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Assessing the Impact of Digital Marketing Strategies on E- Commerce Development: A Study with Special Reference to Dhanbad City

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ABSTRACT

The rapid development of India's e-commerce sector has been significantly influenced by the integration of digital marketing strategies, which serve as critical tools for enhancing consumer engagement, brand visibility, and boosting overall sales performance. The aim of this study, with a special focus to Dhanbad City, is to evaluate digital marketing practices' impact on the development of local e-commerce enterprises. The study highlights how strategies such as social media marketing, email campaigns, influencer collaborations, search engine optimization (SEO), and pay-per-click (PPC) advertising contribute to customer acquisition and retention in a competitive digital marketplace. In this study, a mixed-method approach applied containing primary data as well as secondary data. The primary data collected through interviews with local entrepreneurs and surveys of consumers, and the secondary data covered from academic literature and industry reports. The output of this study highlights that digital marketing expands greater market reach as well as bring up trust and loyalty among consumers, thereby accelerating the growth path of e-commerce businesses in competitive environments. Furthermore, the finding of this study also highlights local challenges such as limited digital literacy, varying consumer preferences and infrastructural constraints, which influence the effectiveness of these strategies. The analysis of the study highlights the significance of varying digital marketing initiatives to local contexts while leveraging global best practices. In the end, the research contributes to understanding the dynamic relationship between e-commerce growth and digital marketing, offering insights for policymakers, entrepreneurs, and the focus of marketers is to strengthen the digital economy in emerging urban centres like Dhanbad.

***Keywords**: Pay-Per-Click (PPC), Search Engine Optimization (SEO), E-Commerce, Social Media Marketing, Email Campaigns and Digital Marketing.*

Introduction

The rapid advancement of digital technologies has transformed the domestic business of developing countries such as India into global business background, thereby fostering the growth and expansion of e-commerce. In India, increased smartphone users, low-cost internet facility and changing consumer' preferences has enhanced the evolution of e-commerce. Digital marketing has focused in the recent years specially in India in the evolution of e-commerce such as consenting businesses to engage consumer and to reach a wider addressee effectively and efficiently. The innovation and adaptability in

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the digital sector, and digital marketing provides the all those ways which direct its issues and difficulties are the key factors of e-commerce development. Digital marketing's impact on e-commerce is enhanced by the integration of advanced technologies such as large data analytics, machine learning (ML), and artificial intelligence (AI). The buying behaviour and preference of consumers in large quantity is analysed with the help of these advance technologies.

Dhanbad City that is recognized for its commercial significance, has been observed during the recent years a transference towards e-commerce and digital marketing. Local traders and enterprises are increasingly embracing digital platforms to broaden their market reach and strengthen competitiveness. This shift not only opens new avenues for sustainable growth but also challenges businesses to adapt their traditional practices to the demands of a rapidly evolving digital marketplace. However, a careful and systematic analysis is essential to evaluate the effectiveness of digital marketing strategies in emerging markets. This study seeks to examine digital marketing's impact on the growth of e-commerce, with particular emphasis on email campaigns, strategies such as social media marketing, pay-per-click (PPC) advertising, influencer collaborations, and search engine optimization (SEO). These tools collectively contribute to customer acquisition, retention, and improved business performance in an increasingly competitive digital environment. The primary objective is to provide a comprehensive assessment of how digital marketing influences e-commerce operations, enhances brand visibility, and strengthens consumer engagement. Furthermore, the research highlights both the challenges and opportunities associated with adopting digital marketing practices in Dhanbad City, offering context-specific insights into their implementation. By analysing the relationship between digital marketing strategies and e-commerce development, this study contributes to the broader understanding of digital transformation in emerging economies and provides practical guidance for businesses striving to excel in the digital marketplace.

Review of Literature

Digital marketing strategies' impact on the development of e-commerce has been widely observed as an important and critical factor in various studies during the last decades. **Chaffey and Chadwick (2012),** defined digital marketing as an important tool for getting marketing target with the assistant of digital technology application which encompasses desktop, cellular phone, tablet, and other digital platform. According to **Chaffey (2019),** digital marketing enhances the engagement of customers through personalised, internet and digital technology**. Zahay (2015)** has explored that digital marketing as a digital technology applied to simplify the marketing procedure in large scale aiming to build customers' engagement, involvement and interaction. According to **Kotler & Keller (2016)**, various online marketing tools influence consumer buying decision. According to **Strauss & Frost (2014),** social media marketing acts a significant and dynamic role in building brand awareness. **Kotler et al., (2021)** highlighted that income levels of consumers also influence the buying decision as higher income groups are more attractive for premium products and less sensitive for low price products. Another side Alawan et at. enforced that click through and conversion rates can be enhanced by visual contents **Alawan et at (2017).** In the era of technology, artificial intelligent (AI) acts a significant and dynamic role in the influencing of customers' buying decision. **Davenport & Ronanki, (2018)** explored that AI and machine learning enable to target more precise customers and predictive analytics. In 2023, **Singla (2023)** highlighted in his study that social media marketing, search engine optimization (SEO) and PPC Ads are the most effective digital marketing strategies. As per the statement of **Kaplan and Haenlein (2010),** social media marketing provides a platform where a trader can communicate directly with consumers and show their products and obtain quickly feedback. **Voorveld (2018)** explored about the relationship between social media marketing and E-Commerce performance and highlighted that the thoughts of consumers can be disaffected by the excessive promotional content, so make a balance between promotional contents and informative and entertain content. According to **Dwivedi et al. (2021),** to sustain relevance and strengthen consumers' relationship, effective engagement and ongoing content optimization are required. Traders are able to drive measureable traffic and conversion through Pay-per-click advertising **(Gerwal et al., 2020).**

Research Gap and Objective of the Study

Several research studies examine digital marketing strategies' impact on e-commerce in different ways, cases and provinces, but a few studies explored digital marketing strategies' impact in a combination of PPC, Social Media Marketing, AI-Driven Marketing Automation, Email Marketing, and SEO on Consumer Behavior on the growth of e-commerce in semi-urban areas like Dhanbad. The main

focuses of the study are on how Social media strengthens customer relationships, PPC advertising boosts short-term sales, Email marketing increases customer retention, PPC advertising boosts short-term sales, SEO improves visibility and organic traffic, and AI-Driven Marketing Automation highlighting potential consumer distrust. However, the existing study highlights the threats faced by the traders and entrepreneurs such as digital illiteracy, trust issues, and infrastructural limitations, especially in semi-urban areas.

- **Objectives of the Study**

The primary objective of this study is to conduct a comprehensive analysis of how digital marketing strategies influence the growth of e-commerce operations, improving brand brightness and enhancing customer participants.

- To identify the key challenges faced by E-Commerce businesses in Dhanbad.
- To explore the role of Social Media Marketing, PPC on Consumer Behavior, AI-Driven Marketing Automation, SEO, and Email Marketing.
- To evaluate digital marketing strategies 'impact on e-commerce development.

Formulation of Hypothesis

To explore digital marketing strategies' impact on e-commerce development, five marketing strategies related to digital network are determined as independent variable and a precise hypothesis statements are formulated as below:

H_0: Digital marketing strategies do not have a significant impact on the growth of e-commerce operations.

H_1: Digital marketing strategies have a significant positive impact on the growth of e-commerce operations.

Research Methodology

The existing study applies a descriptive and analytical research design, employing a structure survey to collect primary data. In this study, SPSS software is applied to explore the relationship between digital marketing strategies and e-commerce development. The study attentions on Dhanbad, a prominent city of Jharkhand, India. The unlike consumer immoral of Dhanbad and emerging e-commerce environment provide a suitable context for analysing and understanding digital marketing strategies' impact on e-commerce development. In this study, both types of data- Primary data and Secondary data are applied. The population includes consumers who shop online in the city and entrepreneurs engaged in e-commerce in Dhanbad. A total of 150 respondents were surveyed and in-depth interviews with 20 e-commerce entrepreneurs supplemented by secondary data from research journals, books, and industry reports. Convenience sampling was employed to select participants. Data analysis involved descriptive statistics, percentage analysis, mean and standard deviation. Chi-Square Test is applied to validate the relationship explored between digital marketing strategies and e-commerce development. The conceptual framework of the existing research is below:

Conceptual Framework

Independent Variable (**Digital Marketing Strategies)**	**Dependent Variable**
• SEO, • Social Media Marketing, • Email Marketing, • PPC on Consumer Behavior • AI-Driven Marketing Automation	E-Commerce Development

Data Analysis and Interpretation

The collected data is analysed through some specific statistical techniques such as descriptive statistics, and chi-square test to examine the relationship between digital marketing strategies and E-Commerce operations. For this SPSS software is applied to analyse and examined. The observed frequency table highlights the distribution of responses in 1-5 Likert scale across five (05) digital marketing strategies. Each Question has responses distributed across a 5-points Likert scale (1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, and 5 = Strongly Agree).



Diagram: Consumer Preference for Online Shopping

Consumer preference data shows that **discounts and offers (75%)** are the strongest motivator for online shopping, followed by **convenience (70%)** and **price comparison (65%),** while **variety of products (60%)**is slightly less influential. In short, **economic benefits and ease of access drive online shopping more than product diversity.**

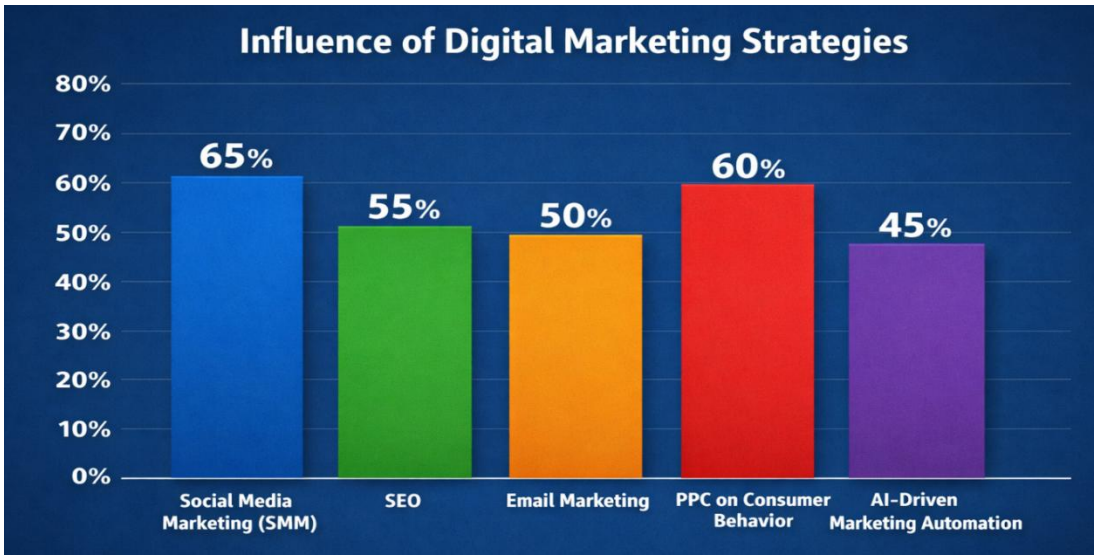


Diagram: Influence of Digital Marketing Strategies

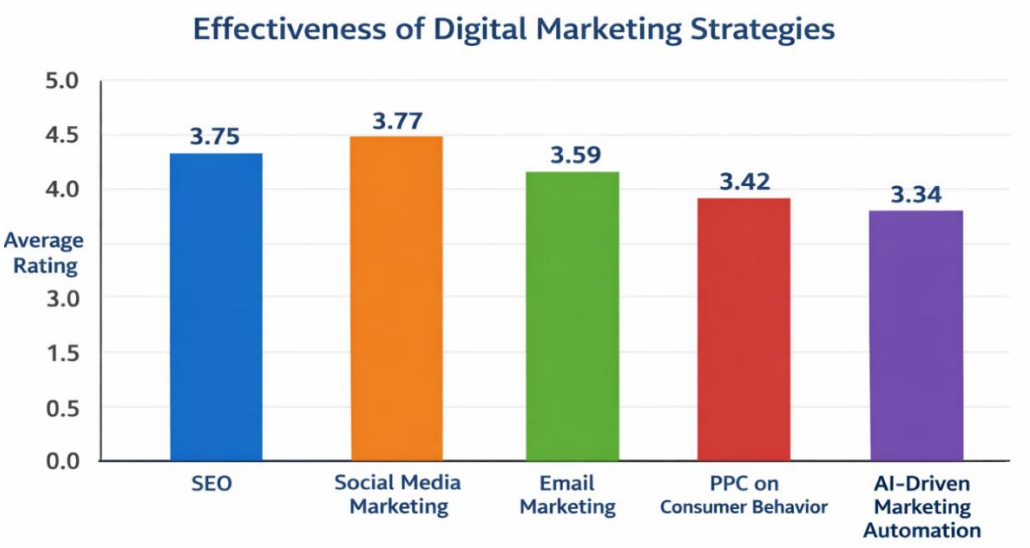
This diagram highlights that **Social Media Marketing (65%)** is the utmost influential digital strategy, followed by **PPC on consumer behavior (60%)**and **SEO (55%). Email marketing (50%)** has moderate influence, while **AI-driven automation (45%)** ranks lowest. In short, consumers respond most strongly to **social engagement and paid campaigns,** while newer AI-based methods are less impactful at present.



Diagram: Challenges Faced by Businesses

The data on challenges faced by businesses shows that **high competition (70%)** is the most pressing issue, reflecting the intense rivalry in digital markets. **Consumer trust issues (65%)** also rank high, indicating concerns about transparency, security, and credibility in online transactions. **Lack of digital skills (60%)** highlights a significant barrier to effective adoption of digital tools, while **infrastructure issues (55%)** point to limitations in technology and connectivity. In short, businesses struggle most with **competition and trust**, while skill gaps and infrastructure constraints further hinder their digital growth.

In the interpretation of the Likert scale data, confirms, Social Media Marketing (SMM) and Search Engine Optimization (SEO)are observed as the utmost effective strategies of digital marketing, achieving the highest average ratings and stronger consumer approval. These strategies continue to dominate due to their wide reach and proven ability to engage audiences. Email Marketing reveals moderate acceptance, though responses vary more widely, indicating mixed perceptions among consumers. In contrast, Pay-Per-Click (PPC) and AI-Driven Marketing Automation rank lower, suggesting limited consumer trust or awareness of their benefits. The overall findings of the existing study states that the outdated strategies like SEO and SMM remain central to e-commerce success, while emerging approaches such as AI and PPC require better integration, awareness, and consumer education to build confidence and achieve comparable effectiveness.



Sl. No.	Digital Marketing Strategy	Average	Standard Deviation
1	SEO	3.75	0.74
2	Social Media Marketing (SMM)	3.77	0.77
3	Email Marketing	3.59	0.83
4	PPC on Consumer Behavior	3.42	0.80
5	AI-Driven Marketing Automation	3.34	0.78

The statistical analysis of the existing study states about digital marketing strategies' effectiveness that highlights both the relative strength of traditional approaches and the variability in their perceived impact. Social Media Marketing (SMM) and Search Engine Optimization (SEO) record the highest average effectiveness scores (3.77 and 3.75 respectively), suggesting that these strategies remain dominant in driving visibility and consumer engagement. Their relatively lower standard deviations (0.77 and 0.74) indicate a more consistent perception of effectiveness among respondents. Email marketing, with an average of 3.59 and a higher standard deviation of 0.83, reflects moderate effectiveness but greater variability, which suggest that execution quality and audience segmentation may be key factors for the success of email marketing. Pay-Per-Click (PPC) advertising registers a lower average score of 3.42 with a deviation of 0.80, pointing to mixed views likely influenced by concerns over cost efficiency and sustainability. AI-driven marketing automation, despite its innovative potential, ranks lowest (3.34) with a deviation of 0.78, suggesting limited adoption or uneven familiarity among participants. The overall findings highlights that SEO and SMM are consistently valued, while strategies such as email marketing, PPC, and AI automation exhibit greater divergence in perceived effectiveness, highlighting the need for tailored implementation and awareness-building to maximize their impact.

Chi-Square Test Results

$$\chi^2 = \Sigma (O-E)^2 / E$$

Where:

- O = Observed frequency
- E = Expected frequency

SPSS Software applied to compute this value

Statistic	Value
Chi-Square (χ^2)	41.2
Degrees of Freedom (df)	16
p-value	0.0005

The results of chi-square test highlight a tough confirmation in favour of the alternative hypothesis. With a chi-square statistic of **41.2** at **16 degrees of freedom**, the associated **p-value of 0.0005** is far below the conventional significance threshold of 0.05. This indicates that the null hypothesis (H_0), which suggests that digital marketing strategies do not significantly impact e-commerce growth and development, can be rejected. Instead, the findings support the alternative hypothesis (H_1), affirming that digital marketing strategies apply a statistically significant and positive influence on the expansion and advancement of e-commerce operations. The suggestions of the existing study are that strategies such as SEO, social media marketing, and automation are not merely supplementary tools but also act a significant and dynamic role in shaping consumer behavior, enhancing visibility, and driving sustainable growth in the digital marketplace. The strength of the statistical evidence underscores the necessity for businesses to integrate and optimize digital marketing practices as core components of their e-commerce development strategies.

Findings of the Study, Recommendation and Conclusions

The existing study results reveal digital marketing strategies as pivotal drivers, transforming and advancing e-commerce development within the competitive marketplace of Dhanbad. The increasing belief on online platforms reveals changing consumer behavior. However, the effectiveness of these strategies depends on local conditions such as infrastructure and digital literacy.

Digital marketing accelerates e-commerce growth through enhanced visibility, improved engagement, and strengthened consumer trust. Social media marketing proves most effective in reaching and shaping consumer behavior among digital strategies, While SEO and PPC boost traffic and

conversions, personalised email marketing strengthens customer loyalty in e-commerce. Personalised email marketing enhances customer loyalty by building trust and sustaining long-term engagement. and consumers increasingly rely on **online reviews** to guide their purchasing decisions. However, local businesses encounter several challenges in adopting digital tools, including **limited awareness, poor internet connectivity, resistance to change,** and **security concerns** in online transactions. To overcome these barriers, the implementation of **digital literacy programs** for entrepreneurs and consumers is essential. Furthermore, **infrastructure development** to improve connectivity, **localized marketing** tailored to regional preferences, and **skill development initiatives** for business owners can enhance digital readiness. Secure payments and transparent policies are vital for building consumer trust in e-commerce along with Government incentives and regulations collectively strengthen inclusivity and sustainability, driving long-term growth of the e-commerce ecosystem.

In conclusion, the study establishes digital marketing as a pivotal driver of e-commerce growth in Dhanbad City. Digital marketing techniques like pay-per-click (PPC) social media campaigns, and search engine optimization (SEO), ads shape consumer perceptions and drive business outcomes. Despite the presence of challenges, they are not undefeatable and can be managed through careful strategy, improved infrastructure, and ongoing skills development. Integrating digital marketing with local business practices creates sustainable growth opportunities, helping firms stay competitive in a fast-changing market. This study deepens our understanding of digital transformation in emerging markets and offers actionable guidance for stakeholders aiming to use digital tools for inclusive, long-term e-commerce expansion.

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