics between green investment strategies and digital technologies, with the aim of uncovering synergies that propel environmental sustainability, economic progress, and societal well-being.**

**KEYWORDS: uncovering synergies, environmental sustainability, economic progress**

## INTRODUCTION

In the midst of rapid digital transformation, tackling environmental challenges has become paramount. This introduction highlights the crucial intersection between addressing environmental concerns and embracing digital innovation. The paper aims to elucidate the symbiotic relationship between green investment strategies and digital technologies, exploring how their integration can drive sustainable development. Key objectives include uncovering synergies between green investment and digital advancements and examining their implications for environmental sustainability, economic growth, and societal well-being. Through this exploration, we seek to inspire collaborative efforts to leverage digital transformation for environmental progress.

## OBJECTIVES OF THE RESEARCH

- Investigate the impact of digital transformation on traditional approaches to addressing environmental challenges.
- Explore the current landscape of green investment initiatives and digital technologies, identifying key trends and advancements.
- Analyze the potential synergies between green investment strategies and digital technologies for driving environmental sustainability.
- Examine the economic implications of integrating green investment and digital advancements, including cost-effectiveness and financial returns.
- Assess the societal benefits of leveraging digital technologies in green investment, such as inclusivity and community empowerment.
- Identify challenges and barriers to the seamless integration of green investment and digital innovations and propose potential solutions.
- Discuss the implications of the synergistic relationship between green investment and digital technologies for sustainable development goals.

## CHALLENGES

**Data Privacy Concerns:**

The collection and sharing of large volumes of data in digital ecosystems raise concerns about privacy and data security.

Ensuring the protection of personal and sensitive information is essential to maintaining trust and credibility in digital platforms and technologies.

**Digital Divides:**

Disparities in access to digital infrastructure and technology skills create inequalities in the adoption and benefits of digital innovations.

Marginalized communities and underserved regions may be left behind in the digital transformation, exacerbating social and economic disparities.

**Cyber security Risks:**

The interconnected nature of digital systems and reliance on internet connectivity expose organizations to cyber threats and attacks.

Protecting digital assets and critical infrastructure from cyber threats requires robust cyber security measures and constant vigilance.

**Limited Scalability:**

Traditional sustainability initiatives often struggle to scale up to meet the demands of growing populations and expanding industries.

Resource constraints and logistical challenges hinder the widespread adoption of sustainable practices and technology

## CURRENT TRENDS

**Rise of Green Finance Initiatives**:

The expansion of green finance initiatives reflects a collective response to the pressing need for sustainable development. Governments, financial institutions, and businesses are increasingly channelling investments into projects with positive environmental impacts, such as renewable energy, green infrastructure, and sustainable agriculture.

This surge in green finance initiatives underscores a growing recognition of the importance of addressing environmental challenges and transitioning towards a more sustainable and resilient future.

**Digitalization's Catalytic Role**:

Digitalization plays a crucial role in driving innovative solutions that intersect with green investments, bolstering efficiency, transparency, and scalability. By harnessing digital technologies, businesses and industries

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ISBN : 978-93-340-1483-9
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can optimize processes, reduce waste, and enhance sustainability.

This digital transformation enables real-time data access, fostering transparency and trust among stakeholders. Moreover, digital solutions are inherently scalable, allowing for widespread adoption and impact.

**Integration of Case Studies**

Case studies like Tesla's Power wall, Maersk's IoT integration, IBM's Food Trust platform, and Barcelona's Smart City initiative vividly illustrate how digital technologies bolster green investments.

From efficient energy storage to sustainable supply chains and smart urban, these examples highlight the transformative potential of digitalization in sustainability and economic growth

**KEY SYNERGY TOOLS IN GREEN INVESTMENT**

**Block chain technology**

Block chain technology acts as a transparent and tamper-proof record-keeping system, enabling the tracking and verification of green investment transactions like renewable energy certificates and carbon credits

Its decentralized nature ensures trust and reduces the risk of green washing by providing a reliable source of information, fostering accountability, and facilitating genuine sustainability initiatives through transparent and auditable processes.

**Digital twin technology**

Digital twin technology generates virtual models mirroring real-world assets, facilitating continuous monitoring and simulation

It enables the optimization of energy usage, identification of resource-saving opportunities, and promotion of sustainability in built environments,

**Data analytics and artificial intelligence**

Data analytics and AI empower investors by analysing extensive datasets encompassing environmental, social, governance (ESG) criteria etc

By leveraging these insights, investors can, evaluate associated risks, and allocate portfolios to achieve dual objectives: optimizing financial returns while positively impacting the environment through responsible investment decisions.

**REGULATORY SUPPORT AND STANDARDS**

**Implementing Green Finance Policies**:

Regulatory bodies can introduce policies and incentives to promote green finance and sustainable investment practices. This may include measures such as tax incentives, subsidies, or preferential treatment for investments in renewable energy, energy efficiency, sustainable infrastructure, and other environmentally beneficial projects.

**International Cooperation and Coordination:**

Given the global nature of environmental challenges, policies that promote international cooperation and coordination are essential for maximizing the impact of green investment efforts. This may include harmonizing standards and regulations, sharing best practices, and mobilizing financial resources for sustainable development projects in developing countries.

**Carbon Pricing Mechanisms:**

Governments can implement carbon pricing mechanisms, such as carbon taxes or cap-and-trade systems, to internalize the costs of carbon emissions and incentivize investments in low-carbon technologies and renewable energy sources. Carbon pricing helps create a level playing field for green investments and provides economic signals that drive innovation and emission reductions.

Overall, effective policies on synergies in green investment in the digital age require a holistic approach that integrates financial incentives, regulatory frameworks, technology innovation, and international cooperation. By aligning policies with sustainability objectives and leveraging the opportunities presented by digital technologies, governments can accelerate progress towards a more resilient, inclusive, and environmentally sustainable future.

**CONCLUSION**

The unveiling of synergies for sustainable growth through green investment in the digital age represents a pivotal opportunity to address pressing environmental challenges while driving economic prosperity and societal well-being. The intersection of green investment and digital innovation offers transformative potential, enabling stakeholders to leverage technology, collaboration, and innovation to accelerate progress towards sustainability goals.

Through the integration of digital technologies such as blockchain, IoT, AI, and data analytics, green investments can be made more transparent, efficient, and impactful. These technologies facilitate real-time monitoring, optimization, and decision-making, empowering investors, businesses, and policymakers to identify opportunities, assess risks, and maximize both financial returns and positive environmental outcomes. Moreover, regulatory support, policy incentives, and international cooperation are essential for creating an enabling environment for synergies in green investment. Ultimately, the convergence of green investment and vitalization offers a pathway towards a more sustainable, resilient, and inclusive future.

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ISBN : 978-93-340-1483-9
29th February 2024

# THE EMERGENCE OPPORTUNITIES AND CHALLENGES IN GREEN FINANCE

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**Abstract:**
**This study explores the complex interconnection between opportunities and challenges presented by digitalization in promoting environmental sustainability through green financial. This analysis reveals complex synergies between digitization and green finance, highlighting their implications for transparency, market efficiency, impact measurement, investment diversification, and innovation. However, these synergies challenges such as data security and regulation, requiring a responsible approach. Data privacy and regulatory challenges stand out as significant obstacles to a successful transition to greener and more sustainable finance. This article contributes to understand the relationship between green finance, and economic sustainability. Our analysis encourages continuous reflection and determined action to build a more sustainable future.**
**Keywords: Innovation; Green Finance; Economic Sustainability; Technological Challenges.**

## INTRODUCTION

In combination with the characteristics of green and digital finance, the GDF can be analyzed in relation to the greening of digital finance, which mainly involves the consideration of environmental risks in digital financing and investment projects, and in relation to the digitalization of green finance, which mainly refers to the use of digital technology or tools to pursue innovation in green, environmentally friendly financial products and services. There is no internationally agreed definition of green finance. The term describes a broad range of financing for environmentally oriented technologies, projects, industries or businesses. A narrower definition of green finance refers to environmentally oriented financial products or services, such as loans, credit cards, insurance, or bonds.

1. Green investing recognizes the value of the environment and its natural capital and seeks to improve human well-being and social justice while reducing environmental risks and improving environmental safety.
2. Other terms used to describe green finance include "environmentally responsible investing" and "climate change investing".

**Financing green projects**

New financial instruments such as green bonds, carbon market instruments such as carbon tax, and new financial institutions such as green banks and green funds are being created to finance green projects. Until now, green bonds have been the main source of funding for green initiatives in India. India is the second largest emerging green bonds market after China in terms of the value of green bond issuance. Yes Bank introduced India's first infrastructure green bond in 2015.

**Green finance products**

- Green Bonds
- Green Loans
- Sustainability-Linked Bonds and Loans
- Green Equity Funds
- Green Mortgage
- Green Certificates and Guarantees
- Impact Investment Funds
- Green Microfinance
- Carbon Offsets and Credits
- Green Insurance Products

## REVIEW OF LITERATURE

A review of literature on green finance reveals a growing body of research spanning various disciplines, including finance, economics, environmental studies, and policy analysis. Scholars have examined diverse aspects of green finance, ranging from its conceptual foundations to its practical implementation and impact on financial markets and the environment.

Green finance underscores the multidimensional nature of the field and the need for interdisciplinary approaches to address its challenges and opportunities effectively. It provides valuable insights for policymakers, practitioners, and researchers seeking to promote the transition to a more sustainable and resilient global economy through green finance initiatives.

## OBJECTIVES OF THE STUDY

- To study the future of green finance in Indian market.
- To know the various opportunities and challenges in green finance.
- To provide suggestion for a good green finance in digital era.

**Methodology**

The study is mainly studied through the secondary data. It examined theoretical perspectives and challenges and accelerates the transition to greener, more sustainable finance. By employing this methodology, we were able to offer a comprehensive and balanced analysis of the issues involved in digitizing green finance,

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ISBN : 978-93-340-1483-9
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highlighting opportunities and theoretical solutions that can contribute to a more sustainable economy.

**Opportunities in green finance**

**Renewable Energy:** Investments in renewable energy sources such as solar, wind, hydro, and geothermal power offer significant opportunities for financial returns while reducing carbon emissions and dependence on fossil fuels.

**Energy Efficiency:** Financing energy-efficient technologies and projects in buildings, transportation, and industries can lead to cost savings, improved productivity, and reduced greenhouse gas emissions.

**Sustainable Infrastructure:** Funding sustainable infrastructure projects, including public transportation, smart cities, green buildings, and water management systems, can enhance resilience, promote economic development, and mitigate climate risks.

**Carbon Markets:** Participation in carbon markets and trading mechanisms enables companies to monetize emission reductions, incentivize innovation, and comply with regulatory requirements while investors can benefit from trading opportunities and price volatility.

**Natural Capital Investments:** Investing in projects that protect and restore natural ecosystems, such as reforestation, sustainable agriculture, and conservation initiatives, can generate financial returns while preserving biodiversity and ecosystem services.

**Challenges in green finance**

**Lack of Standardization:** There's a need for standardized definitions, metrics, and reporting frameworks to assess the environmental impact of investments accurately.

**Market Fragmentation:** Green finance initiatives are often fragmented across different regions and sectors, hindering scalability and effectiveness.

**Risk Assessment:** Assessing the risks associated with green investments, including regulatory, market, and technology risks, can be complex and uncertain.

**Cost Competitiveness:** Green investments may have higher upfront costs or lower returns compared to traditional investments, making them less attractive to some investors.

**Capacity Building:** There's a need to build expertise and capacity among financial institutions, investors, and policymakers to effectively navigate green finance opportunities.

**Future of green financing**

In future green finance can anticipate several key developments in the green finance landscape. Firstly, there will likely be a surge in investments directed towards renewable energy, clean technology, sustainable infrastructure, and other environmentally friendly projects. This influx of capital will be driven by a combination of factors, including regulatory incentives, investor demand, and technological advancements that improve the viability and cost-effectiveness of green solutions. Moreover, we can expect to see greater collaboration between governments, financial institutions, and businesses to develop standardized frameworks for assessing and reporting the environmental impact of investments. This will enhance transparency, facilitate risk management, and enable investors to make more informed decisions about allocating capital towards sustainable initiatives. Furthermore, advancements in financial innovation, such as green bonds, sustainable investment funds, and carbon pricing mechanisms, will continue to expand, providing investors with a broader range of opportunities to support environmentally responsible projects while generating financial returns. Overall, the future of green finance holds immense potential to drive positive change, foster innovation, and accelerate the transition to a more sustainable global economy. However, realizing this potential will require concerted efforts from all stakeholders to overcome challenges, promote collaboration, and mobilize resources towards achieving shared environmental goals.

**Conclusion:**

Despite these challenges, the growing awareness of environmental and social issues and the increasing demand for sustainable investments are driving efforts to overcome these obstacles. Governments, financial institutions, and organizations are working to create a more supportive and transparent ecosystem to facilitate the transition to a more sustainable and responsible economy. Collaboration between government, academia, and industry, advocacy for new policies and public-private partnerships are necessary to ensure the effective implementation of innovative green financing mechanisms to promote the transition to a net zero economy by 2070.

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IC- TSI 2024
ISBN : 978-93-340-1483-9
29th February 2024

# DIGITAL TRANSFORMATION ADVANCING THE FUTURE OF THE E-COMMERCE INDUSTRY

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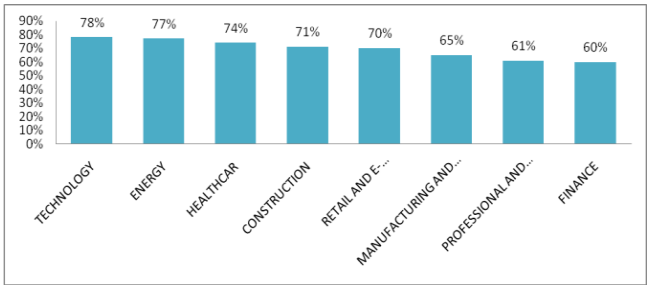
***Abstract*— "Digital transformation" The pandemic expedited the digital transformation of industries, even if it was already happening earlier in several sectors. According to a Statista analysis, in response to COVID-19, the technology and energy sectors have advanced their digital transformation processes at the fastest rates respectively. But, post-pandemic, digital transformation in the eCommerce and retail sectors has increased.**

## INTRODUCTION

By 2023, digitally transformed businesses are expected to represent $53.3 trillion of the nominal GDP of the world. This demonstrates unequivocally how important digital transformation is to the world economy. While automation helps to increase process efficiencies, digital transformation is positively influencing the creation of improved consumer experiences. Stated differently, businesses that are keeping up with the digital revolution will undoubtedly make greater economic contributions.

The advantages of digital transformation are generally acknowledged and discussed. But the rapid shift brings with it the problem of cultural and skill disparities. Lack of understanding of transformation methods and haphazard, insufficient departmental alignments within a company are the main causes of friction.

Since the epidemic began, the globe has witnessed the most significant digital revolution in the area of shopping. Of course, shopping at a physical store is a very different experience. However, the consumer may now select from a greater selection of things at lower rates than ever before thanks to online comparison shopping for the store's inventory. Even when a customer visits a physical store these days, they swiftly peruse the eCommerce website to compare prices, products, and varieties.




### HOW COVID-19 PANDAMIC SPED UP DIGITAL TRANSFORMATION ACROSS INDUSTRIES

### FACTORS DRIVING DIGITAL TRANSFORMATION IN ECOMMERCE:

Online shopping is become a common occurrence. It is customary to browse things online and decide what to buy. But if you want to grow your eCommerce company, you must embrace digital transformation because trends are shifting. These are the fundamental demands of today's consumers that are propelling the digital transformation of the eCommerce sector.

***Growing demands from customers***

Brand loyalty has been surpassed by convenience in eCommerce adoption trends. These days, customers want faster order delivery, more convenient pick-up and drop-off options, more affordable prices, and simple return policies. The firm is being forced to choose for newer technology in order to stay up with the speed of client requests due to these always rising expectations and needs.

***Direct-to-consumer strategies***

Brands are currently searching for ways to sell directly and favoring direct-to-consumer tactics due to the growing competition. By providing clients with the option to engage directly with the brand on their own platform instead of using aggregator online shopping platforms, businesses can reduce expenses, provide customers with better prices, and increase income. Additionally, consumers who engage with brands directly benefit from improved product experiences.

***Robust delivery systems***

Online shopping made it simple for customers to return items that were delivered incorrectly or with defects. The consumer now expects, though, to receive the correct order at the right time on the first try due to rising requests. Inaccurate order deliveries could turn off clients, which would hurt business. Therefore, having a strong supply chain and delivery system is one of the key criteria that motivates firms to choose digital transformation.

### HOW IS DIGITAL TRANSFORMATION TRANSFORMING THE ECOMMERCE INDUSTRY

Digital transformation is the process of bringing new technology into old processes to bring them back to life. In the context of the retail sector, this entails self-checkout, contactless ordering and payments, online ordering, cost optimization, product customisation, and much more. These are a few examples of how the eCommerce sector is changing due to digital revolution. To learn more, investigate how digital transformation might lower your company's expenses.

***Using augmented reality to aid in decision-making***

The technology known as augmented reality lets customers see the product where it's meant to go. For instance, with the use of augmented reality, you may choose a piece of furniture and see how well it fits into your space and décor at IKEA, a well-known furniture company. This makes it easier for customers to select and purchase the appropriate furnishings without having to navigate between platforms in order to make the best decision the first time.

***The merchandising algorithm***

This function aids in choosing the price and promotion strategies as well as optimizing the store's inventory based on the demands of the locality. Throughout the process, all of the aforementioned

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ISBN : 978-93-340-1483-9
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measures guarantee precise inventory management that significantly maximizes sales, profitability, and customer happiness. These algorithms improve effective and efficient decision-making by utilizing sophisticated data and analytics in their creation. It is simple to carefully plan operating expenses, logistical difficulties, and inventory management to satisfy client demands when using algorithmic sales.

***Purchasing without a contact***

In order to improve customer safety and facilitate contactless payments, the epidemic has compelled shops to offer a contactless buying experience. This has improved online shopping. This has also highlighted the necessity of giving consumers a tailored online experience that demonstrates a dedication to the end user and results in a positive customer experience.

***Personalized recommendations***

The use of AI has improved the intelligence of eCommerce procedures. Knowing client behavior, preferences, and choices and making product recommendations based on that knowledge undoubtedly gives the impression of personalization.

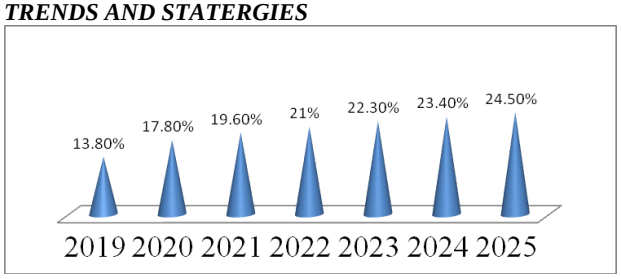
***Improved understanding of consumer behavior***

The digital transformation strategy's treasure trove is data. By more accurately predicting demand, algorithms can assist shops in getting ready and making the most of recently created opportunities. The eCommerce company may break down the process with seamless interfaces, gaining superior insights on several steps from market demand to inventory to supply to productivity and much more. Gaining more insight into consumer behavior can be mined to extract minute-by-minute facts. Finding the best-selling product, the marketing initiative with the highest return on investment, and so forth are a few examples. It goes without saying that comprehension of these details can lead to improved personalization.

## TRENDS IN ECOMMERCE DIGITAL TRANSFORMATION

The latest trends are a necessity for those who want to stay ahead in the competitive landscape. Additionally, providing an extraordinary customer experience has become a part and parcel of trends. Let us understand the leading trends of eCommerce digital transformation and understand the future prospects of what and why of these changes in the trends.

***TRENDS AND STATERGIES***




***Automation*:** Automation is one of the major techniques adopted by businesses in all sectors. eCommerce too, is rapidly expanding its horizons, covering every department from marketing to warehousing, supply chain management, and many more.

***Chatbots***: AI and chatbots have made their prominent place in the digital transformation process. Providing personalized experiences has become easier by answering the customer queries in no time, making the customer feel special. It is expected to continue to cater to the market with changing trends ensuring to meet the customer's requirements without fail.

***ECommerce interactive goods*:** The icing on the cake may be the eCommerce industry's use of augmented reality, which can offer immersive experiences. providing consumers with a virtual environment that is akin to the real one, allowing them to make decisions about the brands and products to purchase. Online buyers who have access to AR experiences are more likely to purchase from eCommerce platforms (61%).

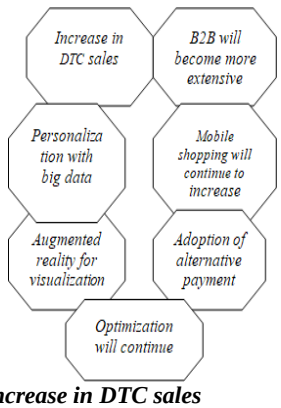
***Social trading:*** Social media sites serve as both communication tools and, in certain cases, as online storefronts. On social media sites like Facebook, online merchants provide the complete shopping experience, from product delivery to online payments. In the foreseeable future, this trend will only continue to increase in an upward direction. According to Statista, social media platforms will generate $2.9 trillion in revenue by 2026, compared to $992 billion in sales expected for the current year.

***Pay later, buy now:*** The most popular choice among millennials, BNPL offers several advantages along with flexibility and freedom of buying. The consumer who chooses this payment option can save money on credit card interest costs. Additionally, they have the power to buy goods that might not have been within their means otherwise. According to a research, by 2025, the global BNPL industry's transaction value might reach $680 billion.

***Web apps that are progressive****:* Similar to native mobile applications is this technology. Nonetheless, web technologies like HTML, CSS, and JavaScript are used in its construction. Push notifications, access through the smartphone's home screen, and offline application access are some of its main features. eCommerce behemoths like Alibaba and Walmart are prime instances of successful digital transformation; they have been using progressive web apps to increase conversion rates and improve revenues. Using Progressive Web Applications (PWAs) can result in a 93.3% boost in conversion rates.

## IMPACT OF DIGITAL TRANSFORMATION ON THE FUTURE OF THE ECOMMERCE INDUSTRY

Digital transformation is an ever-evolving process, especially in the eCommerce industry. It is mandatory for eCommerce businesses to stay updated with the new trends, customer expectations, and behaviors to strategically transform their eCommerce business. some of the ways that will change the future of the eCommerce industry.




***Increase in DTC sales***

With digital eCommerce, it has become easier for businesses to reach out to direct customers bypassing the link of wholesalers. Direct-to-consumer (DTC) enables online sellers to understand their customers better, enabling them to increase their business revenue.

DTC will enable the brands to customize and personalize the products as per the demand of the consumers. Interacting directly with customers will also help offer better support, thus creating a better customer experience and brand loyalty.

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Building a new customer base with the brand campaigners that are created because of better CX, will lead to a larger customer base.

***Personalization with big data***

A big part of any organization's digital transformation involves moving to the cloud. Cloud computing offers incredible advantages to organisations, especially eCommerce businesses. With big data, machine learning, and artificial intelligence powered by cloud computing, offering a personalized experience is much more effortless. The big data algorithms will understand the past shopping behaviours of the customer, providing them with the options of bespoke products and relevant recommendations.

***Augmented reality for visualization***

Many retailers have already adopted this technology to provide a top-class customer experience and earn the brand loyalty of the customers. For others, it is the next big thing in the future of the eCommerce industry. Getting the feel of the product in real-life situations provides confidence to the customers in the purchases they are making. eCommerce industry growth is all set to augment this feature of digital transformation.

***Optimization will continue***

As mentioned earlier, data will be the key to the future of the eCommerce industry. Understanding the conversion rate and optimizing the products will continue and enhance in the future. Easing the customer journey at every step of the process is likely to increase the conversion rate. eCommerce industry growth is quite dependent on the conversion rate, in other words, optimization.

***Adoption of alternative payment methods***

The use of credit cards has become a traditional method of payment. The future of eCommerce will have multiple alternative methods of payment options like blockchain-based payment such as Bitcoin, Ethereum, and options of buy-now-pay-later (BNPL) will become the norm in the future of the eCommerce industry.

***Mobile shopping will continue to increase***

A survey clearly shows that retail mobile shopping, also termed eCommerce, is expected to reach $728.28 billion by 2025. The consumer is becoming addicted to mobile shopping because of the attractive user interface, great choices, and ease of shopping. The trend is likely to continue. However, organizations need to ensure that they continuously evolve technologically to keep the customers

engaged and to ensure that the customers keep coming back to them for new and better experiences.

***B2B will become more extensive***

It is predicted that the B2B eCommerce industry is expected to grow at a CAGR of 18.7% from 2021 to 2028. The market was valued at $6.64 trillion in 2020. With digital transformation in eCommerce, most of the B2B eCommerce websites are focusing on providing an intuitive, modern, and unique customer experience.

## CONCLUSION

The digitalization has dramatically influenced the e-commerce industry and is expected to do so over the years to come. As digital technology evolves, so does its impact on various industries. Technologies like artificial intelligence and automation have found their roots in the e-commerce industry and provide many benefits to it.

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IC- TSI 2024
ISBN : 978-93-340-1483-9
29th February 2024

# INTUITION OF STUDENTS TOWARDS INNOVATION IN EDUCATION THROUGH EDTECH APPLICATION

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***Abstract*— Edtech industry is one of the grooming industries in India. Edtech industry is the second biggest on the world and its only rising. Indian youth is also driven towards the use of edtech application for not only enhancing knowledge skills but also plan for their future career development. The perception of the study is understanding the influencing factors while using edtech platform. The finding of the result reveals that overall respondent taken for study very highly satisfied with the services quality and concluded that e-learning application technology has improved the education system among many students.**

***Keywords*: e-learning, service quality, edtech application**

## I. INTRODUCTION

The technology or e-learning application industry is growing rapidly in today's world. Today, learning is not limited to the classroom, but has moved to interaction with virtual teachers and interactive learning tools. India has more than 250 million students in 1.3 million schools and more than 15 million examinees every year. As the technology of the education system evolves, students are offered interactive courses and learning methods.

One of the industries that has taken the lead in this development is educational technology, or commonly known as the EdTech industry. The Association for Educational Communication and Technology (AECT) has defined educational technology as "a learning and ethical practice that facilitates learning and improves performance through the creation, use and management of appropriate technological processes and resources."

Today, most people prefer to learn through EdTech applications. We have 600 million people under the age of 25, or more than half of the total population, so we have the highest concentration of young people in the world. Indian youth are one of the biggest consumers of these EdTech applications. By providing real-time learning and insight, these platforms can help achieve futuristic goals. In addition, there is a growing number of people who are addicted to smartphones and rely solely on smartphones to access the Internet (Anderson and Horrigan, 2016) instead of more expensive devices such as laptops and tablets.

This shift in the industry has also paved the way for innovative and hands-on learning. Today, youngsters are not limited to the traditional way of learning only through the curriculum but also believe in improving their knowledge and preparing for competitive exams.

BEST ONLINE LEARNING AND EDUCATION APPS IN INDIA

## II. STATEMENT OF THE PROBLEM

e-learning is growing rapidly in India as more and more educational institutions, teachers and students are using the online platform for learning. Indian teachers use both traditional and modern strategies in teaching. Blended learning, which uses both traditional and modern strategies, is becoming common. Today's teachers are expected to be technically competent in the use of modern classroom technologies. Slowly but steadily, India's 4,444 classroom are getting smart. Students are trained in information technology from the basic level. As the interest and related technologies become cheaper more common, more students can use m-learning.

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ISBN : 978-93-340-1483-9
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## III. OBJECTIVES OF THE STUDY

- To examine the innovation of e-learning factors among students towards the services provided by edtech platform.

## RESEARCH METHODOLOGY

The present study was descriptive in nature. It focuses on overall technology innovation used in education for the students at Coimbatore district. In order to obtain objectives of the study both primary data and secondary data were collected and used. Primary data were collected from 100 respondents through well-structured questionnaire and secondary data were collected from various website. Simple random sampling techniques have been used such as percentage and chi-square has been applied.

| *FACTORS* | *FREQUENCY* | *PERCENTAGE* |
|---|---|---|
| Never used | 10 | 7 |
| **Total** | **150** | **100** |

## REVIEW OF LITERATURE

- Don Knesek (2008), integrating technology into education has the following effects: The research findings show that technology is successfully incorporated into instruction and learning, and that this is improving student achievement on tests scores as well as the development of 21st century abilities. Providing a solid foundation of technology-based skills to the current generation so they can compete globally.

- Escueta, Maya, Nickow, Oreopoulos, and Quan 2020 examines solid data regarding the efficacy of technology-based teaching methods in affluent nations and identifies research directions. They specifically look at studies on regression discontinuity and randomized controlled trials in relation to the following areas of educational technology: (i) computer-assisted learning, (ii) online learning, (iv) technology-enabled behavioral interventions in education, and (iii) access to technology.Their work has advanced our understanding of how technology might enhance education, identified important topics for future experimental research, and sparked changes to the structures, policies, and programs that support effective teaching and learning.

## . DATA ANALYSIS AND INTERPRETATION

perception of students towards influencing factors provided by various e-tech platform

TABLE I. **REASON TO USE EDTECH APPS**

| *FACTORS* | *FREQUENCY* | *PERCENTAGE* |
|---|---|---|
| Competitive exam | 85 | 57 |

Source: primary Data

From the above table it is understood that out of total respondents taken for study, 57% of the respondent are using edtech application for preparing competitive exam,23% of the respondents are using edtech app for syllabus course study, 13% of the respondents are using edtech app for enhancing knowledge skills and 7% of the respondents are never used edtech apps.

## IV. CONCLUSION

In this study we looked technology based personal learning in Coimbatore City regarding different educational e-learners BYJU'S and UNACADEMY and VEDANTU or topper and DUUBNUT. The following conclusions were drawn from study Yesterday's luxuries are today's necessities. Today, there are many educational service providers in the market and they have provided various educational services to school children, competitive exam preparers and students. But users prefer to use the services of their favorite service providers for several reasons. It was found that high level, teacher's voice, video quality, presentation, class participation, attendance, exposure to technical problems, strict level, time discipline, misleading education, level of punishment, test set quality, progress report quality and these factors are considered for students to decide on online learning.

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| | | |
|---|---|---|
| Syallabus course study | 35 | 23 |
| Enchancing knowledge skills | 20 | 13 |

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ISBN : 978-93-340-1483-9
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# *INFLUENCE OF SOCIAL MEDIA AND AWARENESS TO BINGERS IN SPECIAL REFERENCE WITH COIMBATORE CITY*

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*Abstract*—social media is all about 3C's. Conversations, Community, connecting with people and building relationships. It is not just a broadcast channel or a sales and marketing platform. privacy, honestly and open dialogue are key. The huge disadvantage of social networking is that it reduces or excludes face-to-face socialization. All you need is to know what your limitations are and how to get the best of this hyped social media!

## I. INTRODUCTION

Social media is a common term that is being vastly misused a lot these days, but it is seldom understood by all! Social media became the point of communication for like-minded persons who share, create or exchange information or ideas online. However, is it safe to be a part of social media? That is the big question here! The huge disadvantage of social networking is that it decreases or excludes face-to-face socialization.

In addition, it also talks about how the concentration of employees has reduced the productivity as they are too busy updating their statuses or are checking their likes and friends list. The photographs that are posted on the social media are also not safe as they are morphed/tampered and misused for illegal activities. And, if your account on the social media is hacked, then all your privacy is lost. All your vital information is leaked online or used for illegal activities. With all these disadvantages being discussed, social media marketing is a still a good way to do business marketing in certain industries. All you need is to know what your limits are and how to get the best of this hyped social media! So, are you ready to join the world of social media?

## II. OBJECTIVES OF THE STUDY

1. To analyse the influence and level of addiction of social media.
2. To know the benefits, perks, and insecurities of media platforms.
3. To give remedies for the victims about the cybercrime happening.
4. Bring up the efficiency in social media.
5. To help students identify various platforms in social media to perform.
6. To prevent themselves from the cyber-crime.

## III. STATEMENT OF THE PROBLEM

Internet addiction is a contemporary problem brought about by easy access to computers and online information. In extreme cases, persons addicted to the Internet may be destructive to themselves, their families, and their place of employment. This study examines research trends in Internet addiction and provides management implications for policy development and planning. This study should be of interest to educators at academic institutions, students interested in institutions offering Internet addiction courses and programs, and researchers specializing in online addiction studies. Clinical psychologists, behavioral counselors, psychiatrists, clergy, and addiction therapists will find the results of this study useful. Corporate attorneys dealing with addiction cases, human resource specialists seeking rehabilitation facilities for addicted employees will find the results of this study to be valuable.

## IV. SCOPE OF THE STUDY

1. High number of fans does not equal success.
2. The popularity of a platform may matter more thanwhich platform is a suitable medium for your campaign.
3. Protection of user's privacy limits data collection.
4. Data is fragmented by platform.
5. The scope of the study has been limited to students only.
6. It helps to find out the knowledge and attitude of students towards excess social media usage.
7. The study helps to analyze the awareness of excessive social media usage among students.

## V. SIGNIFICANCE OF THE STUDY

1. Social media platforms have become influential channels for disseminating information.
2. Platforms such as Facebook, Instagram, and Twitter facilitate the creation of communities and support networks.
3. Social media platforms allow for real-time feedback.
4. Social media platforms have revolutionized communication.
5. Social media has become a major source of news and information dissemination.
6. It provides a platform for individuals to express their thoughts, opinions, and creativity freely.

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ISBN : 978-93-340-1483-9
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7. It offers targeted advertising, customer engagement, and real-time feedback, allowing businesses to reach wider audiences and build brand awareness.
8. This media platforms facilitate collaboration and crowdsourcing efforts by bringing people together to collectively solve problems.
9. It has the power to shape opinions.
10. Social media platforms offer opportunities for personal and professional branding.

## VI. LIMITATIONS OF THE STUDY

1. This study has been confined to students in Coimbatore only.
2. Questionnaire was given about 75 respondents.
3. This study takes the sample size of 50 respondents from Coimbatore in Tamil Nadu.
4. This study is taken only among students in Coimbatore city.
5. This study is taken among colleges in Coimbatore city surroundings.
6. It takes good analysis on the part of marketers to trace a link between ROI and social media
7. (Alarming trend) social media websites have become notorious for students.

## VII. RESEARCH METHODOLOGY

For study Stratified sampling method is used to randomly finalize from the selected samples. The sample size is limited to 25 respondents. Correlation, Chi-Square, descriptive analysis is used to analyze the influence of social media among teenagers.

This section will explain the research methodology used for the research under study. The overall design or strategy that helps in obtaining the desired goals and objectives of the research is referred to as research methodology. It is basically a confirmation that the problem under study has been analyzed and addressed thoroughly. This gives effectiveness and completion to the research. The research methodology includes research design, data collection, reliability and validity, analysis of data and ethical issues involved in the research process.

## VIII. TOOLS USED FOR THE STUDY

The showing statistical tools were applied to analyze the data collected through questionnaire:

- Percentage analysis
- Chi-Square analysis
- Standard Deviation

## IX. REVIEW OF LITERATURE

**According to Wellman (1996)**, “When computer networks link people as well as machines, they become social networks, which we call computer-supported social networks (CSSNs)”.

**According to Hagel (1999),** “Virtual communities are defined by bringing people together with a common set of needs or interests. Those needs or interests could span a variety of dimensions. Virtual communities could be organized around an area of interest (such as sports or stock investments), a demographic segment (certain age groups within the population), or a geographic region (metropolitan areas)”

**According to danah Boyd (Researcher and Author)(2007)** "Social media are web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system."

**According to (Kaplan & Haenlein (2010),** “Social Media is a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of User Generated Content”.

**According to Andreas Kaplan and Michael Haenlein (Marketing Professors) (2010)** "Social media is a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of user-generated content."

**According to Nancy Baym (Communication Scholar) (2010)** "Social media refers to a variety of Internet-based platforms and tools that allow individuals, groups, and organizations to create, share, and interact with content and each other through the use of comments, messages, posts, and multimedia.”

**According to Kietzmann et al (2011),** “Social media is a honeycomb of seven functional building blocks: identity, conversations, sharing, presence, relationships, reputation, and groups”.

**According to Zizi Papacharissi (Communication Scholar) (2011)** "Social media are online platforms that facilitate the creation and exchange of user-generated content, enabling users to interact with others and participate in virtual communities."

**According to Tuten and Solomon (2015),** “Social media are the online means of communication, conveyance, collaboration, and cultivation among interconnected and interdependent networks of people, communities, and organizations enhanced by technological capabilities”.

**According to Jennifer Golbeck (Computer Scientist) (2015)** "Social media refers to websites and applications that enable users to create and share content or participate in social networking."

**According to Christian Fuchs (Media and Communication Scholar) (2017)** "Social media are digital platforms that allow users to create, share, and discuss content, and engage in social interactions with others."

## X. DATA AND INTERPRETATION

The term covered in this study are social media usage and the purpose that social media is used for educational, finding people, entertainment, expressing thoughts, memes. Each aspect was coded according to the criteria of social media in this study.

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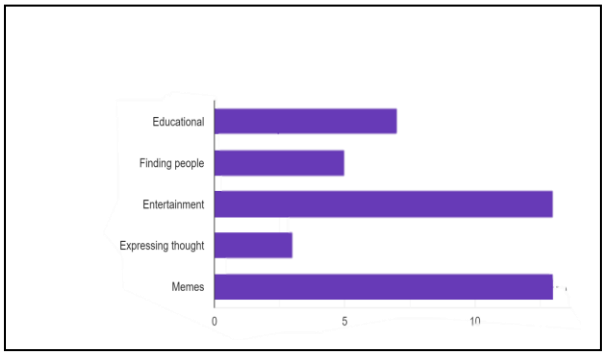
**1. Is Social Media Used for Connecting with People?**

**Percentage analysis:**

| ASPECTS | RESULTS |
|---|---|
| Educational | **25** |
| Finding people | **10** |
| Entertainment | **30** |
| Expressing thoughts | **5** |
| Memes | **30** |




**INTERPRETATION:**

From the above table, it is clearly shown that people who use social media for educational purpose are 36.8%, for finding people are 26.3%, for entertainment are 68.4%, for expressing thoughts are 15.8%, for memes are 68.4%. Thus stated, people use social media for entertainment purpose majorly.

**Chi-Square Analysis:**

| Respondents | Entertainment | Education | Finding people | Expressing thoughts | memes | Total |
|---|---|---|---|---|---|---|
| Users | 13 | 9 | 8 | 7 | 13 | 50 |
| Non-users | 12 | 10 | 9 | 7 | 12 | 50 |
| | | | | | Total | 100 |

The chi-Square equals 4.000 with 1 degree of freedom. The two-tailed P value equals 0.0455. The association between rows(groups) and columns(outcomes) is strategically significant.

*Calculations:*

***Standard Deviation:***
***Calculation details:***
N: 14
M: 2.64
SS:19.21
$s^2$ = S/ (N – 1) = 19.21/ (14.1) = 1.48
S = $\sqrt{s^2}$ = √1.48 = 1.22
Standard Deviation = 1.21574.

## XI. CONCLUSION

Despite articles on social media and its influences in the society with less focus on female students, this unique study carefully examines the impact of social media usage on female students' social lifestyle. The study was able to discover diverse impacts of social media usage both positive and negative which are a result of advancement in modern technology. The findings highlight include the followings; social media refines how females' students think, interacts, communicates, fall in love, their social lifestyle and many more. Appropriate recommendations were made which includes; making social media culture oriented, female students spending less time on social media in order to avoid addiction, female student should limit believing everything they read and watch on social media sites and people should stop making abusive comments and sending unethical videos on social media.

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IC- TSI 2024
ISBN : 978-93-340-1483-9
29th February 2024

# The Impact of Social Media Influencers on Regional Personal Care Product Buying Intentions

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***Abstract*— Personal care goods are growing annually even in the red ocean market these days. Personal care businesses must adapt to the changes of the digital age if they hope to thrive. The usage of digital marketing is one method. Influencer marketing on social media is one of the many popular approaches to digital marketing. But since there are so many new social media influencers, it can be difficult for marketers to select the best ones to utilize to promote their goods because not all of them have a big enough impact. The company could lose money and damage the reputation of a product or brand if the wrong influencers are selected. On the other side, picking the appropriate influencers could boost the product's popularity and sales. Based on this, the research aims to identify the kind of influencers who complement the supplied product by examining the influencers from the perspective of the consumer. The present study draws upon existing literature to demonstrate the favorable impact that influencer credibility has on customers' purchase intentions, attitudes towards items, and advertising. The findings indicate that an influencer's credibility is determined by their attractiveness, reliability, and level of knowledge. It is recommended that future researchers make use of perceived expertise and other variables that can facilitate deeper analyses that result in customer opinions. In the direction of an influencer-made fashion product ad in later research with other groups. Subsequent research with different population sizes and types can subsequently make use of the analysis model employed in this work.**

**Keywords:**
**Information Technology, Learning Platform, FMADM, Covid-19 Pandemic.**

## I. INTRODUCTION

The dependencyoninternetandsocial mediaplatformsintherecent decade madeadvertisingto getanewface.Inrespecttocustomers'appetiteforproducts,variousitems areappealing.Experienceofstrongcustomers'intrinsicandextrinsicflavourinfluencesbyeasinghabitsandinterests overtime.Advertisingthereforeaffectscustomers'tastesanddesiresinaconcreteway.Thesedays peopleareconnectedtoeachotherandspendmostoftheirtimeononlinesitesorapplications.This has it all: the budget, andit's accepted byeveryone. However, it offers many avenues for small and largebusinessestogenerateprofit.Inadditiontodesigning,themanufacturersarenowwidening their categories of customers' desires and expectations by consciously involving them . Personal sharing, particularly through the internet, has a major effectin the 21st century . Past few years have marked a great shift among the people in India for making a notable change in the consumer behavior.Consumersnolongerneedtheirlaptops,butratherfocusoncellphones,hand-helddevices, and handheld units that are continuously in contact, which allows real-time data transfers with customers. . Weismueller et al. (2020) looked into how purchase intention is affected by social media influencer endorsements, specifically how advertising transparency and source legitimacy play a role in this process. Hermanda et al. (2019) discussed how social media influencers affected customers' perceptions of brands, their own self-concepts, and their intentions to buy cosmetics. They discovered that, in contrast to the brand image, which had a strong positive effect, social media influencers and self-concept had a considerable negative affect on purchase intention. Chetioui et al. (2020) investigated how brand views and customer purchase intentions were affected by attitudes toward fashion influencers (fis). They demonstrate how brand views and customer purchase intentions are positively impacted by attitudes toward financial inclusion

## II. INFLUENCER MARKETING

Along with the strict competitiveness in the personal care industry, enterprises need to create more innovations tokeep growing, especially in their marketing strategies. One of the easy ways to take is by carrying out digitalmarketing, especially by working with social media influencers (Kemp et al., 2020; Vrontis et al., 2021). This methodmay become the best way to market products since they have audience or community to which they can promote theendorsed products (Dewi, 2020). Besides, business owners can also benefit since such endorsements can save theirbudget for promotion as well as gaining interaction between a brand and their consumers which might not happen withconventional advertisementmethod (Saima and Khan,2020). Promotion, according to Kumar and Patra (2017), is a tactic that may be used to spread knowledge and boost sales potential.

Images may talk volumes by their usage, as people appear to lack the physical capacity to communicate the same knowledgewhilespeaking.Thepriorresearchfindingsindicatethatmanyvariablesaffectconsumer loyaltywhenitcomestoonlinevideosonYouTube.Togaintractionwithconsumers,companies collaborate with youtubers who feed celebrities seek to profit from the authority.

## III. THERICAL FRAME

This study focuses on the impact of online advertising and the use of cosmetic brands/products amongthewomeninKeralastate.Manyofthepurchasingdecisionsthatcustomersmakearestrongly affectedbytheirattitudesandattitudesaremostlyformedbyadvertisements.Thestudyaimsto determine various factors affecting preference of female consumers for different cosmetic brands. Thisstudyismajorlyfocusedontheinfluenceofonlineadvertisements amongwomeninKeralaand thechangesintheirpurchasingbehavior.Themajorfindingsofthestudyindicatethehugeeffectof online advertising on choosing cosmetic brands by women through online platforms.

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## METHODOLOGY

By evaluating literature on influencers' trustworthiness, purchasing intention, attitude toward the product, and attitude toward advertisements, this study focuses primarily on social media influencers. Additionally, a literature search approach was used, drawing on earlier journal and article sources.

### Results and Discussions

Customers' trust and buying intention can be connected by influencers' credibility (Saima and Khan, 2020) Boost advertising to increase its efficacy. Social media marketing strategies are not too different from creating and disseminating a range of captivating content to win over social media users and turn them into clients. The faster consumers share and distribute engaging and high-quality information, the more followers it gains on social media. This results in more successful and efficient marketing campaigns that boost revenue.

The purpose of advertisement as a marketing tool is to influence consumers to buy the items being advertised. Advertisements have different goals, and whether or not they achieve their objectives determines how successful they are. Increasing product exposure, consideration, or conversion is something that some marketers would like to do. However, the ultimate goal of marketers is to increase the sales of their merchandise. Thus, it is essential for an advertisement to capture the attention of consumers. Marketers need to understand their target audience since different target audiences require different types of advertisements.

Given how much time people spend online, particularly on social media, digital marketing may be a useful tool. With 200 million active social media users, this may be the primary platform for marketing, particularly when collaborating with social media influencers.

However, when employing social media influencers as their promotional medium, businesses need to be able to manage their product marketing and identify which influencers are most appropriate (Casaló et al., 2020). Result shows how an influencer can impact consumers' perceptions regarding advertisements and items, as well as their inclination to buy.

## IV. CONCLUSION

This study has shown that social media influencers are valuable resources for businesses that offer a range of advantages. New media has grown at an exponential rate, impacting every aspect of society, including advertising. People have been greatly impacted by online advertising in recent years. Marketers can assess an influencer's credibility by looking at how it affects consumers' opinions toward advertisements and products, as well as their desire to make a purchase. Additionally, marketers can determine the most crucial element of influencer marketing by analyzing consumers' purchase intentions, which are influenced by their opinions toward advertisements and products.

## LIMITATIONS

In the time of covid 19 epidemic is to blame for the studies to collect only online distribution of questionaries is possible, allowing research should not ascertain exactly how respondents understood and responded to the statements that were made available.

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IC- TSI 2024
ISBN : 978-93-340-1483-9
29th February 2024

# Software Development Life Cycle Models- Analysis of efficiency

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***Abstract*** **- The five main phases of the software development lifecycle include requirements elicitation, designing, coding, testing, and feasibility analyses. The fundamental framework for a workflow from one step to the next is provided by a software process model. The proper planning, structuring, and completion of the software project are governed by the guidelines in this workflow. Software development life cycle often employs a wide range of approaches and procedures. While each project and the majority of real-world models have specific variations of the generic models, they are all created with distinct purposes and shares many tasks. In order to better understand these different software development life cycle models, this study will compare and contrast them.**

***Keywords:*** Software Development Life Cycle, feasibility analyses, planning, structuring.

## 1. INTRODUCTION

The Software development Life Cycle (SDLC) is a technique that enables the timely and customer- satisfied creation of high-quality software. SDLC guarantees high-quality output. Activities like requirements collecting and analysis, system analysis, system design, coding, testing, and implementation are all part of the software development process. TheSDLC model is a decision that the developer or development team makes. Every SDLC model may offer benefits and drawbacks depending on the circumstances. Determining which model to use in a given situation is a challenging task.

## II.THESTAGESOFSDLCMODELS

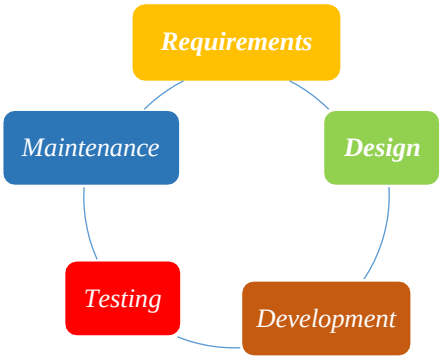
The phases that are generally present in each and every software development life cycle model are:

**1. Requirements:**
Requirement is one of the most important steps of recognizing the client's need. For the consistency of the criteria, there will be several review meetings. All findings of the review should be logged and tracked. They suggest that both formal & informal interviews should be held with the applicant's right stakeholders. This will help developer to get a true view of what the application is expected to do. Clearly document this discovery, so recline of the group is well aware of the need. Consequently, it helps to reduce the defects developed by the Requirements alone.

**2. Design:**
Specifications are transforming to use the case diagrams comprehensive business-related designs documentation provided.

**3. Development:**
This Phase carried out by the development group in which the structure documents are inputs together with the update of the technical reviews. Each code must be placed under the team's scanner, such as having an inspection through the code developed & the test cases of the unit must also be reviewed prior to execution.

**4. Testing:**
The SDLC key validation stages is the testing phase. The focus on the complete testing of the applications developed on the basis of the matrix of requirements.




**Stages involved in SDLC Models**

**5. Maintenance:**
A technical analysis meeting should be held to analyze & finalize the maintenance phase in order to structure the results and issues being considered

## II. SOFTWAREDEVELOPMENTLIFECYCLE MODELS

There are various software development life cycle models defined and designed which are followed during the software development process. Each process model follows a series of steps unique to its type to ensure success in the process of software development.

Following are the most important and popular SDLC models followed in the industry:

- Waterfall Model
- Iterative Model
- Spiral Model
- V-Model
- BigBangModel
- RapidApplicationDevelopmentModel
- Agile Model

### 1.WaterfallModel:

It is also known as linear sequential life cycle model as it consists of sequence of phases. Once a development phase is completed, the development proceeds to the next phase in the sequence and there is no turning back to the previous phase. Thus it is not suitable for dynamic projects. Various phases in this model are Requirement gathering, system design, implementation, testing, deployment and maintenance.

**Waterfall Model–Application:**
Every software developed is different and requires a suitable SDLC approach to be followed based on the

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ISBN : 978-93-340-1483-9
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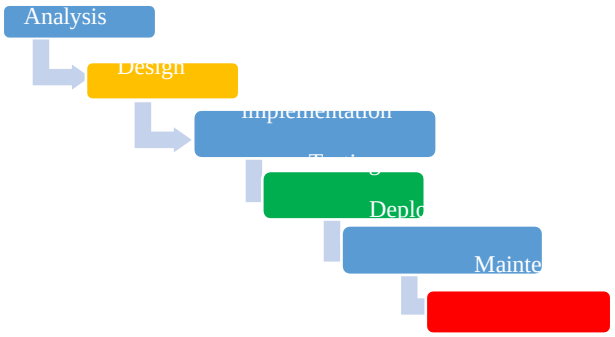
Internal and external factors. Some situations whether use of Waterfall model is most appropriate are:




- Requirementsareverywelldocumented,clear and fixed.
- Productdefinitionisstableandshort.
- Technologyisunderstoodandisnotdynamic.
- Therearenoambiguousrequirements.
- Ampleresourceswithrequiredexpertiseareavailable to support the product.

*Theadvantagesofthewaterfallmodel are:*

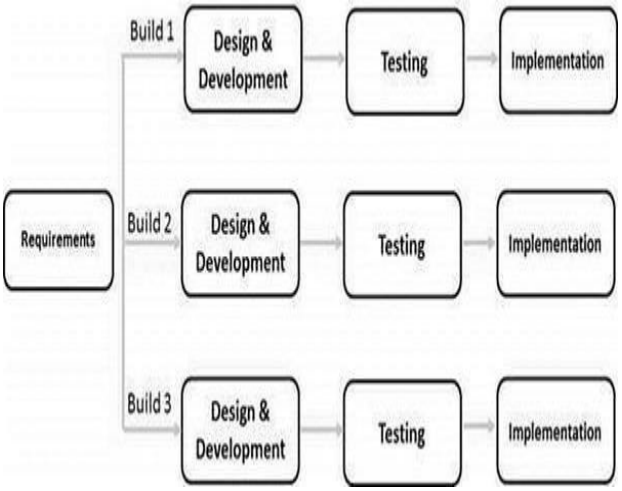
- Themodeliseasytounderstandandeasyto manage.
- There are specific phases with specific deliverables and they are clear to all involved.
- Eachphasecanbecompleted,oneatatime, there is no overlap.
- Itworkswellforsmallprojectswithclearly defined requirements.
- Elaboratesystemdocumentationisavailable.
- Clientscannotinterferetoomuchduringthe development of the project.

*Thedisadvantagesofthewaterfallmodelare:*

- If there is a risk that the requirements may change, this model is not the right one, as it isnot possible to go back and change the requirements once that phase is signed off.
- Clients who are not used to defining a system without seeing what it will look like maystruggle to define the requirements.
- There is no working software until late in the lifecycle; therefore it is not possible to see until the testing phase that things may not be as they were envisioned.
- A complex project with lots of risks and unknowns will not do well with this model.
- Personnel may become discouraged, as it may feel like a long time before they see the fruit of their work. There is no system to show until much later.

## 2. IterativeModel

In the Iterative model, iterative process starts with a simple implementation of a small set of the software requirements and iteratively enhances the evolving versions until the complete system is implemented and ready to be deployed.
Aniterativelifecycle modeldoesnotattempttostartwith a full specification of requirements. Instead, development begins by specifying and implementing just part of the software,whichisthenreviewedtoidentifyfurther requirements. This process is then repeated, producing a new




**IterativeModel-Application**

Like other SDLC models, Iterative and incremental development has some specific applications in the software industry. This model is most often used in the following scenarios −

- Requirements of the complete system are clearly defined and understood.
- Major requirements must be defined; however, some functionalities or requested enhancements may evolve with time.
- Thereisatimetothemarketconstraint.
- A new technology is being used and is being learnt by the development team while workingon the project.
- Resourceswithneededskillsetsarenotavailable and are planned to be used on contract basis for specific iterations.
- There are some high-risk features and goals which may change in the future.

*TheadvantagesoftheIterativeandIncrementalSDLC Model are as follows* −

- Someworkingfunctionalitycanbedeveloped quickly and early in the life cycle.
- Resultsareobtainedearlyand periodically.
- Paralleldevelopmentcanbeplanned.
- Progresscanbe measured.
- Lesscostlytochangethescope/requirements.
- Testinganddebuggingduringsmalleriterationis easy.
- Riskanalysisisbetter.
- Itsupportschangingrequirements.

*The disadvantages of the Iterative and Incremental SDLC Model are as follows* −

- Moreresourcesmayberequired.
- Althoughcostofchangeislesser,butitisnot very suitable for changing requirements.
- Moremanagementattentionisrequired.
- System architecture or design issues may arise because not all requirements are gathered in the beginning of the entire life cycle.
- Defining increments may require definition ofthe complete system.

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ISBN : 978-93-340-1483-9
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- Notsuitableforsmallerprojects.
- Managementcomplexityismore.

### 3. SpiralModel

The spiral model combines the idea of iterative developmentwiththesystematic,controlledaspectsofthe waterfall model. This Spiral model is a combination of iterative development process model and sequential linear development model i.e. the waterfall model with a very high emphasis on risk analysis. It allows incremental releases of the product or incremental refinement through each iteration around the spiral.

**Thespiralmodelhasfourphases.**

A software projectrepeatedlypassesthrough these phases in iterations called Spirals.

**Identification**

Thisphasestartswithgatheringthebusinessrequirements in the baseline spiral. In the subsequent spirals as the product matures, identification of system requirements, subsystem requirements and unit requirements are alldone in this phase.

This phase also includes understanding the system requirements by continuous communication between the customer and the system analyst. At the end of the spiral, the product is deployed in the identified market.

**Design**

The Design phase starts with the conceptual design in the baseline spiral and involves architectural design, logical design of modules, physical product design and the final design in the subsequent spirals.

**ConstructorBuild**

The Construct phase refers to production of the actual software product at every spiral. In the baseline spiral, whentheproductisjustthoughtofandthedesignisbeing developed a POC (Proof of Concept) is developed in this phase to get customer feedback.

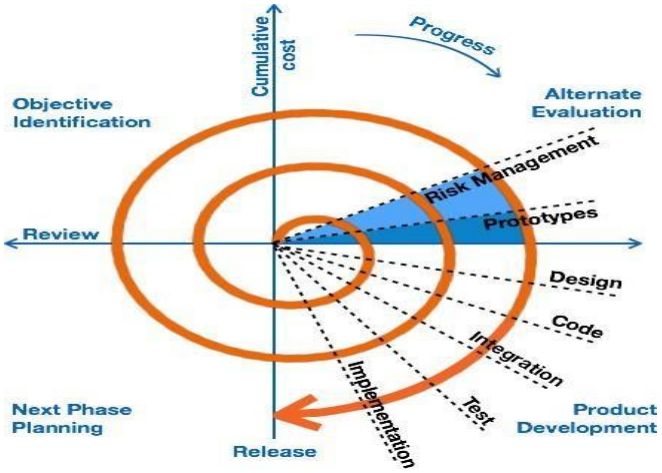
Then in the subsequent spirals with higher clarity on requirements and design details a working model of the software called build is produced with a version number. These builds are sent to the customer for feedback.

**EvaluationandRiskAnalysis**

Risk Analysis includes identifying, estimating and monitoring the technical feasibility and managementrisks, such as schedule slippage and cost overrun. After testing the build, at the end of first iteration, the customer evaluates the software and provides feedback.

*SpiralModel –Application:*
The followingpointersexplainthe typical usesof a Spiral Model

- Whenthereisabudgetconstraintandriskevaluation is important.
- Formediumtohigh-riskprojects.
- Long-term project commitment because of potential changes to economic priorities as the requirements change with time.
- Customer is not sure of their requirements which are usually the case.
- Requirements are complex and need evaluationto get clarity.
- New product line which should be released in phases to get enough customer feedback.
- Significant changes are expected in the product during the development cycle.
  Thefollowingillustrationisarepresentationof the Spiral Model, listing the activities in each phase.




**SpiralModelAnalysis**

*TheadvantagesoftheSpiralSDLCModelareasfollows*

- Changingrequirementscanbeaccommodated.
- Allowsextensiveuseofprototypes.
- Requirementscanbecapturedmoreaccurately.
- Usersseethesystemearly.
- Developmentcanbedivided intosmallerpartsand the risky parts can be developed earlier which helps in better risk management.

*ThedisadvantagesoftheSpiralSDLCModelareas follows* –

- Managementismorecomplex.
- Endoftheprojectmaynotbeknownearly.
- Notsuitableforsmallorlowriskprojectsand could be expensive for small projects.
- Processiscomplex
- Spiralmaygoonindefinitely.
- Largenumberofintermediatestagesrequires excessive documentation.

### 4. V-Model

The V-model is an SDLC model where execution of processes happens in a sequential manner in a V-shape. It is also known as Verification and Validation model.Under the V-Model, the corresponding testing phase ofthedevelopmentphaseisplanned inparallel. So,thereare Verificationphasesononesideofthe‘V’andValidation

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ISBN : 978-93-340-1483-9
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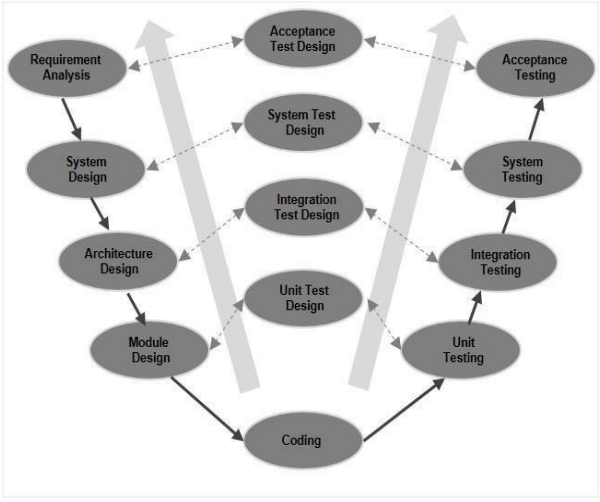
phases on the other side. The Coding Phase joins the two sides of the V-Model.

The following illustration depicts the different phases in a V-Model of the SDLC.




Just like the waterfall model, the V-Shaped life cycle is a sequential path of execution of processes. Each phase must be completed before the next phase begins. Testing is emphasized in this model more than the waterfall model. The testing procedures are developed early in the life cycle before any coding is done, during each of the phases preceding implementation. Requirements begin the life cycle model just like the waterfall model. Before development is started, a system test plan is created. The test plan focuses on meeting the functionality specified in requirements gathering. The high-level design phase focuses on system architecture and design. An integration test plan is created in this phase in order to test the pieces of the software systems ability to work together. However, the low-level design phase lies where the actual software components are designed, and unit tests are created in this phase as well. The implementation phase is, again, where all coding takes place. Once coding is complete, the path of execution continues up the right side of the V where the test plans developed earlier are now put to use.

Requirements have to be very clear before the project starts, because it is usually expensive to go back and make changes. This model is used in the medical development field, as it is strictly a disciplined domain.

The following pointers are some of the most suitable scenarios to use the V-Model application.

- Requirements are well defined, clearly documented and fixed.
- Product definition is stable.
- Technology is not dynamic and is well understood by the project team.
- There are no ambiguous or undefined requirements.
- Theprojectisshort.

*V- ModelAnalysis:*

*TheadvantagesoftheV-Modelmethodareasfollows−*

- This is a highly-disciplined model and Phases are completed one at a time.
- Works well for smaller projects where requirements are very well understood.
- Simpleandeasytounderstandand use.
- Easyto manageduetotherigidityofthemodel.

*ThedisadvantagesoftheV-Modelmethodareasfollows −*

- Highriskand uncertainty.
- Nota good model for complexand object-oriented projects.
- Poormodelforlongandongoingprojects.
- Notsuitablefortheprojectswhererequirements are at a moderate to high risk of changing.
- Onceanapplicationisinthetestingstage,itis difficult to go back and change functionality.
- No working software is produced until late during the life cycle.

**COMPARATIVEANALYSIS**

Waterfall Model is easy to manage due to the rigidity of the model as each phase has specific deliverables and a review process. It works well for smaller projects where requirements are very well understood.

V-shaped Model has higher chance of success over the waterfall model due to the development of test plans during the life cycle. It works well for small projects where requirements are easily understood.

Iterative model is at the heart of a cyclic software development process. It starts with an initial planning and ends with deployment with the cyclic interactions in between. Easier to test and debug during a smaller iteration. Easier to manage risk because risky pieces are identified and handled during its iteration.

Spiral model is good for large and mission-critical projects where high amount of risk analysis is required like launching of satellites.

In contrast to traditional SDLC, the Agile SDLC avoids ‘up-front’ requirement gathering as stakeholders often could not provide all requirements in sufficient details for implementation to occur at the beginning of a project.

It can be conferred that Agile SDLC excels traditional SDLC.

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ISBN : 978-93-340-1483-9
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| FEATURES | Waterfall Model | Iterative Model | Spiral Model | V-Model |
|---|---|---|---|---|
| Requirement specification | Initial level | Initial level | Initial level | Initial level |
| Cost | Low | Low | High | High |
| Risk factor | High | Low | Low | High |
| Success rate | Low | High | High | High |
| User involvement | Low (at initial stage only) | High (after each cycle) | Low (after each cycle) | Average |
| Maintenance | Least | Promotes Maintainability | Typical | Least |

## CONCLUSION

In this research paper various models like waterfall, iterative, V-shaped and spiral model have been examined and various features like requirement specification, cost, risk factor, user involvement, success rate, simplicity are analyzed. Each model has its own merits and demerits. From the analysis as shown the developer can choose the appropriate software development life cycle model according to the requirements.

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IC- TSI 2024
ISBN : 978-93-340-1483-9
29th February 2024

# EMERGINGTRENDS IN COMMERCE AND MANAGEMENT CUSTOMER RELATIONSHIP MANAGEMENT

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***Abstract*— Customer Relationship Management is an upright concept or strategy to solidify relations with customers and at the same time reducing cost and enhancing productivity and profitability in business.**

**CRM system provides a well-defined platform for all business units to interact with their clients and fulfill all their needs and demands very effectively and to build long-term relationship.A CRM system is not only used to deal with the existing customers but is also useful in acquiring new customers. This study aims to determine the effect of Customer Relationship Management (CRM) on Customer Satisfaction, Implication of Customer Relationship Management. CRM can hence be considered a sort of Green IT, oriented toward digital transformation and sustainable business model innovation. Indeed, this research model may be the basis for a more specific methodology to measure the impact and benefits of applying CRM, both in terms of sustainable business models and innovation.**

**Keywords: Green IT, Digital Transformation, sustainable.**

## INTRODUCTION

The emergence of entrepreneurs in a society depends to a great extent, on the economic, social, religious, cultural and psychological factors prevailing in the society. In the advanced countries of the world, there is a phenomenal increase in the number of self-employed women after the World War II. In the US women own 25 per cent of all businesses, even though their sales on an average are less, than two-fifths of those of other small businesses. Women Entrepreneurs may be defined as the women or a group of women who initiate, organize and operate a business enterprise. A woman entrepreneur is therefore a confident, creative and innovative woman desiring economic independence individually and simultaneously creating employment opportunities for others. With the spread of education and awareness women are shifted from extended kitchen works to the higher activities, those are like Engineering, electronics etc.

### Concept of Customer Relationship Management:

Customer Relationship Management is a technology for managing all your company's relationship and interactions with customers and potential customers. The goal is simple: Improve business relationships and CRM system helps companies stay connected to customers, streamline processes and improve profitability. When people talk about CRM, they are usually referring to a CRM system, a tool that helps with contact management, sales management, productivity and more. A CRM solution helps to focus on Organization's relationships with individual people including customers, service users, colleagues or suppliers throughout the life cycle, including new customers, winning their business and providing support and providing support and additional services throughout the relationships.

### History of CRM:

CRM originated in early 1970s when the business units had a manifestation that it would be advisable to become 'customer emphatic' rather that 'product emphatic'. Birth of CRM was because of this heedful perceptiveness. The famous writer and management consultant Peter Drucker wrote; 'The true business of every company is to make and keep customers'. Traditionally every transaction was on paper and dependent on goodwill which created hindrance in clutching customers. People used to work hard in entertaining customers by presenting new products with astonishing services; they were ready to work overtime for grasping more and more customers for increasing business. This too resulted in customer satisfaction and loyalty up to some extent, but at the end of the day there was no such bonding or relation between the two to carry on with future business smoothly.

Previously business was quite easy as it was mere a one-to-one dealing without any specific process. But with time, due to incoming complexities in communication, it found itself in troubled waters. Emerging of new strategies and technologies in global marketplace and a mammoth degree of competition in business, the approach needed to be changed to proactive rather than reactive. Origination of CRM turned out to be a piece of cake for all suppliers and customers due to its advantages. Customer relationship management came as a process that dealt with relationships with customers surpassing the whole business.

Originally customer relationship management was based on three major principles; shielding the current customers, fostering new customers and enhancing asset value of all the customers. With the advent of CRM which was integrated with high end software and technology, business perspectives were totally changed. A CRM system eventually emerged as consisting of company-full of information which is depicted sophistically to increase business profit and meliorate customer satisfaction and loyalty, on the same hand reduces business cost and investment.

### Literature Review:

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ISBN : 978-93-340-1483-9
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**Customer Relationship Management:**

Customer Relationship Management is defined as an integrated function that consists of the sale strategy, marketing and service aiming to increase revenue from customer satisfaction (Kalakota and Robinson, 2010). Customer Relationship Management is the concept of building a strong relationship between the companies, in this case the management with customers (Sutedjo, 2011, p. 65). So, Customer Relationship Management is a customer service approach that focuses on building and maintaining longterm relationships (Ardiyhanto, 2011). Based on the above point of view, the organization can focus on the development of an important asset in the long term, a more progressive in relationships with valued customers. CRM program is making a vision for how to transform their companies to develop important attributes, so that they can be bonded by the organization, products and intend to make a purchase (Gordon, 2002: 2). According to the above viewpoint, it can be concluded that the Customer Relationship Management can affect the level of customer satisfaction. Furthermore, customer satisfaction can have an impact on customer loyalty. For more details, how the Customer Relationship Management variable affect customer satisfaction and its impact on customer loyalty will be explained in the following section.

**Effect of Customer Relationship Management on Customer Satisfaction:**

Customer Relationship Management (CRM) is a method to attract, to maintain and to improve customer satisfaction and strengthen relationships with customer (Tung, 1997). Furthermore, Customer Relationship Management (CRM) provides data and information relating to customers, such as in shopping behavior, habits in consuming products, and others (Agrawal, 2004). These data and information are used to improve understanding how to communicate with customers in order to create value and customer satisfaction (Agrawal, 2004). From the above description, it can be concluded that customer relationship management influence customer satisfaction. In other words, the better customer relationship management, the higher the level of customer satisfaction.

**Objectives of the study:**

1. To identify the limitations of CRM.
2. To find the emerging impact of E-commerce in CRM
3. To identify the recent trends in CRM

**Features of CRM:**

**Customer's Needs:**

An organization can never assume what actually a customer needs. Hence it is extremely important to interview a customer about all the likes and dislikes so that the actual needs can be ascertained and prioritized. Without modulating the actual needs it is arduous to serve the customer effectively and maintain a long-term deal.

**Customers Response:**

Customer response is the reaction by the organization to the queries and activities of the customer. Dealing with these queries intelligently is very important as small misunderstandings could convey unalike perceptions. Success totally depends on the understanding and interpreting these queries and then working out to provide the best solution. During this situation if the supplier wins to satisfy the customer by properly answering to his queries, he succeeds in explicating a professional and emotional relationship with him.

**Customer Satisfaction:**

Customer satisfaction is the measure of how the needs and responses are collaborated and delivered to excel customer expectation. In today's competitive business marketplace, customer satisfaction is an important performance exponent and basic differentiator of business strategies. Hence, the more is customer satisfaction; more is the business and the bonding with customer.

**Customer Loyalty:**

Customer loyalty is the tendency of the customer to remain in business with a particular supplier and buy the products regularly. This is usually seen when a customer is very much satisfied by the supplier and re-visits the organization for business deals, or when he is tended towards re-buying a particular product or brand over times by that supplier. To continue the customer loyalty the most important aspect an organization should focus on is customer satisfaction. Hence, customer loyalty is an influencing aspect of CRM and is always crucial for business success.

**Customer Complaints:**

Always there exists a challenge for suppliers to deal with complaints raised by customers. Normally raising a complaint indicates the act of dissatisfaction of the customer. There can be several reasons for a customer to launch a complaint. A genuine reason can also exist due to which the customer is dissatisfied but sometimes complaints are launched due to some sort of misunderstanding in analyzing and interpreting the conditions of the deal provided by the supplier regarding any product or service. Handling these complaints to ultimate satisfaction of the customer is substantial for any organization and hence it is essential for them to have predefined set of process in CRM to deal with these complaints and efficiently resolve it in no time.

**Customer Service:**

In an organization Customer Service is the process of delivering information and services regarding all the products and brands. Customer satisfaction depends on quality of service provided to him by the supplier. The organization has not only to elaborate and clarify the details of the services to be provided to the customer but also to abide with the conditions as well. If the quality and trend of service go beyond customer's expectation, the organization is supposed to have a good business with customers.

**Sustainability and CRM:**

The World Commission on Environment and Development(1987) defines sustainability as the 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs'. Its three main dimensions, also known as the 'triple bottom line', are the following: economic, environmental, and social. Economic sustainability takes place when a balance has been reached between the pursuit of economic performance and its sustainable development (Abson et al., 2017). Environmental sustainability relates to the influence of an organization's business processes, activities, and operations on its natural environment, this influence being either positive or negative (Mishra, Akman, & Mishra, 2014). Finally, social sustainability encourages a solid partnership between business

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ISBN : 978-93-340-1483-9
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and society for a sustainable development. In other words, a win-win situation is sought with this last dimension.

**Limitations of CRM:**

**Removes the Human Component from the Business Equation:**

Many companies use CRM systems with the main objective of improve the customer experience. It minimizes the human to human interaction and replaces it with machines.

However, the capabilities of a machine or software are limited. However, BPO in conjunction with Contact Center software and other tools to automate processes where possible to open up humans for important interactions with customers.

Therefore, it cannot give customers the solutions only a human can give. Customers can feel more comfortable and feel better speaking to a person rather than an answering machine on the other end.

Therefore, using CRM can reduce the element of human interaction in your business operations.

**Proper Employee Training and Adoption:**

While there are many examples of CRM and how it can give your business a plethora of benefits, it will take some time before you can enjoy them. Your employees are a vital stakeholder of your business before your customers. So, they must grasp the system to serve your customers in a better way.

And all of this means extensive training programs where you have to teach everything to your employees about CRM.

In addition, you will have to carry about industry-specific training programs for the training for employees. All in all, it can be a hectic and time-consuming task that can drain your employees' energy as well as yours.

**Technical Support:**

After dealing with the issues of training, the next challenging thing standing in front of you is the issues with the CRM itself. Technologies and software continuously have a need of tech support to deal with any major and minor problems.

Now you can choose from any of either 3 options for the technical support of your CRM:

- Hire an in-house team to run the CRM efficiently
  •Outsource it to another company to manage the CRM
- Take the services of the CRM provider.

All these options mean that your business will have to deal with additional costs apart from the one to install the CRM. And this is one of the things that many businesses don't take into consideration. They don't calculate the cost that they have to bear to keep the CRM running.

**Confidential Data Security**

Data is one of the most valuable resources for any company in this digital era. There have been scenarios where the web hosting companies have sold the CRM data of their clients to other parties. It puts yours and your customer's private data in the hands of another party. SAP is a CRM leading the industry in tools and security options, so it's a good benchmark for comparisons of leading CRMs.

**Emerging impact of E-commerce in CRM:**

**Enhanced Customer Experience:**

- You can provide an order status facility to your customers.
- Improved inventory checks and shipment tracking.
- As an online retailer, you can offer an Omani-retail channel.
- Shorter sales cycle.

**Enhance Sales Team Performance:**

Every business that involves customer services can reap the benefits of CRM integration. A plethora of customer information can help understand the consumer better and implement effective services. You also get access to customer history, products reviewed, and such other information. This helps your team to implement the cross-sell and up sell tactics at the right time.

B2B e-Commerce businesses can also take advantage of this information. They can have better negotiating power with customer history to back them.

**Effective Marketing and Promotional Tactics:**

E-Commerce businesses no longer have to work or install multiple systems to acquire consumer data.

A single software can record, store, and update all the customer information.

This helps your team to plan out your business for the right target audience. Customer history offers them accurate information about the right time to execute the plan.

Your customers are likely to be pleased with the increased number of customized emails and messages that they receive. This kind of tailored and effortless marketing is possible only through CRM.

**Flawless Inventory**

With the constant inflow and outflow of the products, it is tricky for an e-Commerce business to maintain precise records. CRM systems can effortlessly update this data.

Besides, it can also provide you information about the products that are in high demand. You can store an increased number of products that are in demand. The actual sales data can help determine future sales.

**Minimize Costs**

Integrate your CRM system to enjoy additional perks. It helps you to reduce manual mistakes like typos or incorrect data-entry. An error in manual data entry can have a huge impact on your inventory and overall sales.

**5.5 Recent trends in CRM:**

**Analytical CRM:**

Firms are now encouraging their analytical teams to work closer with their customers as it offers ample room for growth in profitability. They are endeavoring to see what sort of analysis actually matters to the customer through finding out what contributes to their highest satisfaction. The interest in this new functionality is easily one of the fastest growing trends in the industry.

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**CRM Mobile and Social networking:**

Another hot trend in the CRM industry is the "mobile" interest. CRM has currently gone mobile and is easily assessable almost anywhere. This new trend is fast gaining ground as the need for easy access is fundamental to any executive. Social networking sites are also being mined to garner the benefits of
CRM.

**Outsourcing CRM:**

Outsourcing CRM is yet another new trend gaining ground. Sales force leads the pack in this area. Despite initial hesitation in this area, firms now realize that it is a good bet. The lure in this area is the lower costs involved, contributing to overall profitability.

**CRM and Cloud Computing:**

Cloud computing is a relatively new term referring to scalable, virtualized computing resources available on the Internet. There is now a growing demand for CRM cloud computing solutions and more vendors are jumping to satisfy this demand.

**Internet of Things:**

There were 8.74 billion connected IoT devices in 2020, and the number is expected to reach more than 25.4 billion in 2030. According to experts, IoT will continue to make significant improvements in customer relationship management.

**Analysis and Interpretation:**

A CRM system consists of a historical view and analysis of all the acquired or to be acquired customers. This helps in reduced searching and correlating customers and to foresee customer needs effectively and increase business.

CRM contains each and every bit of details of a customer, hence it is very easy for track a customer accordingly and can be used to determine which customer can be profitable and which not.

In CRM system, customers are grouped according to different aspects according to the type of business they do or according to physical location and are allocated to different customer managers often called as account managers. This helps in focusing and concentrating on each and every customer separately.

A CRM system is not only used to deal with the existing customers but is also useful in acquiring new customers. The process first starts with identifying a customer and maintaining all the corresponding details into the CRM system which is also called an 'Opportunity of Business'. The Sales and Field representatives then try getting business out of these customers by sophistically following up with them and converting them into a winning deal. All this is very easily and efficiently done by an integrated CRM system.

The strongest aspect of Customer Relationship Management is that it is very cost-effective. The advantage of decently implemented CRM system is that there is very less need of paper and manual work which requires lesser staff to manage and lesser resources to deal with. The technologies used in implementing a CRM system are also very cheap and smooth as compared to the traditional way of business.

All the details in CRM system is kept centralized which is available anytime on fingertips. This reduces the process time and increases productivity.

Efficiently dealing with all the customers and providing them what they actually need increases the customer satisfaction. This increases the chance of getting more business which ultimately enhances turnover and profit.

If the customer is satisfied they will always be loyal to you and will remain in business forever resulting in increasing customer base and ultimately enhancing net growth of business.

**Conclusion:**

Marketers have now realized that in the global and highly competitive market place and market space, success rests on the firm's ability to attract, satisfy and retain its customers. This demands marketing efforts to be more informative, customer and service oriented. CRM is an innovative approach undertaken by the marketers in the process of developing lifetime customers and maximizing lifetime value of the customers. Companies no longer regard marketing, service and sales as separate entities. Instead they are more concerned with treating them with a holistic approach. From the above discussions it is clear that technology has been used effectively to enhance the utility and application of CRM. The need is to adapt ever changing technology to meet newer challenges before CRM. It is dynamic process and right mindset of managers is key for the success.

ACKNOWLEDGMENT:

We express our sincere gratitude to Sankara College of Science and Commerce for providing us an opportunity to work on the paper. This helps us to build a new bridge of learning. Special thanks to Dr.K.Princepaulantony (HOD of Commerce ca ). We also thank Department of Commerce of Sankara College of Science and Commerce for this new innovative presentation.

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IC- TSI 2024
ISBN : 978-93-340-1483-9
29th February 2024

# A STUDY ON ROLE OF DIGITAL GREEN ECONOMY AND ITS SUSTAINABILITY

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Abstract
In recent years, the global community has witnessed a growing sense of urgency in addressing the pressing challenges posed by climate change and environmental degradation. Governments, organizations, and individuals have come to recognize the need for sustainable practices and innovative solutions to mitigate the impact of these issues. As a result, the concept of a green economy has gained significant traction and has become a focal point for discussions on sustainability and economic growth.

Key words: Green Economy, Digital era, micro Grids, cyber security.

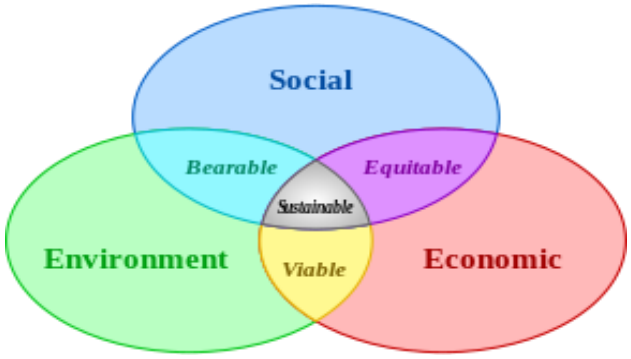
## INTRODUCTION

The international world has seen a rise in the urgency of tackling the urgent problems caused by environmental degradation and climate change in recent years. In order to lessen the effects of these problems, governments, corporations, and people as a whole have realized the necessity of sustainable practices and creative solutions. As a result, the idea of a "green economy" has acquired a lot of support and is now central to conversations about economic growth and sustainability.
An economic system that puts social welfare, resource efficiency, and environmental sustainability first is known as a "green economy." The goal is to disentangle economic expansion from the depletion of natural resources and environmental harm, and instead advocate for sustainable growth that satisfies current demands without jeopardizing the capacity of future generations to satisfy their own. Making the switch to renewable energy sources, encouraging sustainable patterns of production and consumption, and making investments in environmentally friendly infrastructure and technology are all tenets of the green economy.

However, as the digital era progresses, the digital green economy has become a more potent force. By fusing the revolutionary power of technology with the principles of sustainability, this creative approach opens up even more significant possibilities and transformations.
The digital green economy makes use of digital technology' potential to promote sustainable development. In order to develop intelligent systems that maximize resource utilization, improve energy efficiency, and lessen environmental impact, it makes advantage of developments in fields like artificial intelligence, the Internet of Things, data analytics, and cloud computing.

The digital green economy's capacity to gather, process, and understand massive volumes of data in real-time is one of its main advantages. By connecting different devices and sensors, the Internet of Things (IoT) makes it possible to monitor and manage waste, water, and energy usage. With this level of connectedness and data-driven insights, both individuals and organizations may find inefficiencies and make well-informed decisions that support sustainability.

The digital green economy also heavily relies on machine learning algorithms and artificial intelligence. These technologies let organizations to streamline processes, cut down on waste, and create creative solutions by analyzing large, complicated datasets, finding patterns, and forecasting trends.
For example, AI algorithms can optimize transportation routes, reducing fuel consumption and emissions, or predict energy demand, enabling renewable energy systems to adjust accordingly.




There are several benefits associated with the digital green economy that help to shape a sustainable future. First off, it lessens the impact on the environment. Businesses can reduce their natural resource consumption and carbon footprint by utilizing digital technologies. For example, smart networks optimize the distribution of electricity, lowering energy losses and reliance on fossil fuels. Furthermore, the use of teleconferencing and remote

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ISBN : 978-93-340-1483-9
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working technology lessens the necessity for business travel, which lowers emissions associated with transportation.

Second, resource efficiency and conservation are encouraged by the digital green economy. Businesses may find areas for improvement, increase energy and water efficiency, and reduce material waste by utilizing data-driven insights. This promotes a circular economy strategy that lessens environmental impact by using resources sustainably and reusing them..

The digital green economy also offers a lot of lucrative prospects. New markets and sectors arise as companies adopt sustainable practices and create green technologies. For instance, the switch to renewable energy sources boosts employment in the clean technology, green infrastructure, and renewable energy sectors. This promotes economic expansion and guarantees that sustainability will be a pillar of future prosperity.

The digital green economy also improves flexibility and resistance to environmental concerns like climate change. Communities can increase their level of independence and decrease their susceptibility to disturbances by adopting decentralized systems and diversifying their energy sources. Micro grids and renewable energy sources combined, for instance, can ensure that vital infrastructure continues to operate even in the event of a natural disaster by supplying steady power.

The promise of this revolutionary strategy is evident in the plethora of digital green economy initiatives that are currently under way throughout the world. For example, smart cities use digital technologies to improve urban sustainability. These projects optimize resource use, increase citizen services, and improve transportation systems by integrating IoT devices, data analytics, and AI. The impact of projects such as Barcelona's smart irrigation system installation, which modifies watering schedules based on meteorological data to save water usage in public parks, is exemplary.

Another important component of the digital green economy is the integration of renewable energy sources into the current energy infrastructure. Advanced energy management systems and smart grids can be used to optimize and balance the generation of renewable energy with demand.

Another area where digital tools are transforming the industry and encouraging sustainable practices is precision agriculture. Precision agriculture monitors crop health, optimizes irrigation, and uses fewer pesticides and fertilizers by utilizing sensors, drones, and AI algorithms. This reduces the negative effects on the environment while simultaneously increasing crop yields and farmer profitability.

To guarantee the digital green economy's widespread adoption and inclusivity, it is crucial to solve a few issues as we explore its potential. The digital divide is one of the main issues. Underprivileged groups around the world continue to have unequal access to digital technology and connections due to a lack of infrastructure and expertise. To guarantee that every community can profit from the digital green economy, it is imperative to bridge this gap. Governments, businesses, and organizations must work together to improve internet access and provide training and support to ensure equal participation.

Data security and privacy are another difficulty. Large volumes of data are needed to drive sustainable behaviors in the digital green economy. Strong cyber security defenses and open data governance structures are essential for safeguarding private data and preserving public confidence.

Moreover, the swift spread of digital technologies also contributes to a rise in electronic garbage, or "e-waste." In order to reduce environmental harm, proper e-waste management techniques must be put into place. This entails putting in place recycling initiatives, encouraging appropriate disposal techniques, and creating long-lasting, repairable products.

A viable route to a sustainable future is the digital green economy. We can lessen our influence on the environment, improve resource efficiency, promote economic growth, and strengthen resilience by utilizing digital technologies and incorporating sustainable practices. Reduced environmental impact, resource conservation, economic growth, and increased resilience are just a few benefits of the digital green economy. But in order to guarantee inclusivity and long-term success, issues like the digital gap, data privacy worries, and e-waste management must be addressed. We can create a more resilient and sustainable world by embracing the digital green economy.

**The Digital Green Economy: A Definition**

The term "digital green economy" describes how sustainable practices and digital technologies are combined to support resource- and environmentally-friendly solutions. It covers a broad spectrum of industries, such as green transportation, sustainable agriculture, smart cities, renewable energy, and the circular economy. Utilizing digital innovations to minimize environmental effect, lower carbon emissions, and improve resource conservation is the main goal.

**The Role of Digital Technologies**

The move to a green economy is mostly driven by digital technologies. They make it possible to gather, analyze, and interpret enormous amounts of data, which helps with resource optimization and well-informed decision-making. Businesses and individuals can detect and address inefficiencies by using real-time monitoring and control of energy use, waste management, and water usage made possible by the Internet of Things (IoT).

Furthermore, sophisticated datasets can be analyzed using artificial intelligence (AI) and machine learning algorithms to find patterns and forecast trends. This makes it possible for companies to streamline processes, cut down on waste, and create novel solutions. For instance, AI-powered algorithms can forecast energy demand, allowing renewable energy systems to adapt, or optimize transportation routes, cutting down on emissions and fuel use.

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ISBN : 978-93-340-1483-9
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Advantages of the Digital Green Economy

The digital green economy offers several advantages that contribute to a sustainable future:

1. Reducing Environmental Impact: Businesses can lessen their environmental impact and carbon footprint by utilizing digital technologies. Smart grids, for example, can optimize the distribution of electricity, lowering energy losses and dependency on fossil fuels. Technologies like teleconferencing and remote working can also reduce the need for business travel, which lowers emissions associated with transportation.

2. Resource Conservation: By streamlining operations and cutting down on waste production, the digital green economy encourages resource efficiency. Businesses may find areas for improvement, increase water and energy efficiency, and reduce material waste with data-driven insights. This encourages the use of a circular economy, in which resources are used and recycled sustainably.

3. Economic Growth and Job Creation: There are many prospects for both job creation and economic growth in the digital green economy. New markets and industries arise as companies adopt sustainable practices and create cutting-edge green technologies. As a result, jobs are created in industries including clean technology, renewable energy, and the construction of green infrastructure.

4. Resilience and Adaptability: In the face of environmental issues such as climate change, the digital green economy strengthens resilience and adaptability. Communities can increase their level of independence and decrease their susceptibility to disturbances by adopting decentralized systems and diversifying their energy sources. For instance, the combination of micro grids with renewable energy sources can deliver dependable power even in the event of a natural disaster.

Instances of Digital Green Economy Projects
The potential of this revolutionary strategy is demonstrated by the numerous digital green economy initiatives that are currently under progress throughout the world:

Smart Cities: To improve urban sustainability, cities all around the world are utilizing digital technologies. Smart city efforts increase resource use, enhance citizen services, and improve transportation systems by integrating IoT devices, data analytics, and artificial intelligence. For instance, Barcelona has reduced water usage in public parks by implementing a smart irrigation system that modifies watering schedules based on meteorological data
.
2. Integration of Renewable Energy: The digital green economy makes it easier to incorporate renewable energy sources into the current energy infrastructure. Renewable energy generation may be balanced and adjusted with demand through the use of smart grids and sophisticated energy management systems. One excellent example is Germany's Energiewende, which uses digital technologies to effectively incorporate solar and wind energy into the country's energy mix.

3. Precision Agriculture: By encouraging resource- and sustainability-efficient methods, digital technology is transforming the agriculture industry. Precision agriculture monitors crop health, optimizes irrigation, and uses fewer pesticides and fertilizers by utilizing sensors, drones, and AI algorithms. This reduces the negative effects on the environment while simultaneously increasing crop yields and farmer profitability.

4. Overcoming Obstacles and Maintaining Diversity
Even if the digital green economy has a lot of promise, there are some issues that must be resolved in order to guarantee that it is widely accepted and inclusive. Among these difficulties are:

1. Global access to digital technologies and connection is still unequal, resulting in the "Digital Divide." To guarantee that every community can profit from the digital green economy, it is imperative to close the digital divide. For underprivileged populations to have better access to the internet and to support and training, corporations, and nonprofits must collaborate.

2. Data Privacy and Security: Ensuring data privacy and security is crucial since the digital green economy depends heavily on large volumes of data. Ensuring the safety of confidential data and upholding public confidence requires the implementation of strong cyber security protocols and clear data governance structures.

3 . E-Waste Management: The rapid proliferation of digital technologies also leads to an increase in electronic waste. Proper e-waste management practices must be implemented to minimize environmental harm. This includes recycling programs, responsible disposal methods, and product design that promotes durability and reparability.

Conclusion

The digital green economy represents a promising pathway towards a sustainable future. By leveraging digital technologies and sustainable practices, we can reduce environmental impact, enhance resource efficiency, and foster economic growth. From smart cities to renewable energy integration and precision agriculture, numerous initiatives exemplify the transformative power of the digital green economy. However, it is crucial to overcome

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ISBN : 978-93-340-1483-9
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challenges such as the digital divide, data privacy concerns, and e-waste management to ensure inclusivity and long-term success. By embracing the digital green economy, we can pave the way for a more sustainable and resilient world.

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IC- TSI 2024
ISBN : 978-93-340-1483-9
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# A STUDY ON CUSTOMER PERCEPTION AND SATISFACTION TOWARDS MOBILE MARKETING MANAGEMENT

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**ABSTRACT:**

This study aims to examine the customer perception and satisfaction towards mobile marketing management. With the increasing use of mobile devices and the rapid growth of mobile marketing, understanding how customers perceive and respond to mobile marketing efforts is crucial for organizations to design effective mobile marketing strategies. The study adopts a comprehensive approach, encompassing various dimensions of mobile marketing management, including mobile advertising,mobile apps,mobile coupons,andmobile loyalty programs.

The research methodology includes a combination of qualitative and quantitative methods. Qualitative data will be gathered through in-depth interviews and focus group discussions with a diverse group of mobile users to gain insights into their perceptions and experiences with mobile marketing. Quantitative data will be collected through a structured survey administered to a larger sample of mobile users, allowing for statistical analysis and generalization of findings.

**KEYWORDS:** ***Mobile marketing, customer perception, customer satisfaction, mobile advertising.***

## INTRODUCTION

As a significant element of the promotional mix, direct marketing is a basic form of marketing that occurs directly between the manufacturers and customers without the presence of an intermediary. The emergence of Internet and Communication Technologies (ICT) has reshaped direct marketing into what is known today as online or digital marketing which uses the Internet to communicate with the potential customers. Using the Internet as an online marketing channel links the potential customers with the sellers electronically.

The latest direct marketing channel is known as mobile marketing which is highly influenced by permission-based marketing. Mobile marketing is defined by the Mobile Marketing Association (MMA) as a set of practices that enable organizations to communicate and engage with the audience in an inter active and relevant manner through any mobile device or network". From the view point of Dushinski, "mobile marketing connects businesses and each of their customers through their mobile devices at the right time and at the right place with the right message and requires the customer's explicit permission and/or active interaction." Insimplerterms,mobilemarketing hastobeimplemented with the definite permission and consent of the end-users in order to succeed alone correct yitcouldquicklybecome deeply intertwined into people's daily lives.

As mentioned by the Mobile Marketing Association (2011), "permission-based mobile marketing is the practice of gaining consent from consumers in advance of a continuing marketing dialogue taking place on mobile devices and in return for some kind of value exchange."Additionally, the emergence of mobile as a desired promotion all channel for many consumers has enabled the marketers to upgrade the level of permission-based marketing .The MMA (2011) emphasizes that the mobile channel is the best medium for permission-based marketing because it allows the brands to deal with each target customer as an individual. Varnalietal. (2011,p.58)point so that "a mobile phone is an intimate object that is part of an individual's personal sphere .Uninvited messages may be viewed as intrusions into the personal sphere.

## OBJECTIVES:

- To find out the opinion of y and z generations towards the Mobile marketing.
- To find the level of satisfaction of the respondents on Mobile marketing strategies.
- To know the obstacles faced by the respondents while Bought a mobile phones from retailers.
- To know the impact of mobile and brands among teenagers.
- To know the importance of mobile brands.

## RESEARCH METHODOLOGY

The research methodology gives an idea about the type of research design, the sampling techniques, the process of data collection and the instrument used for the data analysis. In order to achieve the objectives of the study and to analyze the data collected, an appropriate methodology has been developed. A research methodology is a master plan for the conduct of formal investigation. The present study is explanatory as well as descriptive. The various aspect of

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ISBN : 978-93-340-1483-9
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methodology is discussed below.

**Area of study:**

The study has been conducted in and around Coimbatore district.

**Sampling method:**

Convenient sampling method has been used.

**Source of data:**

To accomplish the objectives of the study, the data required has been collected using both primary and secondary data.

**STATEMENT OF PROBLEM**

The approach to adopting a MOBILE MARKETING MANAGEMENT however is often to merely stay abreast of industry and technology. The useroften has minimal place in such an approach as evidenced by non-human centric experiences that flourish. However, Their Marketing Strategies in recent times has gained a lot of attention from the customers who are unable to bought their Product in respective Mobile phone and services in various branch.

Hence a study has been undertaken to know the attitude of consumers towards Mobile marketing management.

**LITERATURE SURVEY:**

**Hanafizadeh, P., Behboudi, M., &Koshksaray,A.A. (2014).** Mobile banking adoption by Iranian bank clients. Telematics and Informatics,31(1),62-78.

This study explores the factors influencing customer perception and adoption of mobile banking services, which can provide valuable insights into mobile marketing management in the banking sector.

**Chong, A. Y., & Xia, W. (2013).** Mobile banking adoption: A literature review. Telematics and Informatics, 30(3), 239-252. This literature review provides a comprehensive overview of factors influencing customer adoption of mobile banking services, which can be relevant to understanding mobile marketing adoption and satisfaction.

**Chen,Y.H.,&Barnes,S.J.(2007).**Initial trust and on line buyer behavior.Industrial Management & Data Systems, 107(1), 21-36.

Examining the role of initial trust in online buyer behavior, this study can contribute to understanding how trust in fluencies customer perception and satisfaction with mobile marketing initiatives.

**Yang,K.C.C.(2013).**The effects of personalization and familiarity on mobile coupon redemption: A perspective from stimulus-organism-response framework. Journal of Interactive Advertising, 13(1), 30-43.

This research investigates the effects of personalization and familiarity on mobile coupon redemption, providing insights into customer perception and satisfaction with personalized mobile marketing initiatives.

**Luarn, P., &Lin,H.H**
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This study explores the factors influencing behavioral intention to use mobile banking, which can be relevant to understanding customer perception and satisfaction towards mobile marketing management in the financial sector.

**Ngai, E. W., Tao, S. S., & Moon, K. L. (2015).** Social media research: Theories, constructs, and conceptual frameworks. International Journal of Information Management, 35(1), 33-44.

While not focused explicitly on mobile marketing, this paper provide sin sight sin to social media research, which can be relevant to understanding customer perception and satisfaction with mobile marketing efforts that utilize social media platforms.

**Yoo, C. Y., & Kim, K. H. (2015)**. Customers' cognitive, emotional, and actionable responsetoMMS-based mobile advertising.Telematics and Informatics, 32(4),754- 767.

This study investigates customers' cognitive, emotional, and actionable responses to MMS based mobile advertising, contributing to understanding customer perception and satisfaction towards mobile marketing campaigns.

**SCOPE OF THE STUDY:**

The purpose of the study is to identify the preference and satisfaction of consumerin using Mobile phones offered by various branches. To study the current scenario of the Mobile marketing Management to understand the various factors like ease of use, time saving, marketing strategy, low cost of transaction, available at any time in selection of e-wallet services. The study is confined to the people who are living in Coimbatore district.

**SIGNIFICANCE OF THE STUDY:**

Effective mobile marketing strategies: Understanding customer perception and satisfaction helps businesses design and implement effective mobile marketing strategies. By knowing how customers perceive mobile marketing initiatives, organizations can tailor their campaigns to meet customer expectations, resulting in high reengagement and conversion rates.

Enhanced customer experience: Mobile marketing plays a significant role inshaping the customer experience. By analyzing customer perceptions and satisfaction, businesses can identify pain points and areas for improvement in their mobile

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ISBN : 978-93-340-1483-9
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marketing efforts. This knowledge enables organizations to provide a seamless and personalized experience, leading to higher customer satisfaction and loyalty.

Competitive advantage: In today's digital landscape, mobile marketing has become a crucial channel for businesses to reach and engage with customers. By conducting a study on customer perception and satisfaction, organizations can gain insights that their competitors might overlook. This understanding can be leveraged to differentiate their mobile marketing strategies and gain a competitive edge in the market.

Optimal resource allocation: Mobile marketing initiatives require resources, including financial investments and human capital. By understanding customer perception and satisfaction, businesses can allocate their resources more effectively. This knowledge helps in targeting the right customer segments, optimizing marketing budgets, and avoiding wasteful investments on ineffective mobile marketing strategies.

Buildingcustomerloyalty:Customersatisfactionisscloselytiedtocustomerloyalty.By identifying the factors that influence customer satisfaction in the mobile marketing context, organizations can focus on building long-term relationships with their customers. Satisfied customersaremorelikelytoengagewithfuturemobilemarketingcampaigns,recommendthe brand to others, and remain loyal over time.

Industry and academic contributions: Research on customer perception and satisfaction towards mobile marketing management contributes to the overall body of knowledge in the field. By conducting rigorous studies, scholars and researchers can expand the theoretical foundations, develop new frameworks, and generate practical insights that can guide future industry practices and academic research.

**The following tools are used to analyze the data**

- PERCENTAGE ANALYSIS

**DATA ANALYSIS AND INTERPRETATION**

**1. Usage mobile phones**

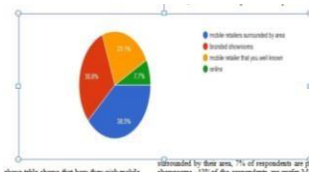
| Using mobile phones | No of respondents | Percentage |
|---|---|---|
| Yes | 150 | 100 |
| No | 0 | 0 |
| **Total** | **150** | **100** |


**Interpretation:**

The above table shows that using of mobile phones from the Respondents, all the respondents are using the mobile phones.

**2. Mobile marketing platform for your brand**

| Mobile marketing platform | No of Respondents | Percentage |
|---|---|---|
| Mobile retailers surrounded by your area | 35 | 23 |
| Branded showroom | 10 | 7 |
| Mobile retailers that you well known | 65 | 43 |
| Online | 40 | 27 |
| **Total** | **150** | **100** |



**Interpretation:**

The above table shows that how they pick mobile marketing platform, 23% of the respondentsare pick mobile retailers surrounded by their area, 7% of the respondents pick branded showrooms, 43% of the respondents pick noble retailers that they are well known, 27% of the respondents pick online shopping.

**3. Preference of the customer**

| Preferences of the customer | No of Respondents | Percentage |
|---|---|---|
| Mobile retailers surrounded by your area | 35 | 23 |
| Brandedshowroom | 10 | 7 |
| Mobile retailers that you well known | 65 | 43 |
| Online | 40 | 27 |
| Total | 150 | 100 |

**Interpretation:**

The above table shows that preferences of customers, 23% of the respondents are prefer mobile retailers surrounded by their area, 7% of respondents are prefer branded showrooms, 43%of the respondents are prefer Mobile retailers that they are well known, 27% of the respondents are prefer online shopping.

**FINDINGS:**

- A marketing strategy is crucial forth survival of any possible business.
- But identifying the right approach is the challenge.
- With the evolution of technology, the marketing strategies are also

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witnessing a sea change.

- Upgrading the plans and digitizing the same is the basics of any business nowadays.

- From, the inception of digital marketing in 1990 to tilldate the online world has never ceased to amuse the users with its marvels.

**SUGGESSTIONS:**

**Define clear research objectives:** Clearly define the specific objectives and research questions you want to address in your study. This will help guide your research designand data collection process.

**Select an appropriate sample**: Determine the target audience for your study and select a representative sample of customers. Consider demographic factors such as age, gender, location, and mobile device usage patterns to ensure diversity in your sample.

**Developa comprehensive survey questionnaire**: Design a survey questionnairethat covers various aspects of mobile marketing management, including message personalization, relevance, frequency, convenience, and overall satisfaction. Includeboth closed-ended questions (ratingscales, multiple-choice) andopen-ended questions together quantitative and qualitative data.

**Conduct in-depth interviews:** Conductin-depth interviews with a smaller subset of customers to gain deeper insights into their perceptions and experiences with mobile marketing. Use open-ended questions to encourage participants to share their thoughts, feelings, and specific examples.

**Use a mix of quantitative and qualitative analysis:** Analyze the quantitative data using statistical techniques such as regression analysis to examine therelationship between customer satisfaction and mobile marketing management factors. For qualitative data.

**Consider ethicalconsiderations**: Ensure that your study adheres to ethical guidelines, such as obtaining informed consent from participants, ensuring their privacy and confidentiality, and addressinganypotential risksor harmassociatedwiththeresearch.

**Consider longitudinal research:** To capture changes in customer perceptions and satisfaction over time, consider conducting a longit studies where you collectdata at multiple time points. This will provide a more comprehensive understanding of the dynamics of customer perception and satisfaction towards mobile marketing management.

**Compare different mobile marketing approaches:** Explore and compare different types of mobile marketing initiatives, such as SMS marketing, mobile apps, push notifications, or location-based marketing. This can help identify which approaches are more effective in influencing customer perception and satisfaction.

**Benchmark against competitors:** Consider including questions that allow customers to compare their experiences with your mobile marketing efforts against those of your competitors. This can provide valuable insights into areas where you can improve and differentiate your mobile marketing strategies.

**Provide actionable recommendations:** Based on the study findings, provide actionable recommendations for businesses to enhance their mobile marketing strategies and improve customer satisfaction. These recommendations can include aspects like personalization, relevance, frequency of communication, and ease of engagement.

**CONCLUSION:**

A study on customer preference and satisfaction towards mobile marketing management clearly explains that customers are more likely towards mobile phones and devices. Even in our increasingly mobilized world, your website remains a vital hub. Given the vast array of mobile devices currently on the market and in the hands of consumers, mobile site development efforts area most equally varied. That's why we spent a lot of time discussing the pros and cons of a number of approaches. But bear in mindthis space is evolving with nearly the samespeed as the devices themselves.You'llwanttomake ongoing education a priority so you can keep up with youraudience.Marketing is the mostexcitingofallbusiness sports.Itis the heartbeatof every successful business. It is continually changing in response to the explosion of information, the expansion of technology, and the aggressiveness of competition, at all levels and everywhere.

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ISBN : 978-93-340-1483-9
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# CORPORATE SOCIAL RESPONSIBILITITY (CSR) INTEGRATION: EMBEDDING SUSTAINABILITY INTO SUPPLY CHAIN PRACTICE

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**Abstract**

**This paper introduces a comprehensive framework meticulously crafted to steer organizations in seamlessly integrating Corporate Social Responsibility (CSR) principles into their supply chain management practices. By doing so, it not only nurtures responsible business conduct but also contributes to the enduring environmental, social, and economic sustainability crucial for sustainable commerce. The proposed framework, drawing insights from a thorough review of CSR theories, supply chain sustainability literature, and exemplary practices adopted by leading organizations, commences with a rigorous assessment of the organization's prevailing CSR performance, encompassing evaluations of environmental impacts, social responsibilities, and governance structures. Through strategic stakeholder engagement and meticulous materiality analysis, this phase identifies key stakeholders and their diverse interests, laying a solid foundation for aligning CSR objectives with business strategies and supply chain goals. At its core lies the establishment of transparent metrics and robust performance indicators to monitor and evaluate CSR performance across the entire supply chain, integrating both financial and non-financial indicators pertinent to environmental stewardship, social equity, and ethical business conduct. Embracing principles of transparency and shared value creation, organizations are empowered to engage meaningfully with stakeholders, leveraging cutting-edge technology and digital platforms to bolster accountability and streamline information sharing. Furthermore, the framework emphasizes the pivotal role of risk management and resilience-building in effectively addressing emergent environmental and social challenges, fortifying adaptive capacity and securing long-term viability. Addressing potential barriers to CSR integration, the framework underscores the imperatives of leadership commitment, fostering an organizational culture conducive to sustainability, and harnessing employee engagement, empowering employees to champion sustainability initiatives and drive transformative change.**

**KEYWORDS**

**Corporate Social Responsibility (CSR)- Supply chain management - Environmental sustainability -Social equity - Stakeholder engagement**

## INTRODUCTION

Corporate Social Responsibility (CSR) represents a fundamental commitment adopted by businesses globally, striving to strike a balance between financial success and contributing positively to the well-being of employees, local communities, and the broader society. This concept has gained significant traction in an era marked by heightened globalization, where corporations are increasingly expected to go beyond profit maximization and take into account the wider social and environmental ramifications of their operations. From engaging in philanthropic endeavors to implementing strategies aimed at addressing human rights violations and labor inequalities, CSR encompasses a diverse range of initiatives geared towards fostering ethical, legal, and socially conscious business practices. This paradigm shift underscores the evolving relationship dynamics between corporations, governmental bodies, and the communities they serve, underscoring the imperative for businesses to embrace their role as responsible corporate citizens in today's complex socio-economic landscape. In addition to its broader societal implications, Corporate Social Responsibility (CSR) holds particular significance within the realm of supply chain management. As companies increasingly recognize the interconnectedness of their operations with global supply chains, the principles of CSR extend beyond internal organizational practices to encompass the entire supply chain ecosystem. This entails ensuring ethical sourcing practices, promoting fair labor standards, and minimizing environmental impact throughout the supply chain network. By integrating CSR principles into supply chain management, businesses can mitigate risks, enhance brand reputation, and foster sustainable long-term relationships with suppliers and stakeholders. Moreover, addressing CSR within the supply chain not only aligns with ethical imperatives but also contributes to operational efficiency and resilience in an increasingly interconnected global marketplace

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## CSR IN SUPPLY CHAIN

Supply chain Corporate Social Responsibility (CSR) involves collaboration among companies within a supply chain to address environmental and social issues collectively. A typical supply chain encompasses various businesses involved from resource procurement to distribution. When stakeholders criticize one company in the chain, it can affect others. To mitigate this, companies exchange information, conduct surveys, and perform audits to understand and address CSR issues. Correcting CSR-related problems ensures compliance with laws and stakeholder expectations. Additionally, CSR activities that enhance the business can benefit the entire supply chain by

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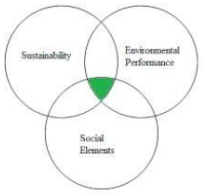
improving competitiveness and resilience. Promoting supply chain CSR not only boosts competitiveness but also enhances social and environmental impact, fostering trust among potential business partners.

PILLIARS OF CSR




**Social Pillar**

This mainly focus is placed on ensuring fair wages and safe working conditions, while also addressing issues like forced labor, child labor, discrimination, and harassment. Additionally, efforts are highlighted in terms of community engagement, including initiatives such as education programs, healthcare support, and infrastructure development, all aimed at positively impacting local communities. Furthermore, emphasis is placed on fostering diversity, equity, and inclusion within the workforce and supply chain, with a focus on fair hiring practices and providing opportunities for underrepresented groups.

**Environmental Pillar**

It measures are outlined to address pollution prevention, waste reduction, and resource conservation, including strategies for sustainable sourcing and supply chain management. This involves sourcing materials and products responsibly, utilizing sustainable materials, renewable energy, and eco-friendly packaging. Additionally, initiatives are highlighted for biodiversity conservation and ecosystem protection, focusing on preserving natural habitats and minimizing the environmental impact of supply chain activities.

**ECONOMIC PILLAR**

This encompasses commitments to fair trade principles, ethical sourcing, and responsible business conduct, ensuring fair wages, supporting small-scale producers, and promoting transparency in pricing. It also discusses initiatives aimed at economic development and shared value creation within communities, fostering entrepreneurship, and promoting inclusive economic growth through supply chain activities. Moreover, strategies for enhancing supply chain resilience, managing risks, and building long-term partnerships with suppliers are addressed to promote economic stability and continuity

THE CORPORATE SOCIAL RESPONSIBILTY (CSR) KEY PERFORMANCE INDICATOR (KPIs) RELEVANCE

KPIs should be closely linked to the specific objectives of your supply chain, incorporating sustainability and CSR goals to provide meaningful insights into the impact of your operations. If a KPI does not directly contribute to these objectives, it may not be relevant and could potentially dilute focus and resources.

ACTIONABILITY

The best KPIs are those that provide actionable data, enabling decision-makers to adjust strategies and initiatives based on the insights gleaned. If a KPI does not offer actionable insights or if changes cannot be made in response to its findings, it may not be practical or beneficial to the organization.

CLARITY

Each indicator should be clear and easily understandable to all stakeholders involved. Complex or ambiguous KPIs can lead to confusion and misinterpretation, undermining their effectiveness in driving informed decision-making.

TIMELINESS

KPIs should provide data in a timely manner, preferably in real-time or near real-time, to enable proactive responses to changing circumstances and trends in the supply chain environment.

BENCHMARKING

KPIs should allow for comparison with industry benchmarks and competitors' performance to gauge progress and identify best practices in CSR and sustainability efforts.

DATA QUALITY

Ensure that KPIs are based on accurate and unbiased data, as poor data quality can lead to misleading conclusions and ineffective decision-making. Automating data collection processes can help improve accuracy and efficiency.

BALANCE

Maintain a balanced set of KPIs covering various aspects of the organization's supply chain, including financial, customer, process, learning, and growth perspectives, to provide a comprehensive view of performance.

REVIEW CYCLE

Regularly review, revise, and refine KPIs to ensure their ongoing relevance and effectiveness. As organizations and external environments evolve, KPIs must adapt to reflect changing priorities, goals, and market dynamics.

CHALLENGES OF IMPLEMENTING CSR IN SUPPLY CHAINS

LIMITED RESOURCES AND SHORT-TERM FOCUS

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Many organizations encounter difficulties in allocating sufficient resources and overcoming short-term focus to effectively implement CSR initiatives throughout their supply chains. In the face of competing priorities and financial constraints, some organizations may prioritize short-term profitability over long-term sustainability, leading to underinvestment in CSR activities. Moreover, the lack of dedicated resources, such as funding, expertise, and personnel, can impede the integration of comprehensive CSR practices into supply chain operations. Without adequate resources and a commitment to long-term sustainability, organizations may struggle to address pressing social and environmental challenges effectively.

COMPLEX SUPPLY CHAIN

The modern business landscape is characterized by increasingly complex supply chains, involving numerous stakeholders, diverse geographical locations, and intricate networks of suppliers and subcontractors. Managing and overseeing CSR practices across such complex supply chains can be a daunting task, as organizations must navigate differing regulatory environments, cultural norms, and ethical standards. Furthermore, the lack of transparency and visibility within supply chains can exacerbate challenges related to monitoring and ensuring adherence to CSR principles throughout the entire chain. Without robust governance mechanisms and effective communication channels, organizations may struggle to implement consistent CSR practices across their supply chains.

SKEPTICISM FROM STAKEHOLDERS

Overcoming skepticism from various stakeholders, including suppliers, partners, investors, and consumers, is another significant barrier to the successful implementation of CSR initiatives within the supply chain. Some stakeholders may view CSR efforts as mere window dressing or PR tactics, rather than genuine commitments to social and environmental responsibility. Building trust and credibility among stakeholders requires transparent communication, meaningful engagement, and tangible actions to demonstrate a genuine commitment to CSR values and principles. Failure to address stakeholder skepticism can undermine the effectiveness of CSR initiatives and erode trust in the organization's integrity and credibility.

COMPLIANCE AND MONITORING

Ensuring compliance with CSR standards and effectively monitoring the implementation of these standards across the supply chain pose significant challenges for organizations. With an increasing focus on regulatory compliance and ethical sourcing practices, organizations must navigate a complex landscape of legal requirements, industry standards, and voluntary initiatives. Implementing robust compliance mechanisms and monitoring systems is essential to identify and address non-compliance issues proactively. However, the lack of standardized metrics, inconsistent reporting practices, and limited access to information within supply chains can hinder efforts to monitor and evaluate CSR performance effectively.

ADDRESSING HUMAN RIGHTS AND ENVIRONMENTAL ISSUES

Organizations often struggle to effectively address human rights and environmental issues within their supply chains, particularly in regions with less stringent regulations or where such issues are more prevalent. Ensuring fair labor practices, preventing forced labor and child labor, and mitigating environmental impacts require concerted efforts and collaboration with suppliers and other stakeholders. However, factors such as cost pressures, limited visibility into upstream operations, and cultural differences can complicate efforts to address these issues effectively. Moreover, the global nature of supply chains means that organizations may face challenges in enforcing CSR standards and implementing corrective actions across diverse geographical locations and cultural contexts. To overcome these challenges, organizations must adopt a proactive approach, engage with stakeholders collaboratively, and integrate CSR considerations into their procurement processes and supplier relationships.

ORGANISATIONAL BENEFITS OF CSR

Improved Reputation and Brand Awareness

Embracing CSR practices not only signifies a commitment to ethical and sustainable business practices but also serves as a powerful tool for enhancing a company's reputation and bolstering its brand awareness. By actively engaging in initiatives that benefit society and the environment, companies can cultivate a positive image in the eyes of consumers, investors, and the public. This enhanced reputation can attract new investors who are increasingly prioritizing socially responsible investments and appeal to consumers who prefer to support brands that align with their values. As a result, increased brand awareness and positive perception can translate into tangible business benefits, including higher sales, customer loyalty, and market share.

Employee Engagement

CSR initiatives play a crucial role in fostering a sense of purpose and meaning among employees, thereby driving higher levels of engagement, motivation, and job satisfaction. Employees are more likely to feel connected to their work and the organization when they see that their employer is actively making a positive impact on society and the environment. This sense of purpose can lead to improved employee morale, productivity, and retention rates, as employees are more likely to remain committed to an organization that shares their values and demonstrates a genuine commitment to social responsibility.

Competitive Advantage

Proactively addressing CSR risks and building a resilient supply chain can provide a significant competitive advantage for companies in today's market. Consumers are increasingly demanding transparency, accountability, and sustainability from the brands they support, and companies

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that can demonstrate a strong CSR track record are better positioned to meet these expectations. By integrating CSR into their business strategy and operations, companies can differentiate themselves from competitors, attract environmentally and socially conscious consumers, and access new market opportunities. Moreover, a strong commitment to CSR can enhance relationships with stakeholders, including suppliers, customers, and regulators, further strengthening the company's competitive position

Financial Success and Responsible Sourcing

Economic responsibility, such as paying fair wages and implementing responsible sourcing practices, not only aligns with ethical principles but also contributes to the long-term financial success of the business. By investing in the well-being of workers and communities, companies can foster a more stable and productive workforce, reduce turnover and absenteeism, and enhance operational efficiency. Additionally, responsible sourcing practices, such as ensuring ethical labor practices and minimizing environmental impact throughout the supply chain, can mitigate risks, improve product quality, and enhance brand reputation. Ultimately, these efforts can lead to cost savings, increased profitability, and sustainable business growth.

Environmental Impact and Community Relations

CSR initiatives aimed at reducing environmental impact and supporting local communities can have far-reaching positive effects on both the planet and society. By implementing sustainable practices, such as reducing carbon emissions, conserving natural resources, and minimizing waste, companies can contribute to mitigating climate change and protecting ecosystems. Additionally, investing in community development projects, such as education, healthcare, and infrastructure, can improve the quality of life for local residents and foster positive relationships with stakeholders. As a result, companies can earn the trust and loyalty of consumers who value environmental and social responsibility, ultimately enhancing their reputation and strengthening their position in the market.

AREAS OF PRIORITY OF SUPPLY CHAIN CSR


SUCCESS FOR THE CSR AND THE SUSTAINABILITY OF THE SUPPLY CHAIN ARE ASSOCIATED WITH A COOPERATIVE APPROACH

In the pursuit of Corporate Social Responsibility (CSR) and sustainability within the supply chain, a collaborative approach emerges as a cornerstone of success. It is imperative for companies to ensure that each of their suppliers is committed to CSR principles. This entails initiating constructive dialogue during contractual negotiations, where companies transparently share their CSR expectations and work collaboratively with suppliers to align their practices accordingly. Responding to the increasing demand from stakeholders for more transparent and communicative customersupplier relationships, companies are expected to foster an environment of openness and mutual understanding. Moreover, the role of procurement departments becomes pivotal in supporting suppliers in managing their CSR initiatives effectively. This involves fostering a partnership-oriented approach to drive meaningful change. Procurement departments can undertake various measures to assist suppliers, such as devising and overseeing the implementation of comprehensive CSR action plans tailored to each supplier's capabilities and needs. They can also organize themed workshops and training sessions to enhance awareness and capacity, providing suppliers with the necessary tools and knowledge to improve their CSR performance. Facilitating collaboration among suppliers to pool resources and knowledge is another key aspect, enabling them to learn from each other's experiences and best practices. Additionally, introducing incentives or compensation mechanisms, including financial support where necessary, can motivate suppliers to invest in CSR initiatives and drive continuous improvement. The integration of CSR into the supply chain presents a significant opportunity for holistic development within the ecosystem, enabling all stakeholders to contribute to the advancement of a more sustainable society. However, the success of such endeavors relies heavily on collaborative efforts across the entire supply chain, emphasizing a mutually beneficial "win-win" dynamic. As customer-supplier relationships evolve towards a more collaborative era, cooperation emerges as a critical factor in driving ecological transitions, optimizing procurement practices, and fostering innovation throughout the supply chain.

IMPLICATIONS OF NOT USING CSR PRINCIPLES

DIMINISHED BRAND EQUITY

Inadequate attention to corporate social responsibility can result in a decline in brand equity. Failures in CSR practices, particularly within supply chains, may lead to significant setbacks, including erosion of brand value and possible sanctions from regulatory bodies or watchdog organizations.

IMPACT ON SALES AND FINANCING

Studies indicate that as much as 82% of consumer purchasing decisions are influenced by CSR considerations. Consequently, companies that overlook CSR concerns risk experiencing a sharp decline in sales and funding due to a loss of trust among consumers and investors.

REGULATORY AND LEGAL RAMIFICATIONS

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Failure to adhere to CSR standards and regulations can expose businesses to fines and legal penalties, resulting in substantial financial and legal consequences.

DAMAGE TO REPUTATION

Neglecting CSR issues can inflict reputational harm, tarnishing the company's image and adversely affecting public perception of its products or services.

DISRUPTION IN THE SUPPLY CHAIN

Disregarding CSR considerations may lead to disruptions within the supply chain. Stakeholders may be less inclined to engage with companies that do not prioritize social and environmental responsibility, potentially disrupting supply chain operations.

TALENT ACQUISITION AND RETENTION CHALLENGES

Companies that fail to address CSR concerns may encounter difficulties in attracting and retaining top talent. In an increasingly competitive job market, prospective employees seek out employers who demonstrate a commitment to social and environmental responsibility, making it challenging for companies with inadequate CSR practices to attract and retain skilled personnel.

CONCLUSION

The integration of Corporate Social Responsibility (CSR) principles into supply chain management is imperative for businesses striving to achieve sustainable development goals while maintaining competitiveness and resilience. This paper presents a comprehensive framework designed to guide organizations in seamlessly incorporating CSR practices into their supply chain operations. Drawing insights from CSR theories, supply chain sustainability literature, and exemplary practices of leading organizations, the framework begins with a rigorous assessment of the organization's CSR performance, encompassing environmental impacts, social responsibilities, and governance structures. Strategic stakeholder engagement and materiality analysis lay the groundwork for aligning CSR objectives with business strategies and supply chain goals. Transparent metrics and robust performance indicators are established to monitor CSR performance across the supply chain, integrating financial and non-financial indicators relevant to environmental stewardship, social equity, and ethical business conduct. Embracing principles of transparency and shared value creation, organizations are empowered to engage meaningfully with stakeholders using cutting edge technology and digital platforms. The framework underscores the pivotal role of risk management and resilience-building in addressing emergent environmental and social challenges, fortifying adaptive capacity and securing long-term viability. Overcoming potential barriers to CSR integration requires leadership commitment, fostering a sustainability-oriented organizational culture, and harnessing employee engagement. The framework also emphasizes the integration of social, economic, and environmental dimensions, illustrating adaptability and scalability within dynamic commerce ecosystems. A collaborative approach is highlighted as essential for success, ensuring each supplier's commitment to CSR principles through constructive dialogue and support mechanisms. Neglecting CSR concerns in the supply chain can result in diminished brand value, sales and financing challenges, regulatory consequences, reputational damage, supply chain disruptions, and difficulties in talent acquisition and retention. Thus, embracing CSR principles within the supply chain is not only a moral imperative but also a strategic necessity for long-term business success and societal wellbeing.

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IC- TSI 2024
ISBN : 978-93-340-1483-9
29th February 2024

# Assessing the Impact of COVID-19 on Digital Payment Adoption and Financial Inclusion:

## *Trends A Comparative Study of Pre- and Post-Pandemic*

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**Abstract**

**The COVID-19 pandemic has profoundly impacted nearly every aspect of global society, including economies worldwide. While it has brought about uncertainty and challenges, it has also catalyzed advancements in technology and expanded its usage across various domains. Particularly, the pandemic has significantly influenced digital payment systems and financial inclusion, amplifying the role of technology in these areas. This study seeks to explore the ramifications of the pandemic on digital payment adoption and financial inclusion. Through the collection of primary data from numerous respondents, the study aims to provide insights into the evolving landscape of digital finance in the wake of the pandemic**

## 1. INTRODUCTION

Promoting digital payments has been a key focus for India since the demonetization of currency notes in 2016. Digital transactions offer advantages such as increased transparency, reduced costs associated with handling and storing cash, and broader accessibility for both merchants and consumers. Efforts to bolster digital payments have involved technological innovations, regulatory reforms, and financial support from both the Union Government and the Central Bank. Consequently, the COVID-19 pandemic facilitated the expansion of digital payment infrastructure and technological advancements in banking.

The World Bank defines financial inclusion as the provision of financial products and services that cater to the needs of individuals and businesses, including transactions, payments, savings, credit, and insurance. Quarantine measures imposed during the pandemic prompted millions of people to embrace digital tools for the first time, with many turning to e-commerce, online education, and other digital services. This surge in digital engagement globally sparked widespread interest in digital financial tools.

Highlighting the importance of financial inclusion in India is crucial, particularly in providing support to vulnerable groups. Financial inclusion not only contributes to enhancing digital financial accessibility but also plays a significant role in reducing inequality and fostering more balanced economic growth. This project aims to examine the impact of the pandemic on the digital transformation of financial services.

### II. STATEMENT OF THE PROBLEM

The rapid advancement of digital payment technologies in India, accelerated further by the COVID-19 pandemic, presents both opportunities and challenges for achieving comprehensive financial inclusion. Despite significant strides in digital payment adoption, particularly post-demonetization in 2016 and the subsequent government initiatives to promote cashless transactions, there remain segments of the population excluded from the formal financial system. This problem statement seeks to investigate the following key issues:

1. Understanding the extent to which the widespread adoption of digital payment methods has contributed to improving financial inclusion among various socio-economic groups in India.

**2.** Identifying the barriers and challenges faced by marginalized communities, including rural populations, women, and low-income individuals, in accessing and utilizing digital financial services.

**3.** Assessing the impact of the COVID-19 pandemic on the adoption and usage of digital payment platforms, particularly in terms of enhancing or hindering financial inclusion efforts.

**4.** Examining the effectiveness of existing policies and regulatory frameworks in fostering an inclusive digital payments ecosystem and addressing disparities in access to financial services across different demographic segments.

**5.** Exploring potential strategies and interventions to promote greater financial inclusion through digital payment mechanisms, taking into account lessons learned from pre and post-COVID-19 contexts.

By addressing these research questions, this study aims to provide insights into the complex relationship between digital payment adoption and financial inclusion in India and offer recommendations for policymakers, financial institutions, and other stakeholders to enhance inclusivity and accessibility within the digital financial ecosystem.

### III. SCOPE OF STUDY

The objective of this study is to investigate the perceptions of respondents regarding digital financial services.

This study aims to examine both the positive and negative impacts of technology on financial services, both before and after the COVID-19 pandemic.

The study intends to provide insights into the increase in financial inclusion and itsimplications.

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## IV. OBJECTIVES

To assess the accessibility and inclusivity of financial services during the pandemic.
To quantify the increase in financial inclusion facilitated by digital payment methods.
To offer recommendations based on the study findings to enhance financial inclusion initiatives.

## V. TOOLS USED FOR ANALYSIS

Percentage analysis
Percentage is number shown in fractions of 100. It states the difference between the two numerics calculated with same base. The percentage analysis shows the differences in the objects compared. It gives a clear highest and lowest suggestions.
Chi-square Test
Test which compares the expected results with the observed results with statistical data gathered. it helps find the variable in the study. its used in hypotheses testing. it shows whether the two variables are independent from each other.
DEGREE OF FREEDOM = (R-1)*(C-1)

$$\chi_c^2 = \sum \frac{(O_i - E_i)^2}{E_i}$$

Whereas,
E – Expected Frequency
R – Number of rows
C – Number of columns
O – Observed frequency

## VI. LIMITATIONS OF STUDY

Possibility of respondents being biased.

Data collected is from a smaller section of population.

## VII. REVIEW OF LITERATURE

Dr. Shahrukh Saleem, Mr. B. Sreekanth, Dr. N. Gangisetty - (2022) States that, the Covid-19 has a beneficial and significant impact on India's digital payment system. Due to the COVID-19, the government is concentrating on getting customers to accept digital payments now, which werepreviously not mandatory. The offline-to-online transfer in payments has been encouraged by NPCI to switch to digital payment. Merchants are moving more into the "real world," and we are starting to see solutions emerge.

Achutamba .V, Dr.Hymavathi CH,(2022) discussed, COVID-19 changed the payment methods from traditional to digital payments. Even though there have been some problems and individuals may find it difficult to trust digital payments, once certain measures are made, consumers will undoubtedly move to digital payments. People are moving toward digitalization because they are using less cash for all forms of payment.

## VIII. ANALYSIS AND INTERPRETATION

### ENCOURAGES TO MAKE ONLINE PAYMENT

| | NO. OF RESPONDENTS | % |
|---|---|---|
| LACK OF CASH | 21 | 13.9% |
| LACK OF CHANGE | 18 | 11.9% |
| CASH BACK | 12 | 7.9% |
| SHOPKEEPER INSISTS | 6 | 4% |
| CONVENIENCE | 93 | 62.3% |
| | 150 | |

### INTERPRETATION

Table represents the motive which encourages people to make online payment. 93 respondents are motived to make online payment with regards to the convenience, 21 respondents due to lack of real cash, 18 respondents due to lack of change, 12 respondents for the benefit of cashback, 6 respondents due to the shopkeepers insistence. Thus, various reasons makes the people to make online payments.

AFTER THE IMPACT OF COVID 19 USAGE RATE OF DIGITAL PAYMENT
INTERPRETATION

| OPTION | NO. OF RESPONDENTS | | | | | SCORE | RANK |
|---|---|---|---|---|---|---|---|
| SENDING MONEY | 8 | 20 | 108 | 136 | 315 | 587 | II |
| BILL PAYMENT | 2 | 30 | 105 | 240 | 190 | 567 | III |
| SHOPPING | 8 | 24 | 96 | 240 | 190 | 558 | IV |
| BOOKING TICKETS | 11 | 40 | 129 | 152 | 190 | 522 | VII |
| HOTEL/PETROL /TAXI | 18 | 58 | 132 | 112 | 150 | 470 | VIII |
| FOOD ORDERING | 8 | 30 | 120 | 148 | 250 | 556 | V |
| RECHARGE | 1 | 20 | 102 | 160 | 325 | 608 | I |
| GROCERIES | 18 | 40 | 84 | 148 | 235 | 525 | VI |

Table states the impact of COVID-19 in the usage rate of digital payment. The various day to day activities are listed and ranked accordingly which impacts more usage of digital payments. Recharge has the highest impact and ranked first, second is sending money, third comes bill payment, fourth is shopping, fifth is food ordering, sixth is groceries, seventh is booking tickets, the last is hotel, petrol, taxi.

### STATISTICAL ANALYSIS

CHI-SQUARE

The Chi-square test has been calculated based on the perception level of the respondents' Adoption in Digital Payment
The level of perception has been classified into high, medium, and low satisfied for the actual score for the chi-square calculated value.
AGE WITH DIGITAL PAYMENT AWARENESS

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ISBN : 978-93-340-1483-9
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To find the respondent's BHIM/UPI awareness level according to age with digital payment products, the chi-square test is used, and the result of the test is given below. The following hypothesis was used to test the relationship between respondents' age and their level of awareness in technology.
H0: The respondents' levels of education and trust in technology are independent.
H1: Respondents' education and level of trust in technology are dependent.
X=(Oi-Ei)^2/Ei, where Of denotes the observed (actual) value and Ear denotes the
(expected) value

**AGE WITH DIGITAL PAYMENT PRODUCT AWARENESS LEVELBHIM/UPI**

| Factors | Calculated value | Table value | Degree of freedom | Significant |
|---|---|---|---|---|
| Age With Awareness Level | 11.684 | 12.09 | 6 | 5% |

Since the calculated value is less than the table value, where the result is significant at the 11.684 level, the H0 hypothesis is accepted, and it can be concluded that the age level and awareness of digital payments are independent.

FINDINGS OF THE STUDY

- The majority of the young respondents opted for the digital payment.
- The pandemic made the contactless payment easier for the users.
- The study conveys the respondents prefer more digital modes of payment for recharge.
- The chi-square test shows the relationship between the age level and the awareness of digital payment product is significant at the 11.684 level.

SUGGESTIONS

The project suggests that the COVID-19 pandemic has a great influence on the digital payment.
There is a wider expansion in the financial inclusion and the technology over the financial services.
The users prefer more digital financial services which should be prevented from the technical issues and also safeguarded from the cyber crimes.

CONCLUSION

The analysis reveals a predominant usage of digital payment services among individuals aged below 25, indicating a preference for technology-driven solutions, particularly among the younger demographic. The exigencies of the pandemic have accelerated the adoption of digital financial services, expanding financial inclusion and broadening access to a global market. Payment preferences appear to be shaped by diverse factors, includingage and income levels, underscoring themultifaceted nature of consumer behavior in the digital economy.

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IC- TSI 2024
ISBN : 978-93-340-1483-9
29th February 2024

# A COMPARATIVE ANALYSIS ON THE FINANCIAL PERFORMANCE OF RAMCO CEMENTS LTD. AND INDIA CEMENTS LTD. USING RATIO ANALYSIS

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***Abstract*— Financial analysis is the process of identifying the financial strengths and weakness of the firm by properly establishing relationships between the items of balance sheet and the profit and loss statement. Financial analysis can be undertaken by the management of the firm or by the parts outside the firm.Analysing and interpretation of financial statements refers to a treatment of the information that are in the income statement and the balance sheet so as to provide full diagnosis of the profitability and financial soundness of the business. The basis for financial analysis, planning and decision making is the financial statements. Financial statements are an organized collection of data and resources of a company. A complete set of financial statements consists of a Balance sheet, a statement of Profit and loss, a Cash flow statement together with the notes and other explanatory materials. This study is about the financial performance analysis of the Ramco Cements Ltd and India Cements Ltd using the Ratio Analysis.**

**Keywords: Ratio Analysis, Cement Industry, Financial Performance, etc.**

## I. INTRODUCTION

The basis for financial analysis, planning and decision making is the financial statements. Financial statementsare an organised collection of data and resources of a company. A complete set of financial statements consists of a Balance sheet, a statement of Profit and loss, a Cashflow statement together with the notes and other explanatory materials.The financial statements do not disclose all the necessary and relevant information. For the purpose of obtaining the material and relevant information, it is necessary to analyse the data depicted in the financial statements.

Financial analysis is the process of identifying the financial strengths and weakness of the firm by properly establishing relationships between the items of balance sheet and the profit and loss statement. Financial analysis can be undertaken by the management of the firm or by the parts outside the firm.

All parts of financial statements are interrelated, because they reflect the different aspects of same transactions or events. Although each statement provides information that is different from each other, none in isolation is likely to serve any single purpose nor can anyone provide all information that are needed by the user.The main purpose of financial statements is to convey an understanding of some financial aspects of a business firm.

STATEMENT OF THE PROBLEM

Analyzing financial performance is the process of evaluating the common parts of financial statements to obtain a better understanding of firm's position and performance. Financial performance analysis helps the investors and creditors evaluate past and current performance and financial position, and to predict future performance.Nowadays due to the changing policies of the government and also due to the increased competition, the financial performance is not appreciable. Though the company developed well, it could not earn much profit as other sectors.Hence, we are analyzing the financial statement of the selected companies in order to evaluate and compare their financial position.

OBJECTIVES OF THE STUDY

- To analyse the profitability and earning capacity of the business.
- To study the financial position and its operation.

SCOPE OF THE STUDY

This study mainly attempts to analyze the financial performance of the company selected for the study. The financial authorities can use this in future for evaluating their performances. This help the company to apply its resources of the company properly for the development.

LIMITATION OF STUDY

The accuracy of the results of the study depends upon the accuracy of the data provided by the company.

The study covers a period of 5 years.

The ratios, techniques and statistical tools used has its own limitations

RESEARCH METHODOLGY

Methods Of Data Collection

Secondary Data

The secondary data is derived from the annual reports, business line and finance newspapers.

Period Of Study

The study covers the time period of 5 years from the financial year 2015-16 and 2019 – 20

Tools And Tecniques Used

To analyze and interpret the financial statements of the study, the following tools are used in the study.

Ratio analysis

RATIO ANALYSIS:

A Ratio is defined as, "the indicated quotient of two mathematical expression and as the relationship between two or more things."

Ratio analysis is based on the fact that a single accounting figure by itself cannot communicate any meaningful information, but when expressed as a relative to some other figure, it may definitely provide some significant information.

Ratio analysis is not just comparing different numbers from financial statements, it is comparing the number against previous years or other companies.

FINANCIAL RATIO:

IC- TSI 2024
ISBN : 978-93-340-1483-9
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Financial ratio is the relationship between two financial variables. It helps to ascertain the financial condition of the firm.

TYPES OF FINANCIAL RATIOS:

Liquidity ratios
Leverage ratios
Activity ratios
Profitability ratios

LIQUIDITY RATIO:

The term "liquidity" and "short term solvency" are used synonymously. Liquidity means ability of the business to pay its short term liabilities.

LEVERAGE RATIO:

The leverage ratios may be defined as those financial ratios which measure the long term stability and structure of the firm.

ACTIVITY RATIO:

These ratios are employed to evaluate the efficiency with which the firm manages and utilises its assets. It is also called as "Asset management ratios".

PROFITABILITY RATIO:

The profitability ratios measure the profitability or the operational efficiency of the firm. They reflect the final results of business operations. Management attempts to maximise this ratio to maximise the firm's value.

OVERVIEW OF THE COMPANIES INDIA CEMENTS

The India cement ltd is indeed a pioneer enterprise during the post-independence era to become a public limited company. The first annual report appeared on 21.4.1947. The company's prospectus was favourably received and the public issue was oversubscribed.

While retaining cement over the years as its mainstay, India cements has ventured into related fields like shipping, captive power and coal mining that have purposeful synergy to the core business. This also stemmed from the company's strategy of emerging and other inputs in the supply chain at competitive costs.

India cements will strive to remain a leader in the manufacture of cement and establish itself as a preferred supplier of products and services to its clients and enhance the brand value of all stakeholders.

RAMCO CEMENTS

Ramco cements has one of the lowest cost of operations in the industry supported by integrated operations right from mining to clinker production to grinding to marketing finished goods . Its plants are strategically spread across the southern and eastern coastal belt facilitating sea route transportation for import and export, and thus reducing inland transportation. They have invested in railway siding along with high -end automation equipment like wagon tipple, clinker / cement loading etc. which enables us to maintain high levels of productivity with minimum handling cost and reduces cost of transportation.

Their plants are in proximity to raw material sources/ end markets ensuring lower logistics movement. All their plants have captive power plants and WHRS thereby significantly reducing their power costs. Increasing use of alternate fuel and materials further help in reducing costs.Besides the quality of the product, one of the main reasons for the company's ability to retain its strong hold and also consistently expand its market share in new areas is due to a vast network of dealers developed over a period of time. The company can be proud of having the largest number of stockists, besides having largest number of exclusive stockists spread over in rural and semi urban areas.

REVIEW OF LITERATURE

Zafar S.M.Tariq& Khalid S.M (2012)1.The study explored that ratios are calculated from financial statements which are prepared as desired policies adopted on depreciation and stock valuation by the management. Ratio is simple comparison of numerator and a denominator that cannot produce complete and authentic picture of business. Results are manipulated and also may not highlight other factors which affect performance of firm by promoters.

Hotwani Rakhi (2013)2. The author examines the profitability position and growth of company in light of sales and profitability of Tata Motors for past ten years. Data is analyzed through ratios, standard deviations and coefficient of variance. The study reveals that there not exists a strong relationship between sales & profitability of company.

Maheswari, V. (2015)3Made an attempt to analyze the financial soundness of the Hero Honda motors limited have identified three factors, namely liquidity position, solvency position and profitability position based on the study of period 2002 to 2010 using ratio analysis.

Agarwal, Nidhi (2015)4. The study focus on the comparative financial performance of Maruti Suzuki and Tata motors ltd. The financial data and information required for the study are drawn from the various annual reports of companies. To analyze the leverage position four ratios are considered namely, capital gearing, debt-equity, total debt and proprietary ratio. The result shows that Tata motors ltd has to increase the portion of proprietor's fund in business to improve long term solvency position.

ANALYSIS AND INTERPRETATION

RATIO ANALYSIS:

Ratio analysis is a technique of analysis and interpretation of financial statements. It is used as a device to analysis and interpret the financial health of a firm. Analysis of a financial statement with the aid of ratio helps to arrangements in decision making control.

KEY FINANCIAL RATIOS:

There are 4 categories of ratios used in financial statement analysis.

Liquidity ratios
Leverage ratios
Profitability ratios
Activity ratios

LIQUIDITY RATIOS:

The term "liquidity" and "short term solvency" are used synonymously. Liquidity means ability of the business to pay its short term liabilities.

CURRENT RATIO:

It is the best measure of short term solvency. It addresses the question , "does your business have enough current assets to meet its current debts?". Generally acceptable current ratio is 2:1.

Current Ratio = Current Assets / Current Liabilities

Table 1: CURRENT RATIO

| YEAR | CURRENT ASSETS | CURRENT LIABILITIES | RAMCO CEMENTS | CURRENT ASSETS | CURRENT LIABILITIES |
|---|---|---|---|---|---|
| 2015 - 16 | 1302.06 | 1484.38 | 0.88 | 1512.2561 | 2213.976 |
| 2016 - 17 | 1421.78 | 2025.48 | 0.70 | 1698.5949 | 2311.3523 |
| 2017 - 18 | 1298.58 | 1824.03 | 0.71 | 1759.6091 | 1883.1627 |
| 2018 - 19 | 1380.51 | 2067.55 | 0.67 | 2124.1519 | 2421.8158 |
| 2019 - 20 | 1575.7 | 2336.32 | 0.67 | 2176.4891 | 2837.932 |

**Exhibit 1**

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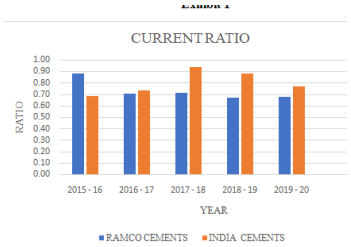
ISBN : 978-93-340-1483-9
29th February 2024




INTERPRETATION:

The ideal ratio is 2:1. But during the period of study, the current ratio is lesser than the standard. This shows a downward change in current ratio which means inability of the companies to meet their current obligations.

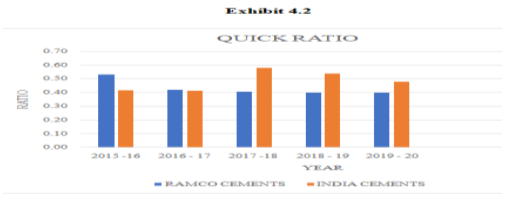
1. QUICK RATIO:

Quick ratio is also known as "Acid test ratio". It helps answer the question "If all sales revenues should disappear, could my business meet its current obligations with the readily convertible quick funds on hand?"

Quick Ratio = Quick Assets / Current Liabilities

Table 2: QUICK RATIO

| YEAR | QUICK ASSETS | CURRENT LIABILITIES | RAMCO CEMENTS | QUICK ASSETS | CURRENT LIABILITIES | INDIA CEMENTS |
|---|---|---|---|---|---|---|
| 2015 -16 | 784.02 | 1484.38 | 0.53 | 917.01 | 2213.98 | 0.41 |
| 2016 - 17 | 845.21 | 2025.48 | 0.42 | 953.59 | 2311.35 | 0.41 |
| 2017 -18 | 737.33 | 1824.03 | 0.40 | 1087.36 | 1883.16 | 0.58 |
| 2018 - 19 | 819.43 | 2067.55 | 0.40 | 1300.94 | 2421.82 | 0.54 |
| 2019 - 20 | 928.82 | 2336.32 | 0.40 | 1350.23 | 2837.93 | 0.48 |




INTERPRETATION:

An acid test of 1:1 is considered satisfactory. But here during the period of study, the value of quick ratio is lesser than the standard ratio. This shows that the companies are in a position where they cannot meet their current obligation with their readily convertible quick funds on hand.

LEVERAGE RATIOS:

The leverage ratios may be defined as those financial ratios which measure the long term stability and the structure of the firm. These ratios indicate the mix of funds provided by the owners and lenders and assure them with regard to,

Periodic payment of interest

Repayment of principal amount on maturity

DEBT TO EQUITY RATIO:

This ratio indicates the proportion of debt fund in relation to equity. It is often referred in capital structure decision making.

Debt To Equity Ratio = Total Debt / Shareholder's Equity

Table 3: DEBT TO EQUITY RATIO

| YEAR | RAMCO CEMENTS LTD | INDIA CEMENTS LTD |
|---|---|---|
| 2015 -16 | 56.92% | 65.93% |
| 2016 - 17 | 30.42% | 52.49% |
| 2017 -18 | 24.71% | 57.17% |
| 2018 - 19 | 31.72% | 56.88% |
| 2019 - 20 | 53.52% | 57.56% |


INTERPRETATION:

Generally speaking, a debt to equity ratio below 1.0 would be seen as relatively safe, whereas ratios of 2.0 or higher would be considered risky. The debt to equity ratios of both the companies are within the optimum limits i.e. the balance between taxes and financial expenses are maintained.

2. PROPRIETARY RATIO:

Proprietary ratio indicates the proportion of total assets financed by shareholders. This ratio shows the long term solvency of the business.

Proprietary Ratio = Proprietary Fund / Total Assets

Table 4: PROPRIETARY RATIO

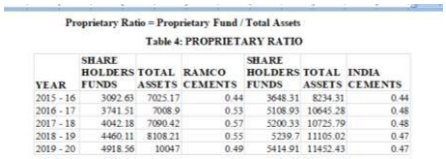
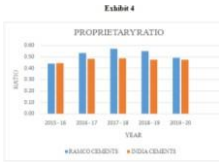

Proprietary Ratio = Proprietary Fund / Total Assets

Table 4: PROPRIETARY RATIO

| YEAR | SHARE HOLDERS FUNDS | TOTAL ASSETS | RAMCO CEMENTS | SHARE HOLDERS FUNDS | TOTAL ASSETS | INDIA CEMENTS |
|---|---|---|---|---|---|---|
| 2015 - 16 | 3092.63 | 7025.17 | 0.44 | 3648.31 | 8234.31 | 0.44 |
| 2016 - 17 | 3741.51 | 7008.9 | 0.53 | 5108.93 | 10645.28 | 0.48 |
| 2017 - 18 | 4042.18 | 7090.42 | 0.57 | 5200.33 | 10725.79 | 0.48 |
| 2018 - 19 | 4460.11 | 8108.21 | 0.55 | 5239.7 | 11105.02 | 0.47 |
| 2019 - 20 | 4918.56 | 10047 | 0.49 | 5414.91 | 11452.43 | 0.47 |




INTERPRETATION:

This ratio indicates the proportion of total assets financed by the shareholders. During the period of study in the given companies, major share of the assets are financed by the shareholders.

PROFITABILITY RATIOS:

The profitability ratios measure the profitability or the operational efficiency of the firm. These ratios reflect the final results of business operations. Management attempts to maximise these ratios to maximise the firm value.

NET PROFIT RATIO:

It measures the relationship between net profit and sales of the business. It is determined by dividing the net income after tax to the net sales for the period and measures the profit per rupee of sales.

Net Profit Ratio = Net Profit / Sales * 100

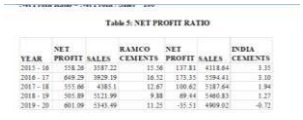


Table 5: NET PROFIT RATIO

| YEAR | NET PROFIT | SALES | RAMCO CEMENTS | NET PROFIT | SALES | INDIA CEMENTS |
|---|---|---|---|---|---|---|
| 2015 - 16 | 558.28 | 3587.22 | 15.56 | 137.81 | 4318.64 | 3.19 |
| 2016 - 17 | 649.29 | 3929.19 | 16.52 | 173.35 | 5394.41 | 3.21 |
| 2017 - 18 | 555.66 | 4385.1 | 12.67 | 100.62 | 5187.64 | 1.94 |
| 2018 - 19 | 505.89 | 5121.99 | 9.88 | 69.44 | 5460.83 | 1.27 |
| 2019 - 20 | 601.09 | 5343.49 | 11.25 | -35.51 | 4909.02 | -0.72 |

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INTERPRETATION:

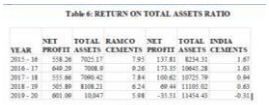
This ratio measures the relationship between net profit and the sales of the business. During the period of study in the given companies, there was a gradual decrease in the net profits of the companies. This indicates negative returns of the business.

RETURN ON TOTAL ASSETS:

The profitability ratio is measured in terms of relationship between net profits and assets employed to earn that profit. This ratio measures the profitability of the firm in terms of assets employed in the firm.

Return On Total Assets = Net Profit After Tax / Total Assets * 100

Table 6: RETURN ON TOTAL ASSETS RATIO





INTERPRETATION:

It measures the net profit per rupee of average total assets. During the study period in the said companies, the return on assets were fluctuating. It decreases even to negative ratio in the last year. Since it measures the profitability on investment, the ratios shows that there was a declining trend.

RETURN ON CAPITAL EMPLOYED :

Return on capital employed should always be higher than the rate at which the company borrows. It is another variation of rate of interest.

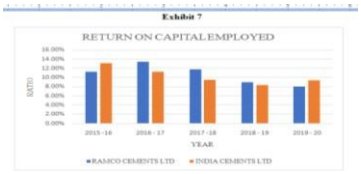
ROCE = Earnings Before Interest And Tax / Capital Employed *100

Where,

Capital Employed = Total Assets – Current Liabilities

Table 7: RETURN ON CAPITAL EMPLOYED

| | RAMCO CEMENTS LTD | | | INDIA CEMENTS LTD | | |
|---|---|---|---|---|---|---|
| YEAR | EBIT | CAPITAL EMPLOYED | RATIO | EBIT | CAPITAL EMPLOYED | RATIO |
| 2015 -16 | 792 | 7025 | 11.27% | 552 | 6020 | 13.15% |
| 2016 - 17 | 941 | 7009 | 13.43% | 612 | 8334 | 11.29% |
| 2017 - 18 | 837 | 7090 | 11.81% | 449 | 8843 | 9.47% |
| 2018 - 19 | 728 | 8108 | 8.98% | 387 | 8683 | 8.38% |
| 2019 - 20 | 812 | 10047 | 8.08% | 353 | 8615 | 9.42% |




INTERPRETATION:

The return on capital employed shows how much operating income is generated for each rupee of capital invested. A higher ROCE indicates that more profits are generated per unit of capital employed. From the graph, we can see that the returns on capital employed decrease gradually and increase in the previous year, however, the profitability of India cements is better than that of Ramco cements.

## CONCLUSION

After the study, we are able to conclude that the trends of Ramco Cements and India Cements are fluctuating. The Ramco Cements performs better both in terms of rate of increase in earnings and also in terms of absolute value of the earnings in comparison to its rival. The sales trend analysis has been done on year on year basis in this scenario, to tackle seasonality in the business. The company also can do better business by following the trend. This better understanding helps the company to plan the short term and long term strategies.

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- www.moneycontrol.com
- www.corporatefinanceinstitute.com
- www.ramcocements.in
- www.indiacements.co.in

IC- TSI 2024
ISBN : 978-93-340-1483-9
29th February 2024

# PROBLEMS FACED BY CUSTOMERS ON ONLINE SHOPPING WITH SPECIAL REFERENCE TO COIMBATORE CITY

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## ABSTRACT

**Online shopping is one of the most common ways to make Purchases in the modern world, but not everyone feels comfortable doing so. It is convenient for both buyers and sellers to shop online. Men and women of different ages and ethnicities make up the online shopping community. Here, the benefits and drawbacks have been taken into account to understand the issues that clients are facing. This article makes an effort to learn about the things that customers buy from online retailers and to pinpoint the many kinds of issues that customers run into when they shop online. The primary data for this investigation were obtained. By means of a questionnaire, the primary data were collected. Convenient sampling was used to gather information from respondents.**
**Keywords: Customers, Internet and Online shopping.**

### I.INTRODUCTION

Our world is digitalized and controlled by the internet. Internet usage is increasing, which presents a rising opportunity for e-marketers. The way that goods and services are bought and sold has significantly changed because to the internet. People of all ages are increasingly engaging in online buying due to the rising use of the internet. Compared to adults, children are more interested in purchasing online. Because online purchasing is quicker and more convenient than offline shopping, consumers prefer it. There are several ways to pay when purchasing online. The way a customer feels about shopping online reflects how they feel about buying things online psychologically. The term "online buying behavior" describes the practice of making purchases online. Online purchasing behavior involves a number of steps and process as traditional shopping. This study helps to understand the problems faced by customers and suggestions has been provided to solve these problems.

### II.STATEMENT OF THE PROBLEM

The interest of consumers in internet purchasing is slow to develop. Online purchasing does, however, appear to have a bright and hopeful future. This study's focus is on consumer attitudes and issues related to online purchasing. By identifying the characteristics that motivate consumers to shop online, these factors will assist marketers in developing effective online marketing tactics.

### III. SCOPE OF THE STUDY

This study primarily focuses on primary data, which is information gathered from internet shoppers in Coimbatore city alone using questionnaires. The survey addresses consumer perceptions of internet buying as well as issues consumers encounter when making purchases online.

### IV. OBJECTIVES

This study covers the following objectives:

- ✓ To assess the internet customer's socioeconomic standing.
- ✓ To examine the elements influencing consumers' decisions to shop online.
- ✓ To examine the issues that customers encounter when they shop online.
- ✓ To provide appropriate recommendations based on their results.

### V. METHODOLOGY

The study's target population is a sample of Coimbatore city residents who have made internet purchases. Descriptive research design was employed for this study. Research studies that focus on characterizing the traits of a certain person or group are known as descriptive studies.

### VI. POPULATION AND SAMPLE SIZE

The total population size is indefinite. This refers to the number of sample to be selected from the total population to constitute this sample. The sample size used for study is 118.These samples were taken from Coimbatore city only..

### VII. SAMPLING DESIGN

It is a well-defined strategy for selecting a sample from a certain population. It alludes to a method the researcher uses to choose the sample. Convenient sampling is the basis for selecting the respondents in Coimbatore city.

### VIII. LIMITATIONS OF THE STUDY

- ✓ The research is limited to the city of Coimbatore.
- ✓ It is focused on the internet buying habits and issues that consumers face.
- ✓ All of the primary data used in the study was provided by the respondents.
- ✓ Personal prejudice is a possibility. Therefore, the accuracy is untrue.

### IX. SOCIO ECONOMIC STATUS OF THE RESPONDENTS

Socio economic condition of the respondents is an important aspect in determining the buying behavior and the satisfaction of the customer. Table 1 explains the details regarding socio economic classification of the respondents.

**TABLE 1**
**Socio Economic Status of the Respondents**

| *Classification* | *No. of Respondents* | *Percentage to Total* |
|---|---|---|
| *Sex* | | |
| Male | 68 | 57.45 |
| Female | 50 | 42.55 |
| *Age* | | |
| Upto 20years | 30 | 25.53 |
| 20-40years | 78 | 65.96 |
| Above 40years | 10 | 8.51 |
| Total | 118 | 100 |
| *Qualification* | | |
| Up to HSC | 13 | 10.64 |
| Graduate | 63 | 53.19 |
| Diploma/Technical | 13 | 10.64 |
| Professional Courses | 30 | 25.53 |
| Total | 118 | 100 |
| *Monthly income* | | |
| Below Rs.20000 | 45 | 38.30 |
| Rs.20000-Rs.40000 | 50 | 42.55 |
| Above Rs.40000 | 23 | 19.15 |

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| | | |
|---|---|---|
| Total | 118 | 100 |
| *Type of Family* | | |
| Nuclear Family | 90 | 76.60 |
| Joint Family | 28 | 23.40 |
| Total | 118 | 100 |
| *Domicile* | | |
| Rural | 70 | 59.57 |
| Urban | 48 | 40.43 |
| Total | 118 | 100 |
| | | |
| | | |

Source: Primary data

It is clear from the Table 1 that among the 118 respondents, 57.45 percent respondents are male customers and remaining 42.55 respondents are belonging to the female customer. The majority of the customers are male, Among the 118 respondents, 25.53 per cent of the respondents belong to age group of up to 20 years,65.96 per cent of the respondents belong to the age group 20-40 years, 8.51 per cent of the respondents belong to the age group above 40 years. A majority of respondents surveyed are in the age group of 20-40 years.

Among the 118 respondents, 10.64 per cent of the respondents are Up toHSC, 53.19 per cent of them are at Graduate,10.64 per cent of them are at Diploma/Technical, 25.53 per cent of them are at Professional.

Among the 118 respondents, 55.32 per cent of the respondents are student,4.26 per cent of the respondents are home maker,17.02 per cent of the respondents are in business/profession and 23.40 per cent of the respondents are salaried employee.

Out of 118 respondents, 34.04 per cent of the respondents are married and 65.96 per cent of the respondents are unmarried. The majority of the respondents are unmarried.

Among the 118 respondents, 38.30 per cent of the respondents come under the income range of below Rs.20000,42.55 per cent of them earn Rs.20000-Rs.40000,19.15 per cent of them come Above Rs.40000 as their monthly income. It is clear from the above table that two-fifth of the respondents come underRs.20000Rs.40000.

Out of 118 respondents, 76.60 per cent of the respondents are nuclear family and 23.40 percent of the respondents are joint family. The majority of the respondents are nuclear family. Among the 118 respondents, 59.57 per cent of the respondents are living in rural area and 40.43 percent of the respondents are living in urban area. The majority of the respondents are living in rural area.

**X. YEAR OF EXPERIENCE TOWARDS ONLINE SHOPPING**

Table 2 presents the details of the year of experience using online shopping.

**TABLE 2 Year of Experience using Online Shopping**

| S. No | Year of Experience | No. of respondents | Percentage |
|---|---|---|---|
| 1. | Up to 1 year | 50 | 42.55 |
| 2. | 2-3 year | 48 | 40.43 |
| 3. | More than 3 year | 20 | 17.02 |
| **Total** | | **118** | **100** |

Source: Primary Data.

It is clear from the Table 2 that among the 118 respondents, 42.55 per cent respondents are up to 1year, 40.43 per cent respondents are time spend 2-3 years and 17.02 per cent respondents are time spend more than 3 years.

The majority of the respondents are using online shopping up to 1 year.

**XI. CATEGORY OF GOODS PURCHASE THROUGH ONLINE**

Table 3 depicts the details of the category of goods purchase.

**TABLE 3**

**Category of Goods Purchase**

| S. No | Category | No. of Times purchase |
|---|---|---|
| 1. | Clothes | 75 |
| 2. | Electronics | 50 |
| 3. | Mobile and Mobile Accessories | 83 |
| 4. | Cosmetics care product/Fashion accessories | 28 |
| 5. | Household products | 25 |
| 6. | Books | 40 |
| 7. | Food wares | 55 |
| 8. | Others | 13 |
| **Total** | | **368** |

Source: Primary Data.

It is vivid from Table 3 that totally 368 times all the 118 respondents were purchased various kinds of goods and services through online shopping. The majority of times the respondents purchased mobile and mobile accessories.

**XII. RANK OF SHOPPING SITES OF ONLINE SHOPPING**

The table 4 shows the rank of shopping sites of online shopping in Coimbatore city. The top 5 online portal was selected for the purpose of the study. The rank of shopping sites based on the respondent's opinion.

**TABLE 4**

**Rank of Shopping Sites**

| S. No. | Website | Total Rank | Mean Rank | Standard Deviation | Variance | Rank |
|---|---|---|---|---|---|---|
| 1. | Flipkart | 263 | 2.23 | 1.15 | 1.31 | II |
| 2. | Amazon | 258 | 2.19 | 1.30 | 1.68 | I |
| 3. | Snapdeal | 370 | 3.15 | 1.30 | 1.69 | III |
| 4. | Paytm | 430 | 3.66 | 1.20 | 1.45 | IV |
| 5. | Myntra | 443 | 3.77 | 1.32 | 1.75 | V |

The table 4 analyses the rank of shopping sites by opinion of the respondents. The Amazon shopping sites got first rank and Flipkart got second rank for the online shopping. The last rank goes to Myntra for the online shopping sites of the respondents.

**XIII. PROBLEM FACED BYTHE RESPONDENTS THROUGHONLINE SHOPPING**

Table 5 explains respondents about the details the facing problem.

**TABLE 5**

**Problem of Customers in Online Shopping**

| S. No | Opinion | No. of Respondents | Percentage |
|---|---|---|---|
| 1. | Yes | 48 | 40.43 |
| 2. | No | 70 | 59.57 |
| **Total** | | **118** | **100** |

Source: Primary Data.

It is clear from the Table 5 that among the 118 respondents, 40.43 per cent respondents are problem faced, 59.57 per cent respondents are no problem faced. A majority of the respondents are problem faced by online shopping no opinion.

**XIV. PROBLEMS FACED BY CUSTOMERS THROUGH ONLINE SHOPPING**

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ISBN : 978-93-340-1483-9
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Table 6 examines the problems faced by the customers through online shopping.

**TABLE 6**
**Analyses of Problems Faced by Customers**

| S. No | Problems | Total Score | Mean | Standard Deviation | Variance | Rank |
|---|---|---|---|---|---|---|
| 1. | Wrong Product Delivery | 127 | 2.67 | 1.24 | 1.53 | II |
| 2. | Deliver of damaged product | 122 | 2.56 | 1.29 | 1.67 | I |
| 3. | Lack of Personalized Service | 140 | 2.94 | 1.47 | 2.17 | III |
| 4. | Poor Packaging | 164 | 3.44 | 1.29 | 1.67 | V |
| 5. | Difficulties in E-payments | 161 | 3.39 | 1.69 | 2.84 | IV |

The following are the suggestions on the basis of the findings of the study:

From the table 6, know the problem faced by respondents on the online shopping through their opinion. Delivery of damaged product is a major problem faced by the respondents and following wrong product delivery. The first rank goes to Delivery of the damaged product and last rank goes to poor packing of the product from the online shopping.

**XV. SUGGESTIONS**

1.The majority of consumers who purchase online have experienced the issue of receiving damaged products.

2. Customers believe that a week or longer is needed for product delivery. Thus, the internet retailer ought to shorten the time it takes to deliver products by two or three days.

3. It is important to inform customers about the many sales promotion programs that increase the appeal and popularity of online shopping.

4. Everyone, regardless of employment, ought to have access to appropriate awareness.

5. Online platforms need to guarantee the accuracy and quality of the information they provide to users.

6. Customers must be guaranteed web security and the privacy of their card information because the transaction is being completed online.

**XVI. CONCLUSION**

An interest in examining consumers' attitudes on internet buying has been demonstrated by this research. Online shopping is becoming more and more popular, especially with younger people. However, in the current environment, it will need to travel a greater distance to reach the same level of popularity across all age groups. According to the report, the majority of consumers have a positive view regarding online buying and suffer as a result of needless delays. In order to prevent delays, they should be careful to improve their surroundings.

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ISBN : 978-93-340-1483-9
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# CONTEMPORARY DRIFTS IN SUSTAINABLE SUPPLY CHAIN MANAGEMENT

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## Abstract

Sustainable Supply Chain Management (SSCM) has evolved significantly in response to growing environmental concerns, social expectations, and economic imperatives. This abstract provides a comprehensive overview of contemporary trends shaping the field of SSCM, highlighting key developments, challenges, and emerging practices. Recent trends in SSCM encompass a wide range of issues, including circular economy initiatives, climate change mitigation strategies, ethical sourcing practices, and stakeholder engagement efforts. Organizations are increasingly adopting circular economy principles to minimize waste, promote resource efficiency, and create closed-loop systems that regenerate value throughout the supply chain. Focus is also on scrutinizing supplier practices, ensuring fair labor conditions, and addressing human rights issues to uphold ethical standards and build trust with stakeholders. Challenges are overcome by innovative approaches and technologies including block chain for supply chain transparency, predictive analytics for risk management, and digital platforms for collaboration and communication. By embracing these trends, organizations can build resilient, responsible, and future-ready supply chains that create value for society, the environment, and the economy. This study provides a foundation for further research and exploration into the dynamic landscape of sustainable supply chain management, highlighting opportunities for innovation, collaboration, and continuous improvement in pursuit of a more sustainable future.

## Key words:

Sustainable supply chain management, Sustainable Transportation, Carbon Footprint Reduction, Renewable Energy,

## Introduction:

Sustainable supply chain management (SSCM) refers to the integration of environmentally and socially responsible practices throughout the entire supply chain, from the sourcing of raw materials to the final delivery of products or services to customers. The aim of sustainable supply chain management is to reduce the deleterious environmental and social impacts associated with the production and distribution of goods and services while exploiting cost-effective efficiency and long‑term viability. Sustainable supply chain management involves implementing various methods and practices aimed at minimizing environmental impact, promoting social responsibility, and ensuring economic viability throughout the supply chain. Ethical sourcing practices are gaining prominence as consumers demand greater transparency and accountability in supply chains. Climate change mitigation has become a pressing concern, leading to initiatives such as carbon footprint reduction, renewable energy adoption, and supply chain decarburization. Companies are investing in sustainable transportation, energy-efficient operations, and renewable energy sources to mitigate their environmental impact and achieve carbon neutrality goals.

## Review of Literature

Supply chain management (SCM) has become a worldwide hot spot in the research and practical application of enterprise management since the 1990s. Stevens [1] proposed that the supply chain was a connected series of activities concerned with planning, coordinating, and controlling material, parts, and finished goods from the supplier to customer. Lee and Belington [2] defined the supply chain as a network tool for enterprises to obtain raw materials to produce semi-finished or final products and deliver them to consumers through sales channels. They also believed that a supply chain was a network of facilities and distribution options that performed the functions of procurement of materials, transformation of these materials into intermediate and finished products, and distribution of these finished products to customers [3]. The concept of supply chain management first appeared in the 1980s, and a large number of articles emerged in the early 1990s. The Supply Chain Council of America defined the SCM as " an encompassing every effort involved in producing and delivering a final product, from the supplier's supplier to the customer's customer". Coppicing [4] argued that SCM is the art of managing the flow of materials and products from source to user. Evas et al. [5] regarded SCM as a management model that connected suppliers, manufacturers, distributors, retailers, and end-users through feed-forward information flow, feedback material flow, and information flow. Balmier [6] considered SCM as a new management strategy that integrates different enterprises to increase the efficiency of the entire supply chain and pays attention to cooperation between enterprises, which differed from supplier management. Meltzer et al. *Supply chain management* (SCM), defined as the "integration of business processes from end users through original suppliers that provides products, services, and information that add value for customers" [7] Originally, SCM was perceived as a process-oriented and customer-focused business discipline in which material flows are directed

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ISBN : 978-93-340-1483-9
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from upstream suppliers to downstream customers. More recently, the concepts of reverse logistics and closed-loop SCM have complemented the traditional perception of a "forward SC" through product-recycling aspects and the recovery of scarce materials [8,9].The recent studies have focused on this sustainable supply chain management with the support of various sources.

Key principles and practices of sustainable supply chain management include:

**Ethical Sourcing:** Ensuring that raw materials and components are sourced from suppliers who witness to ethical labor practices, fair wages, and human rights principles.

**Environmental Responsibility:** Minimizing the environmental footprint of supply chain operations by reducing energy consumption, waste generation, greenhouse gas emissions, and pollution. This may involve using renewable energy sources, optimizing transportation routes to reduce fuel consumption, and implementing sustainable packaging solutions.

**Supplier Collaboration and Engagement: Collaborating** closely with suppliers to promote sustainability initiatives, share best practices, and address sustainability challenges collectively. This may involve providing training and support to suppliers to help them improve their sustainability performance

**Transparency and Traceability: Providing** transparency and traceability throughout the supply chain to enable stakeholders to track the origin of materials, verify sustainability claims, and ensure compliance with environmental and social standards.

**Integration of Circular Economy Principles:** Embracing the ideologies of a globular frugality through manipulative yields aimed at durability, reprocess, remanufacturing, and repurposing of materials throughout the supply chain. This comprises curtailing discarded and maximizing the recycle of materials throughout the product lifecycle and closed-loop recycling systems.

**Risk Management:** Identifying and mitigating risks associated with environmental, social, and regulatory factors that could impact the supply chain, such as climate change, labor disputes, or regulatory changes.

**Digitalization and Technology Integration:** Digital technologies such as block chain, Internet of Things (IoT), and artificial intelligence (AI) are being leveraged to enhance transparency, traceability, and efficiency in sustainable supply chains. These technologies enable better monitoring of environmental and social metrics, as well as real-time tracking of products from source to end-consumer.

**Supplier Diversity and Resilience:** Companies are diversifying their supplier base to reduce risks associated with reliance on a single source and to promote inclusivity and resilience in their supply chains. This includes sourcing from small and minority-owned businesses, as well as exploring local sourcing options to reduce transportation emissions and dependencies on distant suppliers.

**Green Packaging Solutions:** Adopting eco-friendly packaging alternatives such as biodegradable materials, reusable containers, and minimalistic packaging designs to reduce waste generation and minimize environmental impact. Integrating lean manufacturing principles with sustainability objectives to reduce waste, minimize resource consumption, and improve efficiency. Lean and green practices focus on optimizing processes to eliminate non-value-added activities while reducing environmental impact.

**Continuous Improvement:** Continuously monitoring and measuring the environmental and social performance of the supply chain, setting targets for improvement, and implementing initiatives to achieve those targets by encouraging innovation and creativity to develop sustainable solutions and practices.

**Carbon Neutrality and Emissions Reduction:** There is a rising emphasis on achieving carbon neutrality and reducing greenhouse gas emissions across the entire supply chain. Companies are setting ambitious targets to reduce carbon emissions, investing in renewable energy sources, and collaborating with suppliers to implement energy-efficient practices and technologies.

**Ethical Labor Practices and Human Rights:** Ensuring that raw materials and components are sourced from suppliers who adhere to ethical labor practices, fair wages, and human rights standards. Companies are implementing measures to prevent labor exploitation, child labor, and unsafe working conditions in their operations and those of their suppliers.

**Regulatory Compliance and Reporting:** Regulatory requirements related to environmental, social, and governance (ESG) factors are becoming more stringent, prompting companies to improve their sustainability performance and reporting practices as well as adhering to industry-specific sustainability certifications and guidelines. This includes complying with regulations related to carbon emissions, waste management, and supply chain transparency.

**Research findings on Sustainable Supply Chain Management**

Research findings on Sustainable Supply Chain Management (SSCM) cover a wide range of topics, including environmental impact reduction, social responsibility, economic performance, and best practices. Here are some key research findings from various studies in the field:

**Environmental Impact Reduction:** Companies implementing SSCM practices observe significant reductions in environmental impact, particularly through measures such as optimizing transportation routes, reducing emissions, and implementing eco-friendly packaging.

**Life Cycle Assessment (LCA):** Conducting a life cycle assessment supportsfirmsto value the ecologicalinfluencesallied with a product or service

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ISBN : 978-93-340-1483-9
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throughout its entire life cycle, from raw material extraction to discarding. This evidence can notify decision-making and recognize prospects for development.

**Social Responsibility:** SSCM emphasizes fair labor practices, worker safety, and community engagement. Companies with socially responsible supply chains exhibit improved employee morale, lower turnover rates, and enhanced brand reputation. Active engagement with supplier's aids to improve social responsibility practices correlates with improved overall performance and financial results.

**Economic Performance:** Contrary to the misconception that sustainability initiatives increase costs, SSCM often leads to cost savings and improved financial performance over the long term. Companies adopting sustainable practices experience operational efficiencies and cost savings through measures such as waste reduction, energy efficiency improvements, and lean manufacturing.

**Regulatory Compliance and Standards:** Adherence to regulatory requirements and sustainability standards is crucial in supply chain management to mitigate legal risks, reputational damage, and supply chain disruptions.

## Recommendations:

**Enhanced Collaboration:** Encourage deeper collaboration with suppliers and stakeholders with transparency, traceability and continuous improvement to foster innovation and address sustainability challenges collectively.

**Employee Training and Awareness:** Provide training and raise awareness among employees about the importance and benefits of SSCM to foster a culture of sustainability within the organization**.**

**Integration of Circular Economy Principles**: Explore opportunities to integrate circular economy principles into supply chain operations, such as product redesign for longevity, reuse, and remanufacturing.

**Continuous Improvement**: Emphasize the importance of continuous improvement in SSCM practices by setting targets, measuring performance, and implementing initiatives to achieve sustainability goals.

## Conclusion:

In conclusion, contemporary trends in SSCM underscore the importance of holistic, collaborative, and innovative approaches to address sustainability challenges effectively. The verdicts underscore the significant benefits of Sustainable Supply Chain Management (SSCM) in reducing environmental impact, enhancing social responsibility, and improving economic performance. By adopting best practices, such as collaboration with suppliers, transparency, and continuous improvement, companies can achieve long-term sustainability goals while creating value for stakeholders. Moving forward, investing in technology, employee training, and integration of circular economy principles will be critical for advancing SSCM practices and addressing sustainability challenges in supply chains. By adopting sustainable supply chain management practices, companies can not only reduce their environmental and social impacts but furthermore enhance their reputation, mitigate risks, and create long-term value for stakeholders. Additionally, consumers are increasingly demanding sustainable products, which can provide companies with a competitive advantage in the marketplace.

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IC- TSI 2024
ISBN : 978-93-340-1483-9
29th February 2024

# Revolutionizing Commerce: Blockchain's Impact on Supply Chains and Transactions

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**Abstract**

**Blockchain technology has become a disruptive force in commerce, providing creative answers to a range of problems that companies encounter. This study examines the various uses of blockchain in business, emphasizing how it affects data security, supply chain management, transaction efficiency, and identity verification. Blockchain automates and enforces business agreements through smart contracts, cutting out the need for middlemen and simplifying procedures. Furthermore, blockchain transforms payment methods and permits international trade by providing safe and affordable peer-to-peer transactions. Because the technology creates unchangeable records of product authenticity and provenance, it also improves confidence and transparency in supply networks. Moreover, identity verification solutions based on blockchain enhance regulatory compliance and fight fraud. With its decentralized architecture, blockchain ensures data security and privacy, empowering businesses to safeguard sensitive information. Additionally, the tokenization of assets opens up new opportunities for fractional ownership and liquidity in traditionally illiquid markets. Overall, blockchain holds immense potential to reshape commerce by increasing efficiency, reducing costs, and fostering trust in commercial transactions.**

**Keywords: Blockchain, Data Security, Verification system, supply chain management.**

## Introduction

In recent years, blockchain technology has emerged as a transformative force in commerce, offering innovative solutions to longstanding challenges in transactional processes. Originally developed as the underlying technology for cryptocurrencies like Bitcoin, blockchain has since evolved into a versatile tool with diverse applications across various industries, including commerce.Blockchain, at its core, is a decentralized and immutable ledger that records transactions across a network of computers in a secure and transparent manner. Each transaction, or "block," is cryptographically linked to the previous one, forming a chain of blocks that cannot be altered retroactively. This inherent security and transparency make blockchain an ideal platform for commerce, where trust and integrity are paramount.

In this paper, we will explore the application of blockchain technology in commerce, examining its potential to revolutionize traditional business processes, enhance efficiency, and foster innovation. From supply chain management to payment systems and beyond, blockchain is poised to reshape the way commerce is conducted, offering benefits such as increased transparency, reduced costs, and enhanced security.Through real-world examples and case studies, we will delve into the practical implementations of blockchain in commerce, highlighting the opportunities and challenges associated with its adoption. Whether it's streamlining supply chains, enabling peer-to-peer transactions, or protecting intellectual property rights, blockchain has the potential to unlock new possibilities and drive significant value for businesses and consumers alike.

As we navigate the rapidly evolving landscape of commerce in the digital age, understanding the role of blockchain technology is essential for staying ahead of the curve. By harnessing the power of blockchain, businesses can position themselves for success in an increasingly interconnected and data-driven world, where innovation and efficiency are the keys to sustainable growth.

### History of block chain application in commerce

The history of blockchain application in commerce traces back to the advent of Bitcoin, the first and most well-known cryptocurrency, which was introduced in 2009 by an anonymous person or group using the pseudonym Satoshi Nakamoto. Bitcoin's underlying technology, blockchain, served as the foundation for a decentralized digital currency system that enabled peer-to-peer transactions without the need for intermediaries like banks.Early adopters quickly recognized the potential of blockchain beyond cryptocurrencies and began exploring its applications in various industries, including commerce. Here's a brief overview of the history of blockchain application in commerce:

1. **Early Exploration (2009-2013)**: In the early years following Bitcoin's launch, there was limited awareness and understanding of blockchain technology outside of cryptocurrency circles. However, some forward-thinking individuals and organizations began experimenting with blockchain for applications beyond digital currencies.
2. **Rise of Altcoins and Initial Coin Offerings (ICOs) (2013-2017)**: As Bitcoin gained traction, alternative cryptocurrencies (altcoins) emerged, each with its own unique features and use cases. Alongside the rise of altcoins, the concept of Initial Coin Offerings (ICOs) gained popularity as a means for blockchain projects to raise funds

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ISBN : 978-93-340-1483-9
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by issuing digital tokens. These developments expanded the scope of blockchain beyond Bitcoin and laid the groundwork for broader adoption in commerce.

3. **Enterprise Adoption and Proof of Concept (2014-2017)**: During this period, large enterprises and financial institutions began exploring blockchain technology for applications such as supply chain management, trade finance, and identity verification. Companies like IBM, Walmart, and Maersk conducted proof-of-concept trials to assess the feasibility of using blockchain to improve business processes and streamline operations.
4. **Mainstream Recognition and Pilots (2017-2019)**: Blockchain gained mainstream recognition as governments, corporations, and industry consortia launched pilot projects and initiatives to explore its potential in commerce. Examples include the formation of consortia like the Enterprise Ethereum Alliance and the development of blockchain-based supply chain solutions by companies like IBM and Walmart.
5. **Maturation and Expansion (2020-present)**: In recent years, blockchain technology has continued to mature, with increased standardization, scalability, and interoperability. More businesses have started integrating blockchain into their operations, leveraging its benefits for supply chain transparency, digital payments, smart contracts, and decentralized finance (DeFi) applications.

. Throughout its history, blockchain application in commerce has evolved from a niche technology primarily associated with cryptocurrencies to a mainstream tool with diverse applications across various industries. As businesses continue to explore and adopt blockchain solutions, the potential for innovation and disruption in commerce remains significant.

**Growth of blockchain application in India**

In recent years, India has seen significant growth in the adoption and application of blockchain technology in commerce across various sectors. Some key factors driving this growth include:

1. **Government Initiatives**: The Indian government has shown interest in blockchain technology, exploring its potential applications in areas such as supply chain management, land records, healthcare, and financial services. Initiatives like the National Blockchain Strategy aim to leverage blockchain for economic growth and innovation.
2. **Startup Ecosystem**: India has a vibrant startup ecosystem with numerous blockchain startups emerging in recent years. These startups are working on solutions ranging from supply chain transparency and digital identity to decentralized finance (DeFi) and blockchain-based payments.
3. **Financial Services**: Blockchain is being adopted by financial institutions in India for various use cases, including cross-border payments, trade finance, remittances, and digital asset management. The Reserve Bank of India (RBI) has also explored the use of blockchain technology for regulatory purposes.
4. **Supply Chain Management**: The traceability and transparency offered by blockchain technology are particularly beneficial for supply chain management. Indian companies are exploring blockchain solutions to track the provenance of goods, reduce counterfeiting, and improve efficiency in logistics.
5. **Digital Identity**: India's unique identification system, Aadhaar, provides a solid foundation for blockchain-based digital identity solutions. Blockchain can enhance the security and privacy of digital identities, facilitating smoother authentication and authorization processes.
6. **E-commerce and Retail:** Blockchain is being used in Indian e-commerce and retail sectors to enhance customer trust, streamline payments, and improve supply chain efficiency. Companies are exploring blockchain-based loyalty programs, product authentication, and decentralized marketplaces.
7. **Regulatory Clarity**: While regulatory clarity remains a challenge in India, there have been positive developments in recent years. The Supreme Court's ruling in 2020, overturning the banking ban on cryptocurrency trading, provided some regulatory clarity and boosted confidence in the blockchain ecosystem.
8. **Awareness and Education**: Increased awareness about blockchain technology and its potential benefits has led to greater adoption across various industries in India. Educational initiatives, workshops, and industry conferences have played a significant role in disseminating knowledge and fostering innovation in the blockchain space.

**Blockchain Application in Commerce**

Blockchain technology has numerous applications in commerce, revolutionizing the way transactions are conducted, verified, and recorded. Some key applications include:

1. **Supply Chain Management:** Blockchain enables transparent and traceable supply chains by recording each transaction or movement of goods on a decentralized ledger. This enhances visibility, reduces fraud, and ensures the authenticity and integrity of products.
2. **Smart Contracts:** Smart contracts are self-executing contracts with the terms of the agreement directly written into code. Blockchain facilitates the deployment of smart contracts, automating contract execution, reducing reliance on intermediaries, and minimizing disputes.
3. **Payment and Settlement**: Blockchain-based payment systems, such as cryptocurrencies, offer faster, cheaper, and more secure transactions compared to traditional payment methods. These systems eliminate the need for intermediaries like banks, reducing transaction fees and settlement times.
4. **Cross-Border Trade**: Blockchain simplifies cross-border trade by providing a decentralized

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ISBN : 978-93-340-1483-9
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platform for secure and transparent transactions between parties in different countries. It reduces the complexity and costs associated with international trade finance and documentation.

5. **Digital Identity**: Blockchain enables individuals to control and manage their digital identities securely. By storing identity information on a decentralized ledger, users can verify their identity without relying on centralized authorities, enhancing privacy and security.
6. **Intellectual Property** Protection: Blockchain can be used to timestamp and record intellectual property rights, such as patents, copyrights, and trademarks. This provides immutable proof of ownership and helps prevent unauthorized use or infringement of intellectual property.
7. **Decentralized Marketplaces**: Blockchain facilitates the development of decentralized marketplaces where buyers and sellers can transact directly without intermediaries. These platforms offer increased efficiency, lower fees, and greater transparency compared to traditional centralized marketplaces.

**Disadvantages And Challenges:**

1. **Scalability**: Blockchain networks can struggle with scalability, especially public blockchains like Bitcoin and Ethereum, which have limited transaction throughput. As more transactions are added to the network, processing times can increase, leading to delays and higher fees.
2. **Energy Consumption**: Proof-of-Work (PoW) consensus mechanisms, used by some blockchains like Bitcoin, require significant computational power, leading to high energy consumption. This can be environmentally unsustainable and costly, particularly as the network grows.
3. **Regulatory Uncertainty:** Regulatory frameworks around blockchain and cryptocurrencies are still evolving, leading to uncertainty for businesses operating in this space. Compliance with existing regulations, such as Know Your Customer (KYC) and Anti-Money Laundering (AML) requirements, can be challenging.
4. **Security Concerns**: While blockchain is touted for its security features, no system is entirely immune to vulnerabilities. Smart contract bugs, 51% attacks, and hacking incidents have occurred on various blockchain platforms, leading to financial losses and reputational damage.
5. **Lack of Interoperability**: Different blockchain networks often operate in isolation, leading to a lack of interoperability between systems. This can hinder the seamless transfer of assets and data across platforms, limiting the potential benefits of blockchain technology.
6. **Legal and Governance Issues:** Smart contracts, while offering automation and efficiency, can also raise legal and governance challenges. Disputes arising from the execution of smart contracts, ambiguity in contract terms, and challenges in enforcing contracts in a decentralized environment are concerns.
7. **User Experience Complexity**: Interacting with blockchain applications can be complex for the average user, requiring an understanding of private keys, wallet management, gas fees, and other technical concepts. This complexity can hinder adoption and usability.
8. **Data Privacy**: While blockchain provides transparency and immutability, it also raises concerns about data privacy. Storing sensitive or personally identifiable information on a public blockchain can expose it to unauthorized access, leading to privacy breaches.

## Conclusion

In conclusion, blockchain technology presents a myriad of opportunities and challenges in commerce. Its decentralized, transparent, and secure nature offers numerous advantages, including improved supply chain management, streamlined payments, enhanced digital identity solutions, and increased trust in transactions. These benefits have led to significant adoption and innovation across various sectors, including financial services, supply chain management, e-commerce, and retail.However, blockchain implementation also comes with its share of challenges, such as scalability issues, regulatory uncertainty, security concerns, and user experience complexity. Addressing these challenges will be crucial for realizing the full potential of blockchain technology in commerce.Despite these obstacles, the continued growth of blockchain applications in commerce is driven by government initiatives, a thriving startup ecosystem, increasing industry collaboration, and growing awareness and education about blockchain technology. With ongoing research, innovation, and regulatory developments, blockchain is poised to revolutionize commerce, enabling more efficient, transparent, and secure transactions in the years to come.

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ISBN : 978-93-340-1483-9
29th February 2024

# GREEN INVESTMENT IN THE DIGITAL AGE

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**Abstract**
Green investments refer to financial products or portfolio allocations that aim to support or invest in environmentally friendly practices. This includes investing in companies that focus on renewable energy, green infrastructure, resource conservation, and sustainable agricultural practices. Green investments can encompass various types of securities, such as stocks, bonds, mutual funds, and exchange-traded funds (ETFs). Additionally, there may also be green-themed index funds and exchange-traded funds (ETFs). Investing in green investments is gaining popularity due to the increasing demand for environmentally responsible investments.
**Keywords**:Sustainability,Environmental,Renewable energy, impact investing

## Introduction

Green investments refer to investments in companies or projects that focus on environmentally friendly practices and technologies. This includes renewable energy, clean energy, sustainable agriculture, and other eco-friendly initiatives. Green investments have become more popular in recent years as investors increasingly seek to support environmentally conscious companies and reduce their carbon footprint. Some of the key benefits of investing in green technologies include reduced environmental impact, improved public health, and potential savings on energy costs. It's important to note that green investments may also carry higher risks and potential losses, as these projects can be more volatile and uncertain than traditional investments.

### Meaning of Green Investments

Green investments are financial instruments that are designed to support environmentally sustainable projects or companies. These can include investments in renewable energy, sustainable agriculture, green infrastructure, and other eco-friendly initiatives. Green investments are usually labeled with terms such as "green bonds," "green mutual funds," or "green stocks," and they are increasingly popular among investors who want to align their money with their values. However, it's important to note that while these investments do aim to contribute to positive environmental outcomes, there is always the possibility that they may not generate the same financial returns as other investments.

Investments that are good for the environment can also be profitable. As the globe adapts to climate change, older technologies like fossil fuels and polluting sectors are likely to face increased costs and regulatory hurdles, creating a market opportunity for alternatives. In an effort to generate substantial returns in the future, a lot of mutual funds and index funds look for these alternative investments.

### Types of Green Investments

**Green Stocks**

One approach to start with green investing is to purchase stocks of businesses that have made environmental commitments. In the green industries, many companies and startups are working on producing alternative materials and energies, the shares of which investors can purchase and sell. Some investors think that businesses that prioritise environmental challenges have a higher chance of long-term sustainability and profitability.

**Green bonds**

For investors who are interested in fixed-income securities, the bonds of companies that practise green and ecologically friendly business methods can be an excellent choice. Companies offer green and climate bonds to fund a range of initiatives and commercial ventures.

**Green mutual funds and exchange-traded funds**

When it comes to investing, investors who prefer not to choose individual stocks may always turn to exchange-traded funds and mutual funds that offer exposure to green assets and businesses. An increasing number of index funds are investing in a portfolio of sustainable bonds and stocks. By investing in a single security through these funds, investors can diversify their holdings.

**Renewable energy**:Invest in renewable energy projects such as hydroelectric, geothermal, solar, wind, or biomass energy. The development, building, or maintenance of infrastructure for renewable energy, such as solar farms, wind turbines, or hydroelectric plants, may be financed by these investments.

**Energy Efficiency Solutions**: Encourage the implementation of energy-saving practices and technology, such as smart thermostats, LED lighting upgrades, building retrofits, and optimised industrial processes. Energy efficiency projects with guaranteed energy savings are frequently offered by energy service companies (ESCOs).

**Impact investing**: Invest directly in businesses, startups, or initiatives that place a high priority on environmental sustainability in addition to financial gain. Impact investing supports programmes including clean energy, sustainable agriculture, conservation, and community development intending to achieve quantifiable good social and environmental effects.

**Sustainable real estate**: Invest in environmentally conscious real estate investment trusts (REITs), green buildings, or sustainable developments. In order to minimise their impact on the environment and operational expenses, green buildings integrate sustainable materials, renewable energy sources, and energy-efficient design.

**Invest in carbon offsetting project**: such as methane capture, afforestation, reforestation, forest conservation, renewable energy, and carbon capture and storage (CCS) programmes, to help reduce or offset greenhouse gas emissions. The goal of carbon offset programmes is to

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ISBN : 978-93-340-1483-9
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offset emissions by avoiding or eliminating a comparable quantity of greenhouse gases from the environment.

**Clean Technology Ventures**: Assist in emerging and established businesses creating cutting-edge clean technologies, including energy storage systems, electric cars, water purification systems, sustainable materials, and circular economy projects.

**Green Infrastructure Investments**: Invest in green infrastructure initiatives, such as resilient urban infrastructure, renewable energy infrastructure, water and wastewater treatment facilities, public transit networks, and green buildings.

**Community investing**: Investing in community development projects or community development finance institutions (CDFIs) that support social justice, economic empowerment, and environmental sustainability in marginalised areas is known as community investing.

**Advantages of Green Investment:**

**Potential for Financial Returns:**

Financial returns from green investments can be very appealing; they frequently match or even exceed those from regular investments. Energy efficiency programmes, sustainable businesses, and renewable energy projects can provide investors with consistent revenue streams and long-term growth prospects.

**Risk Mitigation:**

Investing in ecologically sustainable projects and businesses can help reduce a number of risks, such as reputational risks resulting from unsustainable practices, operational risks related to resource scarcity or environmental degradation, and regulatory risks related to climate change regulations.

**Diversification:**

By exposing investors to sectors and industries that have less correlation with traditional asset classes, green investments contribute to diversification. This diversification can increase resistance to market swings and lower total portfolio risk.

**Long-term Value Creation:**

By encouraging sustainable corporate practices, lessening their influence on the environment, and tackling societal issues like resource depletion and climate change, green investments help to create long-term value. Businesses that prioritise sustainability are frequently in a better position to adjust to shifting consumer demands and legal constraints.

**Brand and Reputation Enhancement:**

Companies, asset managers, and investors can all benefit from investing in green projects by improving their reputation and brand image. A dedication to environmental sustainability can draw in stakeholders, employees, and socially concerned customers, increasing trust and loyalty.

**Access to Growth Markets**

Exposure to quickly expanding markets and businesses including renewable energy, clean technology, sustainable agriculture, and green infrastructure is offered via green investments. These industries have a lot of room to grow as environmental sustainability becomes more and more important to businesses, consumers, and governments.

**Regulatory and Policy Support:**

Government incentives, supportive regulatory frameworks, and policies that encourage environmental sustainability and combat climate change all benefit green investments. Green initiatives benefit from favourable market conditions and investment opportunities brought about by these policies.

**Positive Environmental Impact**

Most notably, green investments support sustainable growth, lower greenhouse gas emissions, preserve natural resources, and safeguard ecosystems in order to improve environmental outcomes. Investors have a critical role to play in tackling urgent environmental issues and creating a more sustainable future by providing funding for projects that have a positive environmental impact.

**Disadvantages of green investments**

**Volatility and Market Risks**

Compared to more established businesses, green investments, especially those in developing fields like clean technology and renewable energy, may be more volatile and exposed to market hazards. Policy changes, technology developments, and changes in commodity pricing are a few examples of the variables that might affect how well green investments work.

**Policy and Regulatory Uncertainty:**

Government policies, rules, and incentives geared at advancing environmental sustainability and halting climate change have an impact on green investments. Uncertainty and a shift in political agendas or government policies can have an impact on the financial success of green ventures.

**Technological Risks**

Technical risks associated with investments in clean technology and renewable energy projects include the potential for performance constraints, unexpected technical difficulties, or technological obsolescence. Technology is developing quickly, which has the potential to upend current company models and change the competitive environment.

**Project Development and Execution Risks**

Permitting requirements, difficult project execution, and complicated project development processes are common in green investments in infrastructure projects, renewable energy advancements, and sustainability programmes. Project schedules and financial returns may be impacted by delays, cost overruns, and regulatory obstacles.

**Market Liquidity and Accessibility**

When compared to standard investment options, some green investment opportunities—like impact funds, green bonds, or specialised sustainability-focused businesses—may have less market liquidity or accessibility. Purchasing or selling assets at targeted prices or volumes may become difficult as a result.

**Higher Initial Costs**

Although green investments have longer-term advantages, compared to traditional options, they could need larger upfront fees or early capital expenditures. For instance, the initial expenditures of renewable energy projects are frequently greater even though they incur lower running costs over time.

**Reliance on Government Support:**

For green investments to continue being profitable and competitive, governments must provide incentives, subsidies, and policy support. Government support cuts or modifications may hurt the viability and appeal of green initiatives.

**Limited Track Record and Performance Data:**

Certain green investment options may have limited track records or previous performance statistics, especially if they are in developing industries or cutting-edge technologies. Investors may find it difficult to evaluate

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ISBN : 978-93-340-1483-9
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the risk-return profile and make wise investment decisions due to this lack of data.

**Perception of Trade-offs:**

When making green investments, there may occasionally be perceived trade-offs between financial gains and environmental effect. Maintaining a balance between financial goals and social and environmental concerns can be difficult for investors, particularly if they place a higher priority on immediate profits than long-term sustainability.

**Conclusion:**

In summary, the union of digital innovation and green investment portends a bright future for sustainable finance. Investors can take advantage of numerous chances to assist environmentally conscious efforts by integrating cutting-edge technology like blockchain, IoT, and AI. In addition to providing the possibility of considerable financial returns, this synergy also makes significant environmental benefits—such as resource conservation and a decrease in carbon emissions—possible. Even in the face of ongoing obstacles like market and regulatory unpredictability, green investment has the unquestionable ability to revolutionise the digital age. Investors' collective actions have the potential to design a future that is resilient and prosperous for future generations, as they prioritise sustainability alongside profits.

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IC-TSI 2024
ISBN : 978-93-340-1483-9
29th February 2024

# User preference analysis between Ayurvedic and Allopathic drugs in Coimbatore

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**Abstract**

**The study investigates the preferences of users towards Ayurvedic and Allopathy drugs in Coimbatore, India, aiming to understand the factors influencing their choice between traditional Ayurvedic medicine and modern Allopathy. The research employs a mixed-methods approach, including surveys and interviews, to gather comprehensive data on user preferences, attitudes and experiences with both forms of medication. Though a sample population in Coimbatore, comprising individuals from various demographics and medical backgrounds, the study examines factors such as speed in relief, cultural beliefs, perceived side effects and experience and convenience associated with Ayurvedic and Allopathy drugs. Quantitative analysis involves statistical methods to identify trends and patterns in user preferences, while qualitative analysis delves into the underlying reasons and beliefs shaping these preferences. The findings shed light on the nuanced interplay between traditional and modern medicine in Coimbatore, revealing diverse perspectives and considerations that influence individuals' choices. The study contributes to the existing literature on medical pluralism by providing insights into how users navigate between Ayurvedic and Allopathy treatments, offering implications for healthcare practitioners, policymakers, and stakeholders in promoting holistic healthcare delivery that aligns with user preference and needs.**

**Keywords: Ayurvedic, Allopathy, traditional medicine, modern medicine**

## Introduction

The coexistence of traditional Ayurvedic medicine and modern Allopathy in India's healthcare landscape reflects a complex interplay between cultural heritage, scientific advancements, and individual preferences. Coimbatore, a city known for its rich cultural heritage and burgeoning healthcare sector provides an intriguing setting to explore the dynamics of user preference between these two medical systems

Ayurveda, rooted in ancient Indian texts and holistic principles, emphasizes natural remedies and personalized treatments tailored to individual constitutions. On the other hand, Allopathy, characterized by evidence-based practices and pharmaceutical interventions, dominates mainstream healthcare globally.

The study aims to delve into intricacies of user preference for Ayurvedic and Allopathy drugs in Coimbatore, examining the underlying reasons, perceptions, and experiences that influence their decisions. By employing a mixed-methods approach encompassing surveys and interviews, this research seeks to provide comprehensive insights into the factors driving user preferences in this diverse healthcare ecosystem.

The juxtaposition of Ayurvedic and Allopathy medicine in Coimbatore, India, reflects a historical tapestry woven with cultural heritage, colonial influences, and contemporary healthcare practices. Coimbatore, nestled in the heart of Tamil Nadu, has been a melting pot of traditional healing practices and modern medical advancements, making it an intriguing locale to examine the evolution of user preferences between these two diverse medical systems.

Ayurveda, one of the world's oldest holistic healing systems, traces its origin back thousands of years to the Indian subcontinent. Rooted in ancient texts such as the Charaka Samhita and Sushruta Samhita, Ayurveda emphasizes a holistic approach to health, focusing on balancing the body's energies (doshas) through natural remedies, lifestyle modifications, and personalized treatments based on individual constitutions (prakriti).

The advent of colonialism in India brought about significant shifts in healthcare practices, with the introduction of modern Western medicine, commonly known as Allopathy. Coimbatore, a prominent centre of British colonial administration and industrialization in South India, witnessed the establishment of allopathic medical institutions and pharmaceutical industries during the British Raj.

Over the decades, Coimbatore's healthcare landscape has evolved, with Ayurvedic and Allopathy systems coexisting alongside each other. While allopathy gained prominence as the primary mode of healthcare delivery in urban centres, Ayurveda persisted as a traditional healing system deeply rooted in the region's

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ISBN : 978-93-340-1483-9
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cultural fabric, particularly in rural areas and among certain communities.

The historical trajectory of healthcare in Coimbatore, characterized by a blend of traditional wisdom and modern medical practices, sets the stage for examining user preferences between Ayurvedic and Allopathy drugs. Understanding the historical context is essential for unravelling the socio-cultural, economic, and institutional factors that have shaped individuals' choices and perceptions regarding these two medical paradigms in Coimbatore.

**Statement of the Problem**

The study addresses the nuanced and dynamic landscape of healthcare preferences among residents of Coimbatore, focusing specifically on their choices between Ayurvedic and allopathic drugs. It aims to unravel the underlying factors shaping these preferences, delving into demographic, cultural, and socio-economic influences. By examining user perceptions of effectiveness, side effects, and experience, the research seeks to elucidate the drivers behind the adoption or rejection of traditional Ayurvedic remedies versus modern allopathic medications. Furthermore, the study endeavours to identify any existing barriers or challenges hindering the widespread acceptance of Ayurveda in a predominantly allopathic healthcare system.

**Objective of the study**

The objective is to study the assess treatment experience and side effects in Ayurvedic drug**.**

**Literature review**

Research by Patwardhan and Mashelkar (2009) explored the influence of cultural beliefs and traditional practices on user preferences for Ayurvedic and Allopathic drugs in India. The study found that individuals often choose Ayurvedic remedies based on cultural heritage, family traditions, and the perceived alignment with holistic health principles. Conversely, Allopathic drugs are favored for their perceived scientific validity and rapid symptom relief.

In a cross-sectional study by Gupta et al. (2017), patients with chronic illnesses were interviewed to explore their satisfaction with Ayurvedic and Allopathic treatments. The findings revealed that while some participants reported positive experiences with Ayurvedic drugs, citing improvements in overall well-being and fewer side effects, others expressed concerns about the lack of standardized dosages and inconsistent treatment outcomes compared to Allopathic drugs.

A survey conducted by Singh et al. (2018) assessed user preferences among rural populations in India, taking into account factors such as accessibility and affordability of Ayurvedic and Allopathic drugs. The results indicated that while Ayurvedic treatments were more accessible in rural areas and perceived as cost-effective by some participants, others preferred Allopathic drugs due to the availability of healthcare facilities and government subsidies.

A study conducted by Sharma et al. (2019) surveyed patients in India to assess their preferences between Ayurvedic and Allopathic drugs for the management of chronic conditions. The findings revealed that while Ayurvedic drugs were perceived as safer and more natural by some participants, others expressed greater confidence in the efficacy of Allopathic drugs, particularly for acute conditions or emergencies.

An analysis by Choudhury et al. (2020) investigated the role of information sources and decision-making processes in shaping user preferences for Ayurvedic and Allopathic drugs in urban communities in India. The study found that while traditional knowledge passed down through family and community networks influenced preferences for Ayurvedic remedies, information from healthcare professionals and mass media played a significant role in promoting trust and confidence in Allopathic drugs.

**Methodology**

Researchers employed a mixed-methods approach, combining quantitative surveys and qualitative interviews to gather comprehensive data. Surveys were distributed among a diverse sample population, capturing demographic information and preferences related to drug efficacy, side effects, cost, accessibility, and cultural beliefs.

Additionally, in-depth interviews are conducted with select participants to explore nuanced perspectives.

**Findings**

The study aimed to analyze user preferences between ayurvedic and allopathic drugs, specifically focusing on the treatment experience and side effects associated with Ayurvedic drugs. Through a comprehensive analysis, several key findings emerged.

Firstly, participants reported varying treatment experiences with Ayurvedic drugs compared to allopathic drugs. While some users expressed satification with the holistic approach of Ayurveda, emphasizing its focus on natural remedies and personalized treatments plans, others highlighted challenges such as longer treatment duration and slower symptom relief compared to allopathic drugs.

Secondly, the study revealed insights into the side effects experienced by users of Ayurvedic drugs. Although Ayurveda is often perceived as having fewer side effects due to its natural ingredients, participants reported instances of adverse reactions such as allergic reactions, gastrointestinal discomfort, and interactions with other medications. These findings underscore the importance of thorough assessment and monitoring of side effects in Ayurvedic drug usage.

Furthermore, the study identified factors influencing user preferences between Ayurvedic and allopathic drugs. Personal beliefs, cultural background, previous treatment experiences, and the nature of the health condition played significant roles in shaping individuals' preferences. Additionally, accessibility, cost, and availability of information also influenced decision-making regarding treatment options.

Overall, the findings of this study provide valuable insights into user preferences and experiences concerning Ayurvedic and allopathic drugs. Understanding these factors is crucial for healthcare providers and policymakers to ensure informed decision-making and promote safe and effective healthcare practices. Further research in this area could contribute to enhancing patient-centered care and optimizing treatment outcomes.

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ISBN : 978-93-340-1483-9
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**Conclusion**

In conclusion, the analysis of user preferences between Ayurvedic and allopathic drugs reveals a complex interplay of factors. Both systems of medicine have their own unique advantages and drawbacks, and individuals may choose one over the other based on a variety of reasons including cultural beliefs, personal experiences, efficacy, availability, and convenience.

For some users, Ayurvedic medicine represents a holistic approach that aligns with their beliefs in natural remedies and emphasizes the importance of balance and harmony in the body. They may prefer Ayurvedic treatments for chronic conditions or preventive care, valuing the personalized approach and emphasis on lifestyle factors such as diet and exercise.

On the other hand, allopathic medicine is often perceived as more scientifically rigorous and evidence-based, with a focus on diagnosing and treating specific symptoms or diseases using pharmaceutical drugs and surgical interventions. Users may prefer allopathy for acute conditions or emergencies where quick and targeted interventions are necessary.

Furthermore, socioeconomic factors such as access to healthcare services, insurance coverage, and affordability can also influence user preferences. In some regions, Ayurvedic medicine may be more accessible and affordable, especially in rural areas or developing countries where traditional healing practices are deeply ingrained in the culture.

Ultimately, the choice between Ayurvedic and allopathic medicine is a deeply personal one, and individuals may benefit from integrating aspects of both systems depending on their unique needs and preferences of their patients, and to provide informed guidance that takes into account the benefits and limitations of both approaches. By fostering an open dialogue and mutual respect between practitioners of different medical system, we can work towards a more inclusive and holistic approach to healthcare that prioritizes the well being of individuals and communities.

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ISBN : 978-93-340-1483-9
29TH February 2024

# PROBLEMS FACED BY TRADERS TOWARDS E-COMMERCE IN COIMBATORE DISTRICT SOUTH-ZONE

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**ABSTRACT**

**Today we all are meet with online and eat with the help of online. At the pitch of online trading is very close and friendly manner to the entire mobile and internet users' even students and new-born babies. Now days E-commerce is one of the most favour ways to make purchases, but it's not give comfort zone for all buyers and sellers. E-commerce is becoming more common every day, and spans every type of product and every type of shopper. Traders are all ages, come from all types of backgrounds, and both men and women. Consider the advantages and disadvantages carefully so the researcher can make an informed decision about what's best for trader. In this paper an attempt is made to know the products sold by consumers from their stores by online and to identify the types of problems faced by traders while selling goods by e-commerce. This study is based on primary data and data were obtained through interview schedule. The sampling technique was adopted for collecting primary data from traders. In this paper the suggestions also given to overcome the problems faced by traders on e-commerce**.

**Key words: e-commerce, traders, internet and online.**

## INTRODUCTION

Today's world ruled by internet and technology. The growing usage of internet provides a developing prospect for E-commerce. Internet is key way of customers to buy the goods and services and sellers to sell their goods and services has rapidly involved into a global phenomenon. With the peak level usage of internet, e-commerce has become popular amongst people of different age groups. Entrepreneurs and new start-up business choose e-commerce as it is more convenient and faster than traditional and offline trading. E-commerce is becoming a well-accepted to sell a wide range of products and service.

Customer's attitude towards e-commerce refers to their psychological state in terms of making purchases over the internet. Online trading behaviour process refers to the products sale and trading through online. The process of e-commerce behaviour consists of more steps and it is similar to traditional shopping. Other side customer recognize the need for buying some product, they refers to the internet to buy online and start to search for the information and look for all the alternatives and finally make a purchase which best fits to their needs. The main theme of the study is to analyse the problems faced by sellers and traders towards e-commerce.

## STATEMENT OF THE PROBLEM

Traders are slow in showing interest in e-commerce. However, the future for e-commerce looks secure and promising. The problem area of this study is trader's attitudes, problems towards e-commerce will determine the factors that influence seller to trade online, and those factors will help the marketers to formulate their strategies towards e-commerce.

## SCOPE OF THE STUDY

This study mainly focus on primary data, which data collected from the e-commerce traders in south-zone of Coimbatore District only. The study covers opinion of trader about e-commerce and problems faced by the traders related to e-commerce.

## OBJECTIVES

This study covers the following objectives:

- To know the socio economic status of the online trader.
- To ensure the problems faced by the traders related to e-commerce.
- To offer suitable suggestion based on our findings.

## METHODOLOGY

The study targets a sample population drawn from traders who have experienced e-commerce in south-zone of Coimbatore District only. Descriptive research studies are those, which are concerned with describing the characteristics of a particular individual or group. The research design used for the study is descriptive.

## SAMPLE SIZE and SAMPLING DESIGN

The sample size used for study is 59.These samples are taken from south-zone of Coimbatore District for this study. It is a definite plan for obtaining a sample from a given population. The respondents are selected based on convenient sampling.

## LIMITATIONS OF THE STUDY

- The study covered south-zone of Coimbatore District only.
- The study based upon the traders attitude and problems of e-commerce.
- The data collected for the research is fully on primary data given by the traders so the accuracy is not exact.

## SOCIO ECONOMIC STATUS OF THE RESPONDENTS

Socio economic condition of the respondents is an important aspect in determining the trading and the satisfaction. Table 1 explains the details regarding socio economic classification of the respondents.

**TABLE 1**

**Socio Economic Status of the Respondents**

| *Classification* | *No. of Respondents* | *Percentage to Total* |
|---|---|---|
| ***Sex*** | | |
| Male | 35 | 57.45 |
| Female | 24 | 42.55 |
| Total | 59 | 100 |
| ***Age*** | | |
| Up to 35years | 15 | 25.53 |
| 35-50 years | 39 | 65.96 |
| Above 50 years | 5 | 8.51 |
| Total | 59 | 100 |
| ***Qualification*** | | |
| Up to HSC | 7 | 10.64 |
| Graduate | 32 | 53.19 |
| Diploma/Technical | 7 | 10.64 |
| Professional | 15 | 25.53 |
| Courses | | |
| Total | 59 | 100 |
| ***Marital Status*** | | |
| Unmarried | 20 | 34.04 |
| Married | 39 | 65.96 |
| Total | 59 | 100 |
| ***Monthly Income*** | | |
| Below Rs.25000 | 23 | 38.30 |
| Rs.25000- | 25 | 42.55 |
| Rs.50000 | 12 | 19.15 |
| Above Rs.50000 | | |
| Total | 59 | 100 |
| ***Domicile*** | | |
| Rural | 35 | |
| Urban | 24 | 59.57 |
| | | 40.43 |
| Total | 59 | 100 |

Source: Primary data

It is clear from the Table 1 that among the 59 respondents, 57.45 percent respondents are male traders and remaining 42.55 respondents a majority of the traders are m

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ISBN : 978-93-340-1483-9
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25.53 percent of the respondents belong to age group of up to 25 years,65.96 per cent of the respondents belong to the group 25-50 years, 8.51 percent of the respondents belong to the age group above 50 years. A majority of respondents surveyed are in the age group of 25-50 years.

Among the 59 respondents, 10.64 percent of the respondents are Up to SSLC, 53.19 percent of them are at Graduate, 10.64 per cent of them are at Diploma/Technical, 25.53 per cent of them are at Professional.

Out of 59 respondents, 34.04 per cent of the respondents are unmarried and 65.96 per cent of the respondents are married. The majority of the respondents are married.

Among the 59 respondents, 38.30 per cent of the respondents come under the income range of below Rs.25000, 42.55 percent of them earn Rs.25000-Rs.50000 and 19.15 percent of them come Above Rs.50000 as their monthly income. The majority of the respondents are under the income range of Rs.25000-Rs.50000.

Among the 59 respondents, 59.57 per cent of the respondents are rural and 40.43 percent of the respondents are urban. The majority of the respondents are living in rural area.

**YEAR OF EXPERIENCE TOWARDS E-COMMERCE**

Table 2 presents the details of the year of experience trading e-commerce.

**TABLE 2**

| S. No | Years | No. of Respondents | Percentage to Total |
|---|---|---|---|
| 1. | Up to 1 year | 48 | 40.43 |
| 2. | 2-3 year | 50 | 42.55 |
| 3. | More than 3 year | 20 | 17.02 |
| | **Total** | **59** | **100.00** |

Source: Primary Data.

Source: Primary Data.

It is clear from the Table 2 that among the 59 respondents, 40.43 percent respondents are up to 1year, 42.55 percent respondents are under the years of 2-3 years and 17.02 percent respondents are under the category of more than 3 year.

The majority of the respondents are trading on e-commerce 2-3 years.

**RANKING: CATEGORY OF GOODS SELLING THROUGH ONLINE**

The table 3 shows the rank of trading products of e-commerce in south-zone of Coimbatore District. The top 5 products was selected for the purpose of the study. The rank of products based on the respondent's opinion.

The table 3 shows the rank of trading products of e- 2. Th

| S. No. | Products | Total Rank | Mean Rank | Standard Deviation | Variance | Rank |
|---|---|---|---|---|---|---|
| 1. | Clothes | 263 | 2.23 | 1.15 | 1.31 | II |
| 2. | Food items | 258 | 2.19 | 1.30 | 1.68 | I |
| 3. | Mobile and Mobile Accessories | 370 | 3.15 | 1.30 | 1.69 | III |
| 4. | Fashion accessories | 430 | 3.66 | 1.20 | 1.45 | IV |
| 5. | Cosmetics care product | 443 | 3.77 | 1.32 | 1.75 | V |

**TABLE 3**

**Rank of Trading Products**

The table 3 analyzes the rank of trading products by opinion of the respondents. The food items got first rank and clothes got second rank for the e-commerce. The last rank goes to cosmetics care products by the respondents.

**FINDINGS AND SUGGESTIONS**

The following are the findings suggestions based on the study:

The majority of the traders are faced the problem of amount paid by another account through e-commerce. Therefore, online shoppers need more attentions about the payment and give a proper proof to the traders.

2. The customers cancel the order before the product reached at destination. So please be wait to get a product safely and properly.
3. Proper awareness must needed to all persons of different traders.
4. Online traders must ensure about the quality and right of the information to their customers.
5. Since transaction is online, the customers should be ensure of web security and confidential card information.
6. The e-commerce should be successful only by customer give some times to deliver the products and making payments without unsecured mind.

**3.2. CONCLUSION**

This research has shown an interest in investigating traders' attitude towards e-commerce. E-commerce is gaining popularity among people specially the younger generation but in today scenario to become equally popular among all age groups e commerce will have to cover a longer distance. The study has revealed that most of the traders have favourable attitude towards e commerce and majority of the traders suffer due to unnecessary cancellation. Therefore, we should take care to improve our environment to avoid problems.

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Technology and Sustainable Innovation IC- TSI 2024

www.sankara.ac.in ISBN: 978-93-340-1483-9

29th February 2024

# E-COMMERCE AND IT'S IMPACT ON ENVIRONMENT

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**ABSTRACT:**

**The "internet" has changed the theory of the business world. Significant technical advancements have historically had far-reaching, positive or negative effects on the environment, in addition to bringing about fundamental changes to the economic system. The concept of online buying in India started in the year 2000 when websites like E bay and Rediff shopping were some of the first few sites to offer products at low cost. Since then, numerous brands such as Flipkart, Amazon, Myntra, etc started to showcase a strong existence in the online market. E-commerce is the process of buying and selling products through electronic means such as using mobile applications and the Internet. E-commerce implies trading of goods online as well as electronic transactions. The overall of online shopping is far from furnished, but it has undoubtedly accelerated in the last few decades. E-commerce makes the buying process quicker, easier and more flexible, with more advantages to overcome geographical barriers and allowing them to purchase products anytime and from .E-commerce has a major impact on the markets & retail industry in numerous ways. E-commerce will exclude the mediation process and enables producers to sell directly to consumers. It will also help small and medium-sized business to achieve greater market reach for their products and services. Micheal Aldrich was an inventor and entrepreneur with whom online shopping came into existence.**

**Keywords: E-commerce, online, electronic transaction, shopping, impact.**

INTRODUCTION:

According to two recent national studies published by the Commerce Department, e-commerce is quickly becoming the engine of economic growth in the new millennium. This growth of e-commerce may accelerate in the upcoming years, not only in the field of information technology (IT), but also in all industries, as the number of people connected to the Internet increases and its commercial use increases. E-commerce is the buying and selling of goods through online platforms such as the Internet. Electronic commerce uses technologies such as online transaction processing, electronic data interchange (EDI), supply chain management, Internet marketing, mobile commerce, electronic money transfer , inventory management systems, and automated data collection systems. Modern electronic commerce may also use other technologies, such as e-mail, but typically uses the Web for at least one aspect of the transaction life cycle. Examples of common e-commerce transactions include the purchase of books (such as from Amazon sites) and music (such as from iTunes Store sites), as well as custom or personalized liquor store online inventory services. E-commerce has three areas: e-commerce, e-markets and online auctions. E-commerce is supported by e-businesses. There is increasing evidence that companies are moving their supply networks and sales channels online and participating in new online markets. Companies are also expanding the use of online systems to improve internal business processes, such as coordinating product planning, managing inventory, improving customer service, and reducing administrative and management costs. More and more B2B transactions are also conducted electronically on the Internet. Andy Grove of Intel even made the following prediction: &quot ;In five years, all companies will either be Internet companies or they won't be companies at all. Business-to-consumer (B2C) transactions may also explode in the coming years. We may be witnessing the birth of frictionless capitalism, where business can be done at the speed of thought, as Bill Gates predicted.

THE ENVIRONMENT AND E-COMMERCE:

People can purchase and sell goods worldwide online around the clock without having to pay the overhead associated with operating a physical store. E-commerce needs to be physically present in order to attain the optimal marketing mix and conversion rates. It's more commonly referred to as the brick and mortar store. There are many different forms of e-commerce, even if business-to-consumer (B2C) e-commerce is the one that most people think of. These include business-to-business (B2B) transactions, online banking, online tickets and booking, and online auction sites. More lately, sales made using mobile devices have also grown in popularity. These transactions are referred to as & quot;m- commerce " and are really as upset of e-commerce. Online shopping is becoming more

gets more and more integrated into our daily lives. Many customers were hesitant to give their credit card information to an internet business in the early 2000s. Transactions involving online buying are now incidental. Consumer confidence in online buying has increased as a result of the usage of encryption, SSL certificates, and trustworthy third-party payment processors like Worldpay, Pay pal, and Skrill.

Our ecological imprints on the environment are mostly the result of economic activity mediated by human technology. The transition of human society from hunting and gathering to agriculture over the previous 8,000 years has resulted in significant changes to the Earth's surface and rapid degradation of our delicate environment. This has been particularly true since the late 1700s, when the industrial age began. Actually, the speed and force of technological progress may have suddenly increased, which could be the cause of today's environmental issues. The era of knowledge has arrived. Many academics and business executives contend that the advancement of knowledge-based industries and the uptake of cutting-edge technology, particularly Internet information technologies, are prerequisites for sustainability. Nevertheless, a more thorough examination of how the Internet affects the environment soon shows that these possible advantages are only one side of the story. It is premature to draw optimistic conclusions about how the developing digital economy will affect the environment, despite the fact that the Internet has the capacity to conserve resources and energy. Yes, the Internet has already significantly increased mass production on a global scale. People purchase more when they just point and click. A survey conducted in Germany found that consumers of 4,444 online booksellers spend, on average, almost twice as much as those of brick-and-mortar bookstores. Dematerialization, or the substitution of electrons for atoms, results in material savings, although large consumption and population growth in developing nations may counteract these benefits.

**STUDY OBJECTIVES:**

The main study objectives are

1) highlights of electronic commerce;

2) to briefly examine the impact of "electronic commerce" on "marketplaces" and "environment".

**RESEARCH METHODOLOGY:**

This study is based on secondary data only. This secondary information is collected from various related websites, well-known journals, magazines, periodicals and newspapers.

**MARKET:**

A market is defined as the sum of all buyers and sellers in that area or region. A region can be the globe or countries, regions, states or cities. The value, cost and price of goods sold depends on the forces of supply and demand in the market. A market can be a physical or virtual entity. It can be local or global, perfective and imperfective.

**RETAILING:**

Retailing is the process of selling goods and services directly to consumers. This is done through multiple sales channels to make a profit. In other words, "retailing" is selling consumer goods or services to customers through multiple distribution channels for a profit.

**E-TAILING:**

E-retailing, also known as e-tail, Internet retailing or online retailing, refers to electronic retailing. In online shopping, a business or individual sells retail products and services through online stores. An e-commerce business can be a purely digital presence, meaning that the customer does not have a physical store.

**E-C OMMERCE BUSINESS MODELS:**

Electronic commerce or e-commerce is a business model that allows companies and consumers to buy or sell online. E-commerce has six business models:

- Business-to-Consumer (B2C)
- Business-to-Business (B2B)
- Business-to-Government (B2G)
- Business-to-Business-to-Consumer (B2B2C)
- Consumer-to-Consumer (C2C)
- Consumer-to-Business (C2B)

Let's take a closer look at each of these six business classifiers. We'll also learn about five key delivery models you should consider when opening or expanding your online store.

**Business-to-Consumer (B2C):**

As the name suggests, business to consumer (B2C) means that a company markets its products or services directly to end users through online. This is the most famous form of business. You are making a B2C transaction every time you buy food at the grocery store, eat dinner at a restaurant, watch a movie at the theater, or get a haircut. You are the end user of the products and services sold by these companies.

Examples:

- Netflix
- Bank of America
- H&M

**Business-to-Business (B2B):**

Business to business (B2B) refers to the practice of a corporation selling its goods or services directly to other businesses, as the name suggests. There are two approaches to B2B e-Commerce: vertical and horizontal. Companies that are vertically focused target customers within a specific industry. Every approach has advantages and disadvantages, such as vertical market depth and industry knowledge vs horizontal market coverage and diversity. Both can be profitable avenues, but you should carefully analyze them as your strategy will depend on your customers and items.

Examples:

- Salesforce
- McKesson
- DocuSign

**Business-to-Government (B2G):**

Business to Government (B2G) means that a company markets its products and services directly to a government agency online. This agency can be a local, county, state or federal agency.

Examples:

- Construction of buildings, highways and infrastructure.

**Business-to-Business-to-Consumer (B2B2C):**

In B2B2C online shopping, one company sells products, services or goods to another company. The receiving company then sells to the consumer. An example of a B2B2C arrangement is when a wholesaler sells goods to retailers, who then sell the goods to consumers. In the B2B2C model, there are three actors: the first company (the company of origin of the product), the intermediary and the final user or consumer.

Examples:

- Swiggy
- Ola
- Uber
- Zomato

**Consumer-to-Consumer (C2C):**

In C2C online shopping, consumers sell goods or services directly to other consumers. This is largely enabled by third-party websites or marketplaces that facilitate transactions on behalf of buyers and sellers.

Examples:

- Craigslist
- eBay
- Etsy

**Consumer-to-Business (C2B):**

In the C2B e-commerce business model, individuals sell goods and services directly to businesses. A common example is websites that allow individuals, such as entrepreneurs or freelancers, to share jobs or services in which they have experience. Often, companies will request or offer that person's time and pay the person through that platform.

Examples:

- Upwork
- Shutterstock
- Instagram influencers

**IMPACT OF E-COMMERCE ON ENVIRONMENT:**

- **WASTE GENERATION**

The Internet is likely to play an increasingly important role in both production and consumption. In fact, the Internet is becoming the largest advertising machine for goods and services that target every imaginable human want and need. Continuous production and consumption always requires more material and energy use, which often turns into environmental pollution. E-commerce has changed the way we shop, making it easy to buy everything from the comfort of your own home. With the rise of online business, the amount of packaging waste generated has also increased significantly. Every online purchase comes packaged, whether it's a cardboard box, a plastic envelope or a padded envelope. According to a report by the World Economic Forum, there are 165 billion pieces of e-commerce packaging every year and this number is expected to continue to grow. Many different types of waste are generated in online stores.

**Examples:**

**Packaging waste:**

This is one of the most important types of waste generated in electronic stores. Products are frequently packaged in cardboard boxes, bubble wrap, and layers of plastic, all of which might be challenging to recycle.

**Electronic waste:**

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The increase in electronic commerce has also led to an increase in the amount of electronic waste. As more and more people buy electronics online, the disposal of old electronic devices is becoming a bigger problem.

**Emission of carbon dioxide:**

Transportation of goods from warehouses to consumers causes significant emissions of carbon dioxide. This might make air pollution and climate change worse.

**Single-use products:**

Online shopping can also promote the use of single-use products, such as packaging materials and shopping bags, which can end up in landfills or oceans.

**Returns and Disposal:**

The ease of online shopping has also led to an increase in returns, which can lead to additional waste in packaging, transport and disposal of unwanted goods. Due to its ease and convenience, online shopping has grown in popularity in recent years. But the packaging that these things are shipped in frequently goes unnoticed and can have a big effect on the environment. Online stores use many types of packaging materials, such as cardboard boxes, plastic bags, bubble wrap and airbags. According to a report by ocean conservation organization Oceana, Amazon generated 465 million pounds of plastic packaging waste in 2019 alone. This waste includes airbags, bubble wrap and other plastic packaging added to the approximately 7 billion packages delivered by Amazon in 2019. Packaging waste generated in online stores has a significant impact on the environment. Plastic packaging waste in particular is a big problem because it takes hundreds of years to decompose and often pollutes the oceans and harms marine life.

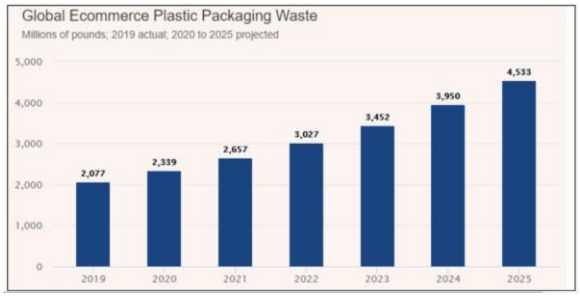


Figure 1

**NON RECYCLING AND NON REUSING OF WASTE**

Reusing or recycling packaging materials whenever it is feasible is an additional choice. Many companies now offer their own packaging recycling programs, such as TerraCycle's Zero Waste Box program. In short, although online shopping has its advantages, it also has a significant impact on the environment through the packaging waste generated. It is important for both consumers and companies to take responsibility and act to reduce this waste and find sustainable packaging solutions. This is how we can help protect our planet and ensure a better future for future generations. The use of plastic in packaging is a major environmental problem. In addition to plastic, e-commerce packaging also often uses other packaging materials, such as cardboard, paper and Styrofoam. Although these materials are biodegradable and recyclable, they still increase the amount of waste generated.

Consumers can also participate in reducing the environmental impact of e-commerce. They can shop from companies that favor sustainable packaging and shipping practices. They can also reduce their carbon footprint by combining orders to reduce the number of shipments and choosing environmentally friendly shipping options.

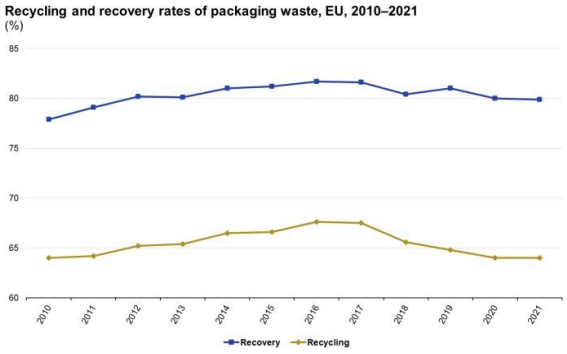


Figure 2

Source: Eurostat

**CONCLUSION:**

In short, e-commerce is simply the process of buying and selling products through electronic means such as mobile applications and the Internet. Online shopping refers to both electronic purchases and electronic transactions. The popularity of online shopping has grown tremendously in recent decades and has somewhat replaced traditional stores. E-commerce thus affects the market and the retail industry in many different ways. E-commerce eliminates the intermediary process because producers can sell directly to consumers. One of the biggest advantages of online shopping is the competitive spirit of entrepreneurs, which leads to innovation. The explosive growth of e-commerce has brought with it new ideas to streamline transactions or make supply chain processes easier and more efficient. It also helps small and medium-sized companies to gain wider market access for their products and services. To combat the

problems of this industry, some companies have taken steps towards more sustainable packaging. For example, Amazon introduced "Frustration-Free Packaging", which aims to reduce waste and be easier to open. Other companies use biodegradable materials in their packaging or encourage customers to reuse or recycle packaging. In short, it can be stated that although shopping in an electronic store can be convenient, it is important to be aware of the environmental impact of online store packaging. By taking steps towards more sustainable packaging and making informed choices as consumers, we can work towards a more sustainable future for our planet. The convenience of online shopping should not come at the expense of our environment.

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IC-TSI 2024
ISBN: 978-93-340-1483-9
29th February 2024

# Evaluating Guyana's Anti-Money Laundering Framework: Enhancing Transparency, Accountability, and Integrity in Public Procurement Practices.

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***Abstract*— This research was inspired by the pursuit to strengthen the existing legal frameworks and find new inventive ways of combating public procurement corruption in Guyana by leveraging on Guyana's existing Anti-Money laundering laws (AML) and enforcement mechanisms. The effectiveness of anti-money laundering (AML) frameworks is crucial in combating corruption, fostering transparency, accountability, and integrity in public procurement practices. This article critically assesses the anti-money laundering framework in Guyana, examining its impact on enhancing transparency, accountability, and integrity in public procurement. It is paramount to underscore that public procurement in Guyana and globally plays a significant role in the economic development of any country, and so using all available enforcement tools to reduce corruption in public procurement is essential to the welfare of any country; thus, the importance of this research. Drawing upon existing literature, this study identifies strengths and weaknesses within Guyana's AML framework and proposes recommendations for improvement.**

**Key Words:** Guyana, Anti-Money Laundering (AML), Transparency, Accountability, Integrity, Public procurement, Effectiveness, Corruption, Legislative framework, Regulatory bodies, Financial Intelligence Unit (FIU), Legal framework, Regulatory oversight, Law enforcement, Procurement practices, Anti-corruption measures, Policy evaluation

## I. Introduction

Money laundering poses a significant threat to the global financial system, undermining economic stability and fueling corruption. Guyana, like many developing countries, faces challenges in combating money laundering and ensuring integrity in public procurement processes. Over the years, Guyana has enacted a robust wide range of AML laws to combat money laundering, including measures aimed at the financing of terrorism, the forfeiture and seizure of proceeds of crimes, and the prevention of corruption, among other measures. Although Guyana has a wide range of laws and enforcement mechanisms in anti-money laundering, Guyana has not used them to its full advantage. Some weaknesses include poor enforcement of criminal measures, institutions prone to political interference, a lack of political will, and non- development of administrative measures including, for example, poor enforcement of collateral measures such as debarment in procurement, and a lack of a coordinating AML policy to leverage the government's many resources against corruption in procurement. The research will conclude that Anti-Money laundering legal framework has not been used effectively to curb the public procurement corruption which is a deep challenge in Guyana. With robust laws available, Guyana needs to implement fully administrative measures such as debarment, and to put in place policies to strengthen joint coordination and operation amongst government institutions and collective action among stakeholders.

In addition, the country needs a clear voice at the top, a strengthened anti-corruption culture, and a policy of allowing autonomous bodies to remain autonomous not just on paper. Furthermore, the research proposes new ways of doing things to include a corruption and anti-money laundering clearance certificate and an obligatory anti-corruption and anti-money laundering clause in all government contracts, to promote self-cleansing corporate compliance, and a mechanism to ensure that foreign debarred entities are red flagged as corruption risks in Guyana's procurement system.

Hence, the importance of this article aims to evaluate the effectiveness of Guyana's anti-money laundering framework in fostering transparency, accountability, and integrity in public procurement practices..

## II. Literature Review

. *A. Money Laundering and Corruption*

Money laundering and corruption are two interconnected phenomena that pose significant challenges to governance, economic stability, and societal well-being. Money laundering involves the process of concealing the origins of illegally obtained money, typically by passing it through a complex sequence of banking transfers or commercial transactions, thereby making it appear legitimate (FATF, 2019). According to Kaufmann & Vicente (2005), money laundering is intricately linked to corruption, as illicit funds are often laundered through legitimate financial channels. The interplay between money laundering and corruption undermines the rule of law, erodes public trust, and hampers economic development. Transparency International (2021) refer to corruption as the abuse of entrusted power for

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IC-TSI 2024
ISBN: 978-93-340-1483-9
29th February 2024

personal gain, which can manifest in various forms such as bribery, embezzlement, or favoritism.

Therefore, the relationship between money laundering and corruption is symbiotic, with one often facilitating the other. Illicit funds generated through corrupt activities provide the fuel for money laundering schemes, while the laundering of these funds enables corrupt actors to enjoy the proceeds of their illicit activities without detection (UNODC, 2020). This cycle perpetuates a culture of impunity and undermines the rule of law and hindering economic development.

Hence, the efforts to combat money laundering and corruption require a multi-faceted approach encompassing a strong legal, regulatory, and enforcement framework. International bodies such as the Financial Action Task Force (FATF) provide guidelines and standards for anti-money laundering (AML) efforts, while organizations like Transparency International advocate for transparency and accountability in governance to mitigate corruption (OECD, 2018).

Therefore, to address these issues requires coordinated action at the national and international levels, focusing on strengthening legal frameworks, enhancing regulatory oversight, and bolstering enforcement mechanisms..

### *B. Anti-Money Laundering Frameworks – Global and Guyana*

Anti-money laundering (AML) frameworks are pivotal instruments in safeguarding the integrity of the global financial system and countering illicit financial activities. These frameworks vary in complexity and implementation across jurisdictions worldwide but share common objectives of detecting, preventing, and deterring money laundering. Legislative measures form the cornerstone of AML frameworks, criminalizing money laundering activities and providing the legal basis for investigation and prosecution. Regulatory oversight is another essential component, with financial intelligence units (FIUs) and regulatory bodies monitoring compliance with AML regulations and facilitating information exchange between stakeholders. Additionally, robust enforcement mechanisms, involving law enforcement agencies and specialized units, are crucial for investigating and prosecuting money laundering cases effectively. According to Deloitte (2019), effective AML frameworks are essential for detecting, preventing, and deterring money laundering activities. These frameworks typically involve legislation, regulatory bodies, enforcement mechanisms, and international cooperation.

In Guyana, the Anti-Money Laundering and Countering the Financing of Terrorism Act (AML/CFTA) serves as the primary legislative framework for combating money laundering and terrorist financing. Enacted in 2009, this legislation provides the legal basis for identifying, investigating, and prosecuting money laundering offenses within the country. The Financial Intelligence Unit (FIU) of Guyana plays a pivotal role in the AML framework, collecting, analyzing, and disseminating financial intelligence related to money laundering and terrorist financing activities. Furthermore, law enforcement agencies such as the Guyana Police Force and the Special Organized Crime Unit (SOCU) are tasked with investigating and prosecuting money laundering cases, thereby contributing to the effectiveness of Guyana's AML regime.

Efforts to strengthen anti-money laundering frameworks in Guyana are ongoing, with legislative reforms and capacity-building initiatives aimed at enhancing regulatory oversight and enforcement mechanisms. These measures are crucial for addressing emerging threats and vulnerabilities in the financial sector, bolstering the resilience of Guyana's AML framework against evolving money laundering risks. By aligning its AML regime with international standards and best practices, Guyana can enhance its ability to combat money laundering and preserve the integrity of its financial system in the global fight against financial crimes.

### ***C .Public Procurement and Corruption***

Public procurement serves as a crucial mechanism for governments to allocate resources efficiently and effectively for public projects and services. However, globally, public procurement is often plagued by corruption, leading to significant economic losses, diminished public trust, and compromised service delivery. Corruption in public procurement manifests in various forms, including bid rigging, kickbacks, and favoritism, undermining fair competition and distorting market dynamics (World Bank, 2020). This phenomenon is not unique to any specific region but is prevalent across countries with varying levels of economic development. According to the Transparency International (2021), public procurement processes are particularly vulnerable to corruption due to their complexity, large financial flows, and discretionary decision-making. Corruption in public procurement leads to inflated costs, substandard services, and misallocation of resources.

In Guyana, public procurement practices have faced scrutiny due to pervasive allegations of corruption and irregularities. Reports of bid manipulation, bribery, and lack of transparency have raised concerns about the integrity of the procurement process and the equitable distribution of public funds. Such corruption not only leads to financial losses but also erodes public confidence in government institutions and undermines the credibility of the procurement process (Transparency International, 2021). Therefore, to curb corruption in public procurement is essential for fostering economic growth, promoting good governance, and ensuring the efficient delivery of public services in Guyana.

Recently, efforts to combat corruption in public procurement in Guyana involve a multi-faceted approach, including legislative reforms, enhanced oversight mechanisms, and increased transparency measures.

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Legislative measures, such as the enactment of the Public Procurement Commission Act, aim to strengthen procurement regulations and improve accountability in the procurement process (Government of Guyana, 2016). Furthermore, initiatives to enhance transparency, such as the implementation of e-procurement systems and the publication of procurement information, seek to promote fairness and integrity in procurement practices (Guyana Chronicle, 2022). By addressing corruption in public procurement, Guyana can foster a conducive environment for investment, promote sustainable development, and uphold the principles of good governance.

## III . Impact on Public Procurement Practices

### *I. Transparency*

Arrowsmith & Linarelli (2015), states that transparency plays a crucial role in shaping the landscape of public procurement practices by promoting openness, accountability, and fairness. In transparent procurement processes, stakeholders have access to information regarding contract opportunities, bidding procedures, and evaluation criteria, fostering competition and preventing favoritism. Also, transparency facilitates the detection and deterrence of corrupt practices, as increased scrutiny allows for the identification of irregularities and discrepancies in procurement transactions (World Bank, 2020). Moreover, transparency enhances public trust in government institutions, leading to greater citizen satisfaction and confidence in the procurement process.

### *II. Accountability*

According to OECD (2018), accountability is a cornerstone of effective public procurement practices, ensuring that government officials and procurement professionals are held responsible for their actions and decisions. In accountable procurement systems, mechanisms are in place to monitor and evaluate the performance of procurement processes and outcomes, thereby reducing the risk of mismanagement, waste, and corruption. In addition, accountability also encourages transparency by providing avenues for stakeholders to raise concerns, lodge complaints, and seek redress for grievances related to procurement activities (Arrowsmith & Linarelli, 2015). Therefore, by holding individuals and organizations accountable for their conduct, accountability mechanisms promote integrity, ethical behavior, and good governance in public procurement.

### *III. Integrity on Public Procurement Practices*

Integrity is essential for maintaining the credibility and trustworthiness of public procurement practices, ensuring that decisions and actions are guided by ethical principles and moral values. In procurement processes characterized by integrity, officials adhere to codes of conduct, ethical standards, and legal requirements, minimizing the risk of conflicts of interest, bribery, and fraud (Arrowsmith & Linarelli, 2015). Also, integrity promotes professionalism and competence among procurement professionals, fostering a culture of excellence and dedication to public service (OECD, 2018). Thus, by upholding integrity in public procurement practices, governments can enhance efficiency, effectiveness, and public confidence in the procurement process, ultimately contributing to sustainable development and economic growth.

## IV Areas for Improvement in Anti-Money Laundering (AML) in Guyana

### Legislative Reforms

Guyana's AML framework would benefit from comprehensive legislative reforms aimed at addressing existing gaps and weaknesses in the legal framework. Specifically, amendments to the Anti-Money Laundering and Countering the Financing of Terrorism Act (AMLCFTA) should be considered to enhance the effectiveness of money laundering prevention and enforcement measures (Government of Guyana, 2009). Hence, by strengthening penalties for money laundering offenses and expanding the scope of the legislation to cover emerging risks and technologies would contribute to a more robust AML regime in Guyana.

### Capacity Building and Training

Enhancing the capacity and expertise of regulatory bodies such as the Financial Intelligence Unit (FIU) is essential for improving the effectiveness of AML efforts in Guyana. Investing in specialized training programs for FIU staff and law enforcement agencies would enhance their ability to detect, investigate, and prosecute money laundering cases (FIU Guyana, 2024). Additionally, providing resources for the development and implementation of advanced technological tools and data analytics capabilities would strengthen the FIU's ability to identify suspicious financial transactions and networks.

## V .Conclusion

In conclusion, Guyana's anti-money laundering framework plays a vital role in fostering transparency, accountability, and integrity in public procurement practices. However, significant challenges remain, including weak enforcement mechanisms, limited resources, and systemic corruption. To address these challenges, it requires a multifaceted approach, encompassing legislative reforms, capacity building initiatives, and enhanced international cooperation. Thus, by strengthening its AML framework, Guyana can better combat money laundering and corruption, ultimately promoting economic growth and development not only in the public procurement sector but all the sectors

## VI Recommendations

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ISBN: 978-93-340-1483-9
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I. Amending existing legislation to close loopholes and enhance penalties for money laundering offenses is crucial.
II. Enact specific provisions related to public procurement within the AML framework can bolster efforts to combat corruption in this sector.
III. Investing in training programs and capacity building initiatives for regulatory authorities, law enforcement agencies, and procurement officials can improve their ability to detect, investigate, and prosecute money laundering and corruption cases.
IV. Guyana should leverage existing platforms such as the Egmont Group and Interpol to exchange information and coordinate efforts to combat financial crime.

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IC-TSI 2024
ISBN: 978-93-340-1483-9
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# "The influence of Fintech on the efficiency of private and public sector banks in India"

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**ABSTRACT**

**Fintech, the amalgamation of finance and technology, offers an alternative perspective on financial services and banking-related activities. In the realm of finance, FinTech represents a rapidly evolving and enhanced framework. This paper primarily aims to investigate the influence of fintech on the operational efficiency of both private and public sector banks in India. This paper delves into the fintech offerings provided by Indian banks and the evolution of current financial technologies. It also provides an overview of the historical development of Fintech and the significant markets it encompasses, along with their growth trajectories. The burgeoning pace of fintech services is not confined to India alone but extends globally. Anticipated as transformative, these services are poised to reshape the norms and practices within the financial sector in India and beyond.**

**Keywords: Financial Technology, Fintech, Internal Indicators, banks, profitability, Fintech development,**

**Introduction:**

The chance to transform the landscape, offering customers a broader array of financial products at competitive rates, and aiding financial institutions in enhancing their efficiency. The rapid and transformative changes brought about by Fintech necessitate scrutiny and assessment, ensuring regulatory bodies and the general public remain abreast of mainstream technologies and business trends. This paper provides a concise exploration of the sector, delving into its expansion, characteristics, and diverse driving influences within both the Indian and global markets. In order to foster a sustainable entrepreneurial ecosystem, fintech needs to navigate the digital landscape and facilitate equitable and extensive customer involvement. (Source: www.rbi.org.in.)

The inception of the contemporary banking system in India traces its roots to the latter part of the 18th century. Over the course of the struggle for independence from colonial rule, the subsequent nationalization efforts, and the attainment of freedom, fintech technology has undergone significant transformations spanning the past two centuries. In the 21st century, propelled by technological advancements and governmental initiatives such as UPI, coupled with the burgeoning fintech industry, India's banking landscape has emerged as a focal point on the global stage. Notably, a May 2019 report by PwC and ASSOCHAM revealed that India boasts the second-highest fintech adoption rate in the world, standing at an impressive 57.9% (Agarwal, M., and Staff, I, 2019).

**Literature Review:**

Srinivasan. K., and Rajarajeswari. S. (2021) This paper endeavors to engage in discussions surrounding pivotal themes such as the intersection of technology and trade, the limitations of conventional financial services, and the role of labor in technological development. Additionally, the article delves into the intricacies of fintech reserves and explores their consequential implications.

It explores challenges within financial technology, encompassing aspects like investment management, client services, and regulatory frameworks. The thesis examines the evolution of fintech on the global stage during the specified period. (Kandpal, V., and Mehrotra, R., 2019)

The prevalence of cashless transactions is on a continuous rise, aligning with the expansion of the global market and advancements in the banking sector. As the financial landscape evolves, an increasing number of individuals are transitioning from cash to non-cash transactions. The shift towards a cashless system is not just a natural progression but a necessity in the present order. In recent years, endeavors to broaden India's financial reach have resulted in diverse outcomes. Stricter policies and regulations have significantly enhanced access to bank accounts.

Raj, B., and Upadhyay, V. (2020) The term "fintech" originates from the combination of "financial" and "technical." In a broader context, it can be described as the convergence of technology and finance, resulting in innovative solutions that introduce new business models, processes, products, or applications with substantial implications for the administration of financial markets, services, and institutions.

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Vijai, C. (2019) Fintech, an abbreviation for financial technology, encompasses a diverse range of outcomes applicable to both banking and non-banking financial services. Representing a relatively novel concept in the financial industry, this paper aims to delve into the challenges and opportunities within the fintech sector. It elucidates the shifts occurring in the financial technology market and examines the impact of modern financial technologies (fintech) on the Indian financial sector.

M, C. S., & R, K. (2019) The advent of the Internet in the 1990s and 21st century has disrupted or dismantled numerous major industries. Consider industries entirely overhauled by online systems or street fashion stores eclipsed by online retailers. Surprisingly, even the financial sector, which might have seemed impervious to transformation, has proven that assumption wrong. It is undergoing changes at a pace faster than any other business sector today.

Chugh, B. (2020) This article aims to unravel the genesis of Fintech in India. In its exploration, the article begins by examining the prevalent fintech features embraced by consumers in the country. Finetech categorizes 14 types of businesses encountered by consumers in India, mirroring the diversity of fintech enterprises present in the Indian landscape. The subsequent analysis delves into the intricacies of these 14 businesses and their significance in the fintech sector in India.

Pant, S. K. (2021) In simple terms, fintech leverages cutting-edge technology to deliver banking and financial solutions to businesses and individuals alike. This sector stands out as one of the fastest-growing in both developed and developing nations, with India securing a position among the top three fintech startups globally. Fintech companies harness advanced technologies such as big data, cryptocurrency, artificial intelligence, blockchain, machine learning, data analysis, robotics, and cloud computing to develop innovative products. The integration of broadband services by telecommunications providers, both domestically and internationally, has become a crucial infrastructure component facilitating the expansion of fintech. This article explores the dynamic landscape of fintech, shedding light on its technological foundations and India's prominent role in this transformative industry.

Guild, J. (2017) The infusion of new technology into the financial services industry, commonly referred to as Fintech, has garnered substantial investment capital in recent years, amounting to billions of dollars. Noteworthy examples of Fintech innovations include digital money transfer services in India and Kenya, as well as peer-to-peer credit platforms in China. The success of these initiatives, when aligned with supportive government policies and procedures, has enabled the provision of financial assistance to hundreds of millions of customers, establishing a novel foundation for financial management. This article delves into the transformative impact of Fintech innovations, exploring their investment landscape and highlighting key examples that have reshaped financial services on a global scale.

**Objective:**

- To assess the potential impact of Fintech on the profitability of both public sector and private sector banks.

**Scope & Technology:**

The expanding influence of Fintech has compelled banks to undergo operational transformations and confront formidable competition from both financial and non-financial entities providing cost-effective financial services. This necessitates financial institutions to strategically invest in Fintech resources, ensuring the delivery of high-quality services and innovative products aligned with customer-centric missions and visions. This proactive approach not only facilitates the enhancement of business capabilities for emerging startups and banks with fundamental requirements but also mandates the continual renewal and reorganization of each financial entity to effectively meet and contend with evolving market demands.

**Source of Data:**

The data utilized in this study has been acquired from previously collected sources and has undergone rigorous statistical analysis. Various secondary sources, including newspapers, publications, magazines, books, the internet, reports, and journals, were consulted to gather comprehensive information for the research. This approach ensures a diverse and well-informed foundation for the study, drawing insights from a range of reputable outlets and contributing to the depth and reliability of the gathered data.

**Research Hypothesis:**

**(H0):** There is no impact of Fintech on the profitability of the chosen public sector and private sector banks.

**Fintech:**

Fintech, short for Financial Technology, denotes the utilization of technology within the financial sector to enhance and streamline services for its clientele. In simpler terms, Fintech represents the amalgamation of financial and technological expertise, fostering mutual benefits for both domains. Over the years, Fintech has been the driving force behind various technological advancements in the financial market, spanning from ATMs to commodities.

This integration has revolutionized financial transactions, enabling individuals to access cash without a visit to the bank, make purchases without the need for physical currency, or invest in company shares without cumbersome paperwork. Such innovations have facilitated seamless financial interactions, allowing individuals to transact with a simple click on their mobile phones, exemplifying the transformative impact of Fintech on modern finance.

**Segment wise Fintech Industry**

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ISBN: 978-93-340-1483-9
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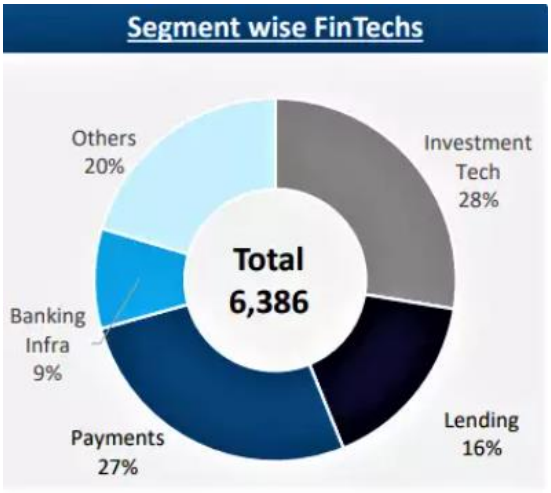



Source: (https://bfsi.economictimes.indiatimes.com/)

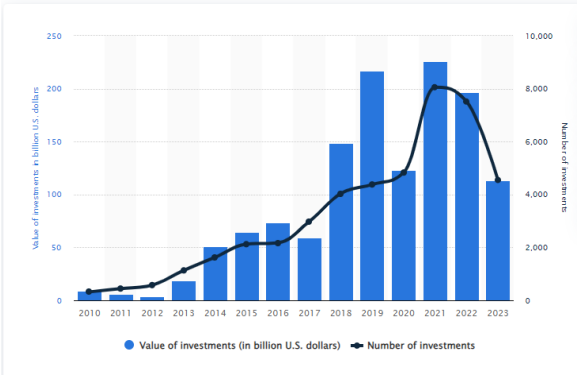
**Global Fintech Market Size:**

The global fintech market achieved an estimated value of $111,240.5 million in 2019, registering a compound annual growth rate (CAGR) of 7.9% from 2015. It is projected to continue its upward trajectory with an anticipated annual growth rate (CAGR) of 9.2%, reaching $158,014.3 million by 2023. Further expansion is expected, with the market reaching $191,840.2 million at a CAGR of 10.2% in 2025 and reaching $325,311.8 million at a CAGR of 11.1% by 2030. This robust growth underscores the dynamic evolution and increasing significance of the global fintech landscape over the coming years.

Historical progress was shaped by the evolution of emerging markets, heightened investment in fintech startups, increased internet accessibility, and growing managed revenues. Factors impeding growth during this period included stringent government regulations and limited interpersonal communication. Looking ahead, the surge in digital payment popularity is anticipated, propelled by investments in blockchain technology improving data management capabilities, substantial e-commerce growth, and the expected post-COVID-19 market stimulation.

While these trends are promising, concerns about consumer data security loom large, posing a potential obstacle to the future growth of the fintech market. Addressing these security challenges will be crucial for the sustained development of the industry.

**Global Fintech Investment**



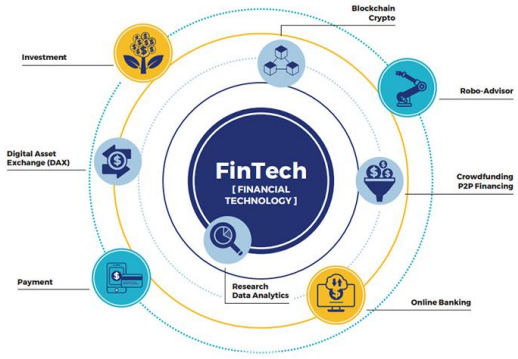

(Source: https://www.statista.com/statistics/719385)

**Fintech Industry in India:**

The Fintech industry is poised for substantial growth, projected to increase from $150 billion to $160 billion by 2025. This surge represents an added value potential of around $100 billion. To achieve this ambition, the Indian fintech sector is anticipated to require an investment ranging between $20 billion to $25 billion over the next five years. The dynamic landscape of the Indian fintech industry boasts over 2,100 players, with a remarkable 67% of them emerging within the last five years. The cumulative value of this sector is estimated to be in the range of $50-60 billion.

Notably, the industry has demonstrated resilience, remaining unaffected by recent epidemics. Instead, it has witnessed the emergence of three new unicorns and five Soon corns (startups with an estimated value of $500 million or more) since January 2020. Prateek Roongta, CEO of Boston Consulting Group India, expressed confidence in the potential of the Indian Fintech sector, stating, "We believe Indian Fintech is positioned at the epicenter, poised to create $100 billion in value over the next five years." This optimistic outlook suggests that the number of Indian Fintech unicorns is expected to more than double in the coming years.

**Structure of Fintech Industry**




(Source: https://www.apu.edu.my/fintech)

**India's Fintech Startup:**

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ISBN: 978-93-340-1483-9
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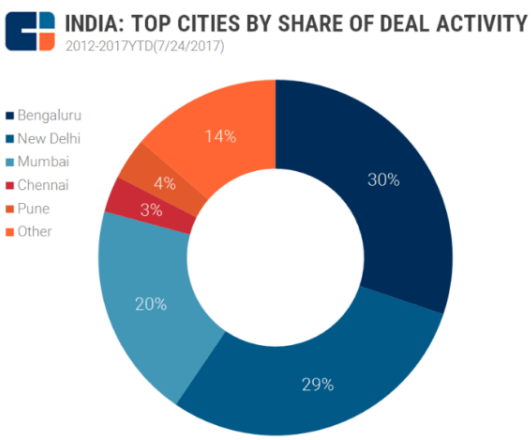
The emergence of fintech startups has brought about profound transformations in our economy, particularly revolutionizing the way we conduct transactions. The payment landscape is undergoing a revolutionary shift, influencing the dynamics of business operations for everyone involved. Numerous fintech companies have garnered attention in the financial industry, introducing exclusive financial solutions as they expand into diverse markets. These companies are not only altering the way we pay but also shaping the future of financial transactions on a global scale. Let's explore some of these trailblazing fintech firms that are making headlines with their innovative contributions to the evolving financial landscape.

As per a study conducted by Medici in July, the landscape of Indian technology startups encompasses various sectors, with 405 companies dedicated to payments, 365 focusing on loans, 313 in wealth technology, 173 in personal finance management, 111 in insurance technology, and 58 in cybersecurity. The geographical concentration of these startups reveals that the majority are situated in Bangalore (447) and Bombay (437), collectively constituting 40.6% of the headquarters of fintech startups across the country. This data highlights the significant presence of fintech innovation in these key Indian cities, showcasing their prominence in fostering technological advancements in diverse financial domains.

**Fintech Hubs top ten cities of India**



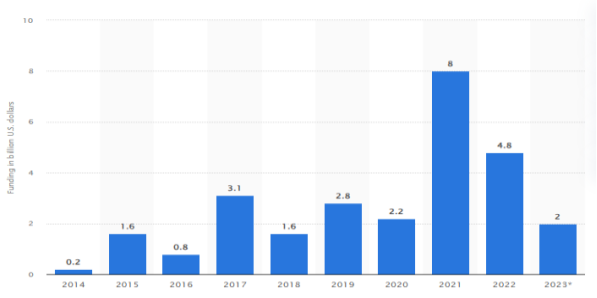

**Active Areas of Fintech Innovation:**

- Exploring the realm of digital currencies and cryptocurrencies.
- Investigating blockchain technology, a decentralized system that maintains records across a computer network without relying on a central ledger.
- Delving into the world of smart contracts, where computer software, frequently leveraging blockchain technology, autonomously executes agreements between buyers and sellers.
- Exploring the concept of Open Banking, a blockchain-driven idea where third parties are granted access to banking information to develop applications fostering a network connecting financial institutions and third-party service providers.
- Delving into Insurtech, a movement dedicated to leveraging technology to simplify and streamline processes within the insurance industry.
- Exploring Regtech, a sector dedicated to assisting financial services companies in adhering to industry compliance regulations, with a particular focus on anti-money laundering and related protocols.
- Delving into the interconnected landscape of cybersecurity, cybercrime, and decentralized storage, where the realms of cybersecurity and financial technology are intricately woven together. Explore how these elements converge and influence each other in the modern digital landscape.

**Collaboration Between Fintech & Banks:**

Exploring the impact of digital technology, big data, and analytics on the financial services industry, a recent report by McKinsey suggests that despite the transformative effects, investors foresee fintech startups becoming increasingly influential. The dawn of fintech players initially posed a challenge to traditional banks, but over time, banks have recognized the value in collaborating with these startups to enhance their existing systems, fostering smoother processes for an enhanced consumer experience. This collaboration has not only made banks more adaptable in their early stages but also led to a convergence of services, facilitated by data analytics, allowing various financial service providers to deliver products and services through an open and interconnected framework. The evolving landscape suggests a future where the synergy between traditional financial institutions and fintech entities plays a pivotal role in shaping the industry.

**Table A: Funding value of fintech startups in India from 2014 to 2023**




(Source: https://www.statista.com/statistics/1373398)

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ISBN: 978-93-340-1483-9
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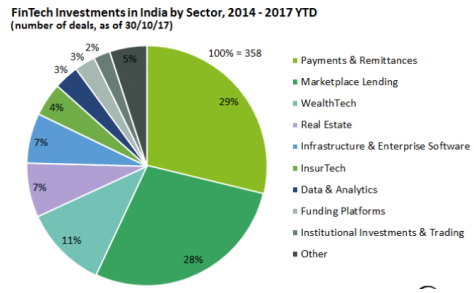
**Sector wise fintech business models in India**




(Source: https://www.researchgate.net/figure/Fintech)

**Optimal Blend of Incentives, Policies, and Regulations:**

- **Reserve Bank of India:**

The Reserve Bank of India (RBI) has actively promoted the adoption of the Unified Payment Interface (UPI) and the Bharat Bill system in the country. Moreover, it has endorsed the utilization of automated algorithms for digital payments, peer-to-peer (P2P) loans, and financial advice. Expanding its support, the RBI has granted licenses to 11 fintech companies to establish payment banks, allowing them to offer a range of services, including savings, deposits, and payment services. This proactive approach by the RBI reflects a commitment to fostering innovation and expanding financial services through strategic partnerships with fintech entities.

- **Government Schemes:**

Government-led initiatives like Jan Dhan Yojana, Digital India Program, and the National Payments Council of India (NPCI) have become crucial platforms for tech innovators. Additional efforts include abolishing e-commerce premiums, offering tax exemptions for electronic payments, and easing validation requirements. These measures reflect the government's commitment to fostering rapid growth in India's fintech ecosystem.

- **Fintech Startup Sector:**

The robust regulatory environment stands as a significant catalyst for the growth of fintech ventures in India. In 2018 alone, more than 125 fintech startups were launched, underscoring the industry's dynamic expansion. Notably, both national and international banks, along with investment groups, are actively investing in and financing fintech solutions within the Indian market, further fueling the sector's momentum.

**Image D: Regulatory Bodies in India**


(Source: https://kuvera.in/blog/financial)

**Impact of Fintech on Banking Sector:**

- **Loans:**

Fintech has revolutionized the banking landscape, creating vast opportunities in the lending market. The adoption of fintech loans has become easily attainable, with innovative models catering to both business and personal needs. These organizations prioritize enhancing customer experience, ensuring efficient cash flow, and expediting loan approval processes.

- **Payment Services:**

Fintech plays a pivotal role in reshaping payment services. Online installment payments, tailored to merchant accounts, web usage, or mobile phone bills, have become prevalent. Direct transfers to cash balances streamline transactions, minimizing discrepancies in exchange rates and mitigating counterfeit risks.

- **Wealth Management:**

With the rise of technology, the way people save money, control resources and contribute capital is evolving. Using new monetary innovations, these organizations intend to provide redesigned mechanisms to combat their own wealth and business. Fintech programmer further helps in contrasting different choice and preparing the best speculative plans for a single budget.

- **Remittance Transfers:**

Remittance transfers have long been characterized by high costs and complexity for individuals and banks. Fintech companies are striving to simplify and make these inbound and outbound transactions more essential and cost-effective over time.

- **Insurance Services:**

Securing insurance has become a more straightforward process in contemporary times. With revamped plans, every aspect can now be handled online, from engaging with programs to handling periodic billing. Technological advancements have significantly transformed and streamlined the entire insurance service landscape.

- **Equity-Funding:**

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ISBN: 978-93-340-1483-9
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Equity funding has been revolutionized by technology, enabling new project enterprises and businesses to raise capital from a large number of people. This crowdfunding approach has transformed the traditional methods of capital acquisition.

**Fintech Challenges:**

- Addressing security concerns and safeguarding data privacy
- Integrating Big Data and Artificial Intelligence effectively
- Implementing blockchain technology seamlessly
- Overcoming the shortage of mobile and technological expertise
- Ensuring compliance with state regulations
- Tackling growth challenges and implementing effective marketing strategies to acquire customers
- Prioritizing customer retention and addressing user experience issues

**Future of Fintech in India:**

The future of fintech in India is promising, with the country emerging as a key player in financial technology development. The ongoing financial innovation is reshaping the landscape for Indian citizens, positioning the nation as a leader in the tech industry. In the era of "Digital India," fintech organizations are poised to discover numerous endorsement opportunities. The government's initiatives, such as the 'Jan Dhan Yojana,' aim to provide every citizen with a bank account, fostering financial inclusion. Additionally, to incentivize electronic payments, merchants are offered various discounts. The digitalization of banks is set to make fintech innovation the future of India's banking and financial sector.

**Conclusion:**

The future of Indian Fintech is expansive, encompassing both vertical and horizontal growth. Promotion aims at increasing accessibility of existing technologies to a wider audience, while rising growth involves introducing new avenues for individuals to trade, donate, allocate funds, and manage their finances. This dual-pronged approach is expected to propel India on a robust financial development journey, unlocking significant advancements in various financial sectors.

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IC-TSI 2024
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www.sankara.ac.in ISBN: 978-93-340-1483-9

29th February 2024

# Navigating Challenges and Seizing Opportunities: A Comprehensive Analysis of Green HRM Implementation in Contemporary Organizations

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**Abstract:**

**Green Human Resource Management (GHRM) presents a dynamic framework for organizations to address environmental concerns while optimizing their human capital. However, the successful integration of Green HRM practices is not devoid of challenges. This study aims to explore the impact of Green HRM in reshaping organizational practices, employee engagement, and overall sustainability performance. By conducting a comprehensive literature review and empirical analysis, this research identifies key dimensions of Green HRM implementation and assesses their influence on organizational success. Findings suggest that embracing Green HRM not only enhances environmental performance but also fosters employee morale, innovation, and organizational resilience. The implications of these findings underscore the imperative for organizations to redefine their HRM strategies in alignment with sustainability goals to thrive in the 21st-century business landscape**

**Key words: Green HRM (GHRM), Challenges, Opportunities, sustainability, organizational Resilience, Human Capital.**

## INTRODUCTION:

Green HRM refers to all the activities concerned in development, execution and on-going maintenance of a system that aims at making employees of an organization green. It is the area of HRM that is concerned with transforming regular employees into green employees so as to achieve environmental goals of the organization and lastly to make a significant contribution to environmental sustainability. It refers to the policies, practices and systems that make employees of the organization green for the benefit of the individual, society, natural environment, and the business. The rationale of green HRM is to create, enhance and retain greening within each employee of the organization so that he or she gives a maximum individual contribution on each of the four roles, i.e., environmentalist, ecologist, non-polluter, and inventor. Green Human Resource Management can be defined as the triggering force of the human resource implementations that improves both economic and environmental sustainability of business resources by undertaking change and developing environmental conditions. In simple usage, Green Human Resources Management (GHRM) means using human resources management policies to promote sustainable use of resources within business organizations and more generally promoting environmental sustainability. Green HRM means bringing economic changes and raising the efficiency both ecological and economic while ensuring that the cost of natural resources exploitation is within the acceptable range in HRM practices. Green human resource management targets human resources to bear an environmental responsibility in their tasks, to turn them into employees who are able to develop positive behaviours with other co-workers, to present new ideas and recommendations, and thus to enable the implementation of environmental programs. The basic target actually is to motivate employees, to turn them into environment-conscious individuals, and toimprove environmental performance of the organizations. The Green Human Resource Management comprises of many functions in the Human Resource Department of an organization. It helps to reduction of paper usage and the implementation of green human resource policies such as planning, recruiting, selecting, managing employees and the employee relations. It makes the environment green in the workplace. All the activities involved in the green human resource management enhance the value of the employees and the organization.

## RESEARCH OBJECTIVES:

1. To analyze various green HRM practices and their impact on sustainability of environment and organization.

To identify the limitations to its successful implementation of green HRM practices for sustainable advantage.

## METHODOLOGY:

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In order to achieve the stated review objective, a systematic review of literature was conducted by using an archival method. This paper employs a methodology to review the articles cited in the databases Sage, Taylor and Francis Online, Springer

link, Science Direct, JSTOR, Wiley Online Library, and Emerald with „green HRM or environmental HRM" as the topic. Hence the study for this paper becomes a desk research rather than a survey or any other mode of researching.

**LITERATURE REVIEW:**

Research paper focused on various sub themes for identifying the relevant literature with reference to the objective of the research paper. The themes covered under the literature are: concepts of Green HR, Challenges & opportunities regarding sustainable development regarding green HRM, impact of Green HRM in reshaping organizational practices, sustainable development & advancement of organization performance through HRM practices.

**Literature on Concepts of Green HRM:**

**What is GREEN HRM (GHRM)?**

The term Green HRM has become the buzz wordwithin the business field at present and its significance is increasing manifold with the passage of time. This term has also its secured position as a hot topic in recent research works since the awareness on environmental management and sustainable development has been increasingly raising day by day all-round the globe. Today the topic Green HRM not only includes awareness toward environmental affairs,but also stands for the social as well as economicwell-being of both the organization and the employees within a broader prospect. Green HRM is the use of HRM policies to promote the sustainable use of resources within organizations and, more generallypromotes the causes of environment sustainability"(Marhatta & Adhikari, 2013). GHRM is directly responsible in creating green workforce that understands, appreciates, and practices green initiativeand maintains its green objectives all throughout the HRM process of recruiting, hiring, training, compensating, developing, and advancing the firms human capital (Mathapati, 2013). It refers to the policies, practices, and systems that make employees of the organization green for the benefit of the individual, society, natural environment, and thebusiness (Opatha & Arulrajah, 2014).

**Need for GHRM:**

Today the need for green human resource management is important for all over the world. The environmental awareness of each human being drives the living style and environment. The general employees are concerned in green human resource management because of its significance and need in the existing place of work. Our personal and professional lifestyle is affected due to many consequences. The corporate world is the most significant in enhancing the environmental issues and

the corporate has to give clarification to these hazards. Now-a-days Organizations need green HRM forseveral reasons:

- To protect the environmental aspects e.g., global warming, climate change, energy crisis, etc. so as to make work meaningful and the place of work safe &healthy within and outside the organizations.
- To instruct, teach and encourage both financially or non-financially the employees to perform their activities in an environmentally trustworthy way.
- To increase or improve corporate environmental performance by certain HR functions such as training, employee empowerment, and Environmental Management System (EMS) rewards.
- To motivate employees, to become involved (employees) in corporate environmental management activities and to develop green abilities and provide employees with opportunities to be involved in corporate environmental management initiatives and efforts.
- To provide environmentally friendly products and operations (companies face increasing pressures for eco-friendly products and operations), to manage corporate environmental programs in successful manner (without failure) and to overcome implementation challenges of corporate environmental programs.

**Practices of Green HRM in present scenario:**

- Paperless office.
- Turn off lights, Computer and Printer after work and on weekends.
- Mail communication.
- Electronic filing.
- Encouraging use of laptop instead of desktop.
- Waste Management.
- Online recruitment.
- Video conferencing meeting.
- Paper less training.

**Components of Green HRM:**

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**Green Recruitment**: Now organizations are giving their advertisement through their web-site. This method is very fast, cheap and easy to assess.
**Green Selection**: Interviews are conducted by group discussion, personal interview, and different activities and in online test. Candidates could be given preferences that are more environment friendly for an organization.
**Green Orientation**: Induction and orientation programs are framed in such a way that facilitates the new comers about green practices. Green issues like health and safety, use of material and cleanness of area in work place etc.

**Green Training**: Training should be given an increase of green management. Trainer should give their training on presentation or by video conferencing. Trainer should use more soft materials rather than printed handouts to reduce the use of paper.
**Green Performance Appraisal**: In performance appraisal use of green practice should be one of the key performances Area (KPA). Green performance appraisal motivates employees for use of green practices in organization.
**Green Compensation and Reward**: Compensation and reward system should be directly linked to use of green skills. Special bonuses given to employees for their effort of less carbon foot print.
**Green Counselling:** Top level managers and counsellors can take initiative to motivate employees for implementation green practices and business sustainability.
**Green Welfare Practices:** Now a day's many organizations changed the concept of health, safety and welfare of employees to health, safety and environmental management. These companies have continuously given their effort to reduce stress occupational disease and hazards at work place.

**Literature on Green HRM practices:**

**Green Job Analysis:**

According to Wehrmeyer (1996) and Renwick et al. (2008 and 2013), job descriptions can generally be used to outline a variety of tasks, functions, and obligations connected to environmental protection. In an effort to preserve the environment, some businesses these days try to include social and environmental activities, duties, and responsibilities into every work. Within certain organizations, every job description comprises at least one environmental protection-related task as well as explicit mention of environmental duties whenever and wherever they apply. Many businesses nowadays have created new positions or jobs that are specifically focused on environmental issues in order to concentrate on the organizational aspects of environmental management. Environmental protection is a particularly worthwhile initiative and practice when seen through the lens of HRM. Furthermore, some businesses have taken the effort to include ecologically focused duties and obligations into their current job designs in order to create more environmentally friendly workplaces. These are a few of the top green HRM methods that fall under the categories of "green job analysis" and "green job design."

**Green Manpower Planning:**

Many businesses currently predict the number and kind of workers required to carry out corporate environmental management programs, operations, and initiatives (e.g., ISO 14001, cleaner production, responsible care etc.). Some of the top businesses have implemented these effective strategies to handle their environmental concerns. Initiatives for corporate environmental management call for the creation of

new job roles and a specialized skill set. Planning for green human resources becomes necessary in this situation. Additionally, these businesses decide how best to handle the anticipated demand for environmental activities (such as hiring consultants or specialists to conduct energy or environmental audits), and occasionally they outsource. The techniques falling under the purview of green human resource planning have not been explicitly defined in the literature that has been published thus far.

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**Green Recruitment:**

The most difficult problem HR managers deal with is finding and keeping highly qualified, professional workers in a global setting. MNCs are now in the market
present themselves as proponents of green HRM in an effort to draw in highly qualified and bright workers who are also well-versed in sustainability issues and green practices (Ehnert 2009). However, job searchers

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are also forcing themselves to get ready in accordance with global green culture standards and strive to have the competencies needed as green workers. Workers also favor companies that care about the environment and practice social responsibility. The UK research findings of Wehrmeyer, 1996 and Oates, 1996 indicate that the reputation of the business plays asignificant role in employees' and job seekers' decisions to accept or decline a given position.

**Green Induction:**

According to Wehrmeyer (1996), induction appears to be necessary to make sure that new hires comprehend and treat the corporate environmental cultureseriously. Businesses might use one of two strategies for green induction. There are two types of green inductions: general and job-specific. A few businessesuse general green induction. These businesses offerthe required foundational information regarding the company environmental management policy, system, and

practices after choosing the individuals for the positions. Sometimes, organizations give their new hires a special green induction as well. They introduce new hires to job-specific environmental orientation programs. These two green induction techniques are crucial for any firm these days. Employers must make sure that new hires are aware of their environmental responsibilities, understand health and safety procedures, value the company's environmental culture, embrace the environmental policy and practices of the business, and are aware of the appropriate contacts within the company (Crosbie and Knight, 1995; Wehrmeyer, 1996; North, 1997; Revill, 2000; Renwick et al, 2008; Renwick et al, 2013).

**Green Training & Development**:

Green HRM plays a key role in developing the necessary skills and information for organizational members (managers and non-managerial employees) by offering environmental training. This will support the company's implementation of its corporate environmental management programs (Cook and Seith, 1992). Reducing long-distance business travel, promoting telecommuting and flexible scheduling, offering training to promote recycling and trash management, and supporting these strategies can all help organizations lessen their negative environmental effects (Jackson et al., 2011). Renwick et al. (2008 and 2013) propose a number of green training and development strategies, including teaching employees how to conduct green workplace analyses, using job rotation to develop future green managers, offering specialized training on environmental management topics like recycling, energy efficiency, waste management, and safety, developing green personal skills, and retraining employees who lose their jobs in related polluter industries.

**Green Performance evaluation:**

Measuring employee green performance of job is one of the key functions in green HRM. Without this practice any organisation cannot ensure the realistic environmental performance (firm level) in long term basis. Evaluation of green performance of employee must be done separately or at least as a part of the performance evaluation system of the organisation. Implementing green performance indicators into performance management systems and assessments,or imposing corporate-wide environmental performance requirements, is insufficient. To achieve targeted environmental performance, it is also necessary to build a firm-wide conversation on green issues and communicate green schemes, performance indicators, and standards to all staff levels through performance assessment systems (Renwick et al, 2008; Renwick et al, 2013).

Within the parameters of their operations, managers are required to set green targets, goals, and responsibilities for their departments, divisions, and sections. They should also evaluate the number ofgreen incidents, the application of environmental responsibility, and the effective communication of

environmental policy (Renwick et al, 2008; Renwick et al, 2013).

**Green Rewards Management:**

Green HRM also includes green incentivemanagement as a crucial component. The environmental sustainability of an organization is significantly influenced by its green reward management strategies. Green reward management plays a major role in inspiring managers and non-managerial staff to support corporate environmental management activities. It can be applied in two ways by organizations: financially and non-financially. Certain organizations offer financial rewards to their staff, such as cash bonuses, incentives, or prizes, for their excellent environmental performance. In several other organizations, staff members who perform well in the environmental department receive non- monetary rewards (prizes, trophies, special recognition, accolades, etc.). Renwick et al. (2008)provide a number of eco-friendly reward management strategies. These include green pay and rewardsystems, customized packages to encourage the acquisition of green skills, the use of monetary and non-monetary environmental management rewards (sabbaticals, cash, premiums), the use of environmental management rewards based on recognition (awards, dinners, publicity, external roles, daily praise), positive rewards in environmental management (feedback), individual reward plans for

everyone to achieve green stewardship and citizenship, the linking of suggestion schemes with rewards systems, the use of green tax breaks, and the relationship between participation in green initiatives and promotion/career gains (managers advance by supporting staff in environmental management).

**Literature on Challenges & opportunitiesregarding sustainable development regardinggreen HRM**

Organizations seeking to strike a balance between environmental sustainability and human resource practices have both possibilities and problems at the convergence of sustainable development and human resource management (HRM), sometimes known as "Green HRM." Here is a list of books that explore this subject: According to Renwick, extensive analysis of the emerging domain of Green HRM, encompassing its theoretical underpinnings, crucial methodologies, and obstacles. A research agenda for additional studies in this field is also suggested.

**Literature on Impact of Green HRM in reshaping organizational practices:**

The purpose of this study is to investigate how organizational reputation (OR) and organizational attractiveness (OA) are affected by green human resource management (GHRM). The study'sconceptual paradigm is based on social identitytheory. A web-based survey link was distributed to331

employees of a hospitality firm in the Democratic Republic of the Congo, with the purpose of administering a closed-ended questionnaire to gather data. Using the SmartPLS 3.0 software, a partial least-square structural equation modeling approach was used to analyze the data. The study's conclusions show that every hypothesis was validated. GHRM, in particular, has a significant impact on both OR and OA. (Merlin, M. L., & Chen, Y. (2022)

This study aimed to investigate how green HRM affects employees' eco-friendly behavior and organizational identity, as well as how organizational identity functions as a mediator in the relationshipbetween the two. A structured questionnaire comprising the measures of the study variables was used to collect data for a cross-sectional quantitative study that was designed to meet the study objectives.
235 workers from various Portuguese tourism organizations that took part in the study provided data for the collection. The results were previously assessed using the Harman test and bootstrapping. The linear regression approach developed by Baron and Kenny was used to assess the mediation study's hypothesis, and the Sobel test was then used to supplement it. The results demonstrated that putting green Ribeiro, et al (2022)

**THEORETICAL MODEL OF GREEN HRM:**


Figure 1. Green human resource management model

**DISCUSSION:**

Human resources are now crucial to managing workers from the point of hire till their departure.Employers should encourage staff members to embrace green human resource management (GHRM)by giving them the appropriate training. There areundoubtedly some obstacles in the way of implementing green HRM, but firms can focus oncreative ways to implement green HR and take note ofwhat other organizations are doing in terms of green HR efforts. Green HRM may foster in staff members a willingness, inspiration, and commitment to contribute their thoughts and efforts to the greening oftheir company. Therefore, it is the duty of Green Human Resource Management to raise awareness of environmental issues among the new talent. The authors stress how important it is becoming to include environmental factors in HRM strategy. They contendthat Green HRM is crucial for tackling environmental

issues while preserving organizational competitiveness as companies come under growing pressure to implement sustainable practices. It also outlines the several challenges that businesses face while putting Green HRM strategies into practice. These difficulties could come from management or staff reluctance, a lack of knowledge or experience, budgetary limitations, and competing organizational agendas.

**FUTURE DIRECTIONS:**

A discussion of prospective trends and advancements in Green HRM is included in the paper's conclusion. This includes the incorporation of sustainability indicators into assessments of HRM performance, the development of new technology to quantify and mitigate environmental effect, and the increasing prominence of HR professionals as sustainability advocates in their respective enterprises. All things

considered, the study offers a thorough examination of the difficulties and possibilities related to integrating Green HRM in modern businesses. It seeks to assist companies in implementing more environmentally friendly and sustainable HRM procedures byproviding useful solutions and insights.

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