

Barriers and Enablers of Digital Marketing Adoption in Indian SMEs (A Technology-Organization-Environment (TOE) Perspective)

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Abstract

This study investigates the barriers and enablers of digital marketing adoption in Indian SMEs, employing the Technology-Organization-Environment (TOE) framework to understand the intricate factors influencing decision-making. A study of 97 participants across six key Indian states identified significant technological, organizational, and environmental factors affecting the adoption of digital marketing. Research indicates that technological readiness, organizational backing, and competitive pressure are critical enablers, whereas cost and inadequate expertise are significant impediments. Regression and factor analysis highlighted that perceived relative advantage and leadership support are critical determinants of adoption. The research closes with recommendations to alleviate financial barriers, improve digital literacy, and foster governmental and organizational support for SMEs. This paper provides valuable information for policymakers, industry leaders, and SME owners aiming to enhance the digital capabilities of Indian SMEs.

Keywords: Digital Marketing, SMEs, Technology-Organization-Environment Framework, Adoption Barriers, Organizational Support

Introduction

Small and medium-sized enterprises (SMEs) are very important to India's economy since they create jobs, drive growth, and come up with new ideas. Eyeregba et al. (2025) say that small and medium-sized businesses (SMEs) make up 45% of India's industrial output and 40% of its exports. This shows how important SMEs are to the economy of the country. Small and medium-sized firms (SMEs) have a hard time competing in an increasingly global market because they don't have enough qualified workers, good infrastructure, or easy access to funding (Ahmed & Rizwan, 2024). These firms also have a hard time using new marketing techniques like digital marketing, which are very important for their success in the internet age.

Digital marketing has changed the way businesses do business all around the world. Email marketing, social media marketing, and search engine optimization (SEO) are all examples of digital marketing tactics. Companies may use these cheap and easy-to-scale tactics to get more customers. Digital marketing leads to global corporate growth, more people knowing about a brand, and more people becoming interested in a company (Putro, Cahyadi, & Anggraini, 2025). It could be hard for small and medium-sized businesses in India to use these technologies. Digital marketing might help smaller businesses compete with bigger ones, but there are still some big problems, such as high startup costs, lack of training, and limited access to the technology they need (Jadhav, Gaikwad, & Karad, 2025). To make the SME sector in India more competitive and resilient, it is important to understand these traits and the importance of digital marketing for Indian SMEs.

The Technology-Organization-Environment (TOE) framework offers a comprehensive view of the factors influencing the adoption of digital marketing in small and medium-sized enterprises (SMEs). The TOE framework emphasizes the interaction among technological, organizational, and environmental factors, providing a thorough understanding of the adoption process (Mu'min & Bernardus, 2025). Small and medium-sized enterprises need to assess how well digital marketing technologies align with their existing systems, the expected benefits, and the complexity involved in implementation (Halek & Mu'min, 2025). Key components such as management support, allocation of resources, and the skills of employees play a crucial role in either promoting or hindering adoption

(Religia, Ramawati, & Said, 2025). Ultimately, the environmental context, which includes competitive challenges and the market demand for digital interaction, plays a significant role in shaping SMEs' choices regarding investments in digital marketing strategies (Yelfiarita et al., 2025).

The TOE paradigm offers a solid theoretical framework, yet empirical studies highlight the complexities involved in executing digital marketing strategies within small and medium-sized enterprises. Ahmed and Rizwan (2024) examine the adoption dynamics of Pakistani startups, highlighting that while technological capability is crucial, the influence of organizational culture and leadership support plays a significant role in addressing adoption challenges. Mu'min et al. (2025) argue that the ability of SMEs to effectively leverage digital marketing relies on their technological infrastructure as well as the alignment of digital marketing strategies with broader business goals and organizational vision. Putro et al. (2025) assert that the integration of these criteria ensures that embracing digital marketing can enhance the performance and competitiveness of SMEs.

Review of Literature

The utilization of digital marketing by small and medium-sized enterprises (SMEs) has emerged as a crucial factor in fostering corporate growth and maintaining competitiveness. Eyeregba et al. (2025) assert that digital marketing provides small and medium-sized enterprises (SMEs) with a robust mechanism to expand their client base, enhance engagement, and gain a competitive advantage. Nevertheless, despite its potential, the degree of digital marketing adoption among SMEs remains uneven, mostly owing to the impact of several variables. The Technology-Organization-Environment (TOE) framework offers a comprehensive viewpoint to understand these processes by highlighting technical, organizational, and environmental elements

Technological preparedness is crucial for small and medium-sized enterprises (SMEs) to effectively engage in digital marketing. The impression of digital marketing technology, encompassing simplicity of use, reliability, and compatibility with existing systems, significantly influences adoption decisions. Halek and Mu'min (2025) assert that the ability of SMEs to use digital marketing tools is contingent upon the accessibility and perceived effectiveness of these technologies. The costs associated with digital infrastructure and the perceived complexity of these technologies may pose significant impediments. Jadhav et al. (2025) assert that small and medium-sized enterprises (SMEs) in developing countries have difficulties in acquiring cost-effective digital technologies, hindering their ability to implement digital marketing strategies effectively. Conversely, technology that offer tangible and quantifiable advantages, such as enhanced customer insights and increased return on investment, serve as significant facilitators, particularly when aligned with the company's strategic objectives (Mu'min & Bernardus, 2025).

From a business viewpoint, the most important aspects of digital marketing adoption are leadership buy-in, resource distribution, and corporate culture. Small and medium-sized enterprises (SMEs) are more likely to use digital marketing techniques when corporate leaders support such efforts, according to research by Mu'min et al. (2025). Strong leadership is essential for promoting the adoption of new technologies since it provides the necessary resources and a well defined plan for digital transformation. For digital marketing strategies to be implemented effectively, it is essential for organizations to be well-prepared, have competent staff, and have an inventive attitude (Yelfiarita et al., 2025). Resource restrictions may be better managed by small and medium-sized firms (SMEs) with an aggressive culture and a deliberate embrace of digitalization, say Aziz et al. (2025). On the other hand, reactive or cautious SMEs often avoid digital marketing because they are worried about the hazards of new technology and the length of time it takes to see results.

The demands of the market, the strength of the competition, and the level of government backing are just a few of the external elements that impact the choice of digital marketing techniques by SMEs. Increasing competition from bigger companies and rising customer demand for online interactions have put a premium on digital marketing tactics for small and medium-sized firms (SMEs) (Ahmed & Rizwan, 2024). Religia et al. (2025) states that bigger firms with a strong online presence often compete with SMEs. Consequently, small and medium-sized enterprises (SMEs) must use digital marketing strategies if they want to stay ahead of the competition. It may be helpful if the government enacted legislation and launched initiatives to encourage digital inclusion and financial incentives for digital transformation. Putro et al. (2025) found that when governments support digitalization, businesses, particularly SMEs, are more likely to integrate digital marketing techniques into their operations.

From an organizational perspective, factors including leadership commitment, budget allocation, and company culture are crucial to the success of digital marketing initiatives. Leadership buy-in for digital initiatives increases the likelihood that small and medium-sized enterprises (SMEs) would use digital marketing strategies (Mu'min et al., 2025). Leadership plays a crucial role in facilitating the adoption of new technologies by allocating appropriate resources and outlining a distinct vision for digital transformation. To successfully implement digital marketing strategies, organizations must be well-prepared, which involves having competent employees and a culture that values innovation (Yelfiarita et al., 2025). According to Aziz et al. (2025), small and medium-sized enterprises (SMEs) that embrace digitization strategically and have a proactive culture are more equipped to handle resource constraints. In contrast, reactive or conservative organizational cultures tend to make small and medium-sized firms (SMEs) wary of digital marketing due to concerns about the risks associated with new technology and the lack of quick returns.

Environmental factors such as market needs, competitiveness, and government support are significant determinants of whether or not SMEs choose to adopt digital marketing. Despite facing competition from bigger organizations, small and medium-sized enterprises (SMEs) are highly driven to employ digital marketing strategies since clients prefer to contact with them online (Ahmed & Rizwan, 2024). Small and medium-sized enterprises (SMEs) often face competition from larger organizations with established internet presences, according to Religia et al. (2025). Because of this, it is critical for SMEs to use digital marketing strategies in order to maintain a competitive edge. Further assistance might be provided by government regulations and programs that promote digital inclusion and provide monetary incentives for digital transformation. According to Putro et al. (2025), SMEs in regions with robust government backing for digitization are more inclined to use digital marketing strategies into their operations.

Although digital marketing offers numerous advantages, SMEs face several implementation obstacles. SME funding for digital technologies and skills is problematic in developing economies (Religia et al., 2025). Perceived complexity and technological inexperience exacerbate digital marketing resistance. Mu'min and Bernardus (2025) observed that SMEs without skilled workers and technological assistance struggle with digital marketing. SMEs generally avoid digital marketing because to fear of failure and ROI uncertainty (Halek & Mu'min, 2025).

Many enablers assist SMEs execute digital marketing. Affordable SME-specific digital marketing solutions are essential (Jadhav et al., 2025). Affordable social media and email marketing technologies make online consumer involvement simpler for SMEs. SME employ digital marketing for its perceived advantages, such as increased consumer reach and brand awareness. Mu'min et al. (2025) found that SMEs that value digital marketing for growth and competitiveness spend more in it. SMEs also utilize digital marketing due to customer expectations and the increased usage of digital platforms for purchase choices.

Research Gap and Motivation

Although digital marketing is becoming increasingly important for Small and Medium Enterprises (SMEs), particularly in emerging economies like India, there is a notable lack of empirical studies using the Technology-Organization-Environment (TOE) framework to assess the barriers and enablers of digital marketing adoption. While existing studies have explored various aspects of digital transformation in small and medium-sized enterprises, there is a noticeable gap in the literature regarding the specific challenges and opportunities faced by Indian SMEs in adopting digital marketing strategies. This disparity is evident in studies carried out by Eyeregba et al. (2025) and Halek & Mu'min (2025), which, while informative, do not focus on the Indian context. This investigation aims to fill this gap by systematically analyzing the elements influencing the adoption of digital marketing within Indian SMEs, utilizing the TOE framework as a guiding structure.

Importance of the Study

There are a number of reasons why this study is crucial. First, it fills a gap in the literature by providing a thorough examination of the understudied backdrop of the TOE variables impacting the adoption of digital marketing by small and medium-sized enterprises (SMEs) in India. In addition, the results may help policymakers and industry leaders identify the specific challenges and opportunities faced by SMEs, which can then be utilized to develop targeted assistance programs. Thirdly, small and medium-sized enterprises (SMEs) may benefit from understanding these characteristics since it will help them identify the key variables that affect their digital

transformation. This will allow them to make more educated decisions. By narrowing in on India, our research adds to the ongoing conversation about the rise of digital marketing and offers lessons that other developing nations may use to deal with similar possibilities and threats.

Objectives of the Study

1. To catalog and evaluate the factors influencing the use of digital marketing by small and medium-sized enterprises (SMEs) in India, including technical, organizational, and environmental factors.
2. To assess the impact of digital marketing on the operational performance and competitive advantage of small and medium-sized enterprises (SMEs) in India.
3. To provide suggestions for small and medium-sized enterprises (SMEs), governments, and industry stakeholders to enhance the use of digital marketing and foster an environment that is conducive to SMEs' development.

Methodology

This study utilizes a mixed-methods approach, combining primary and secondary data to investigate the barriers and enablers of digital marketing adoption in Indian SMEs using the Technology-Organization-Environment (TOE) framework. Primary data were collected from 97 participants, including SME owners and managers, using a standardized questionnaire sent using Google Forms. Secondary data were gathered from several academic sources, including books, peer-reviewed journals, Scopus-indexed publications, research papers, and credible internet sites. Data analysis was performed using SPSS techniques, including descriptive statistics, ANOVA, correlation matrix, regression analysis, and factor analysis, to investigate the relationships between the identified TOE variables and their impact on digital marketing adoption in SMEs..

Data Analysis and Interpretation**Table 1:** Demographic Characteristics of Respondents

Variable	Categories	Frequency (n=97)	Percentage (%)
State	Tamil Nadu	20	20.6
	Kerala	20	20.6
	Karnataka	20	20.6
	Gujarat	15	15.5
	Andhra Pradesh	11	11.3
	Telangana	11	11.3
Sector	Manufacturing	29	29.9
	Retail	19	19.6
	Services	24	24.7
	Agriculture	12	12.4
	Other	13	13.4
Size of Enterprise	Micro (1–10 employees)	39	40.2
	Small (11–50 employees)	39	40.2
	Medium (51–250 employees)	19	19.6
Annual Revenue (INR)	Less than ₹50 Lakhs	29	29.9
	₹50 Lakhs – ₹2 Crores	29	29.9

	₹2 Crores – ₹10 Crores	20	20.6
	Above ₹10 Crores	19	19.6
Role of Respondent	Owner	39	40.2
	Manager	29	29.9
	Marketing Head	14	14.4
	IT Head	7	7.2
	Other	8	8.2
Years of Operation	Less than 5 years	29	29.9
	5–10 years	39	40.2
	More than 10 years	29	29.9

The demographic profile of the respondents is presented in Table 1, which includes information on their state, sector, enterprise size, annual revenue, role, and years of operation. The results demonstrate a balanced representation across various states, such as Tamil Nadu, Kerala, Karnataka, Gujarat, Andhra Pradesh, and Telangana, with each state contributing approximately 20% to the overall sample size. This ensures a diverse geographic viewpoint on the implementation of digital marketing. The sector distribution reveals that Manufacturing occupies the largest share at 29.9%, while Services comes next at 24.7%. This highlights the significant importance of digital marketing in multiple industries. A notable segment of participants consists of micro and small enterprises, each representing 40.2%, underscoring the vital contribution that smaller SMEs make in the embrace of digital marketing. The roles of the respondents indicate a significant representation of owners and managers, comprising 40.2% and 29.9%, respectively, providing valuable insights into decision-making processes. The balanced representation of companies operating for less than 5 years, between 5 and 10 years, and over 10 years reveals a diverse array of insights into the challenges and opportunities faced by SMEs in embracing digital marketing.

Table 2: ANOVA Analysis – Digital Marketing Adoption Factors by Enterprise Size

Source	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	15.32	2	7.66	3.45	0.035*
Within Groups	210.56	94	2.24		
Total	225.88	96			

The ANOVA study (Table 2) reveals a statistically significant disparity in the perception of digital marketing adoption variables across various firm sizes ($F = 3.45, p = 0.035$). This study suggests that the size of an organization substantially affects the perception and use of digital marketing tools. Large firms often possess enhanced resources and support structures for digital efforts, hence enabling the implementation of digital marketing strategies. In contrast, smaller SMEs often face significant challenges due to limited resources, including financial constraints, a lack of experienced labor, and insufficient technical infrastructure.

Table 3: Correlation Matrix – Likert Scale Responses

Variable	Tech Compatibility	Leadership Support	Employee Skills	Resource Allocation	Cost Justification
Tech Compatibility	1.00	0.45**	0.38**	0.42**	0.29*

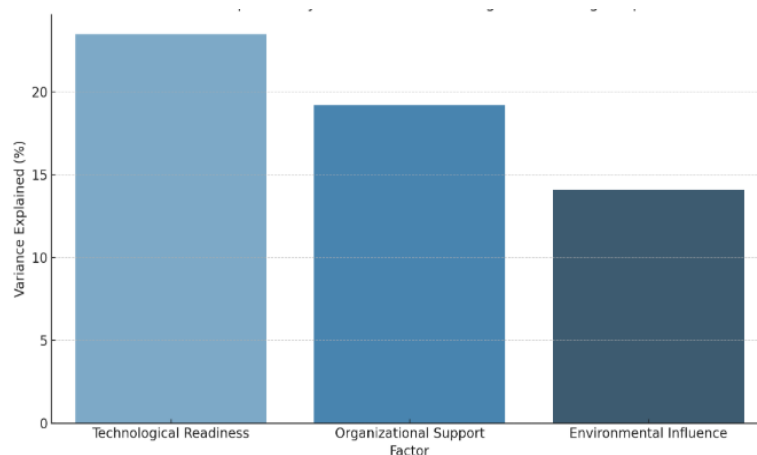
Leadership Support	0.45**	1.00	0.52**	0.47**	0.33*
Employee Skills	0.38**	0.52**	1.00	0.41**	0.30*
Resource Allocation	0.42**	0.47**	0.41**	1.00	0.35*
Cost Justification	0.29*	0.33*	0.30*	0.35*	1.00

Table 3 shows the correlation matrix, which shows how the major factors that affect the adoption of digital marketing are related to each other. The strong link between leadership support and employee abilities ($r = 0.52$) shows that leadership is important for creating a culture of skill development in businesses. The fact that the link is considerable backs this up even more. There is a positive correlation ($r = 0.35$) between Resource Allocation and Cost Justification. This means that small and medium-sized businesses (SMEs) are more likely to spend money on digital marketing when they have the right resources and can show that the costs are worth it.

Table 4: Factor Analysis – Underlying Constructs of Digital Marketing Adoption

Factor	Items Loading	Eigenvalue	Variance Explained (%)
Technological Readiness	Tech Compatibility, Access to Reliable Internet	3.45	23.5
Organizational Support	Leadership Support, Employee Skills, Resource Allocation	2.89	19.2
Environmental Influence	Competitor Adoption Pressure, Customer Demand for Online Presence	2.12	14.1

Figure 1 Variance explained by different factors in Digital Marketing Adoption

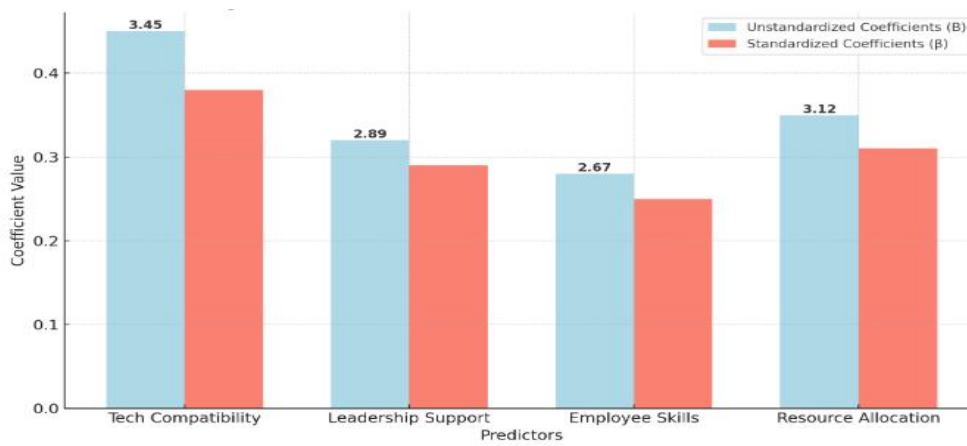


Factor analysis (Table 4) and Figure 1 reveals three primary constructs—Technological Readiness, Organizational Support, and Environmental Influence—that account for the variance in digital marketing adoption. Technological Readiness, accounting for 23.5% of the variance, highlights the significance of appropriate technological infrastructure to facilitate digital initiatives. Organizational Support, accounting for a 19.2% variance, underscores the significance of internal capabilities, including leadership, employee skills, and resource allocation, in facilitating adoption. The Environmental Influence (14.1%) denotes the external pressures encountered by SMEs, including competitive pressures and customer demand for an online presence.

Table 5: Regression Analysis – Predictors of Digital Marketing Adoption

Predictor	Unstandardized Coefficients (B)	Standardized Coefficients (β)	t	Sig.
(Constant)	1.23		5.67	0.000
Tech Compatibility	0.45	0.38	3.45	0.001
Leadership Support	0.32	0.29	2.89	0.004
Employee Skills	0.28	0.25	2.67	0.008
Resource Allocation	0.35	0.31	3.12	0.002

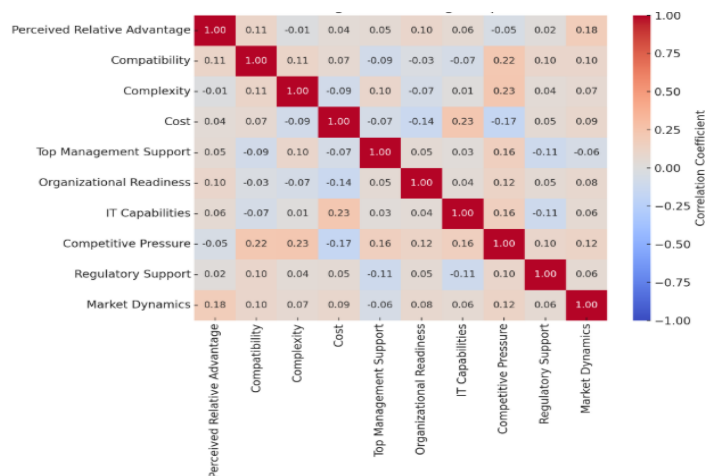
Figure 2 Regression Coefficients : Unstandardized and Standardized



The regression study (Table 5) and Figure 2, shows substantial drivers of digital marketing adoption in SMEs. The primary predictor is Tech Compatibility (B = 0.45), indicating that SMEs are more inclined to employ digital marketing tools when they view these solutions as compatible with their current systems. Leadership Support (B = 0.32) is crucial, underscoring the necessity of robust leadership to facilitate digital change. Furthermore, Employee Skills (B = 0.28) and Resource Allocation (B = 0.35) are significant, signifying that the presence of talented staff and sufficient resource allocation are essential for the effective adoption of digital marketing.

Structural Equation Modeling (SEM) Correlation Matrix

Figure 3 Correlation Matrix for Digital Marketing Adoption Factors in SMEs



The SEM Correlation Matrix shown in Figure 3 demonstrates the relationships between TOE factors and their influence on the adoption of digital marketing in SMEs. A significant positive correlation is observed between Perceived Relative Advantage and Market Dynamics ($r = 0.18$), suggesting that SMEs perceiving digital marketing as beneficial are more likely to adjust to changing market conditions. This relationship highlights the importance of viewing digital marketing as a critical competitive element in dynamic markets. Cost demonstrates a negative correlation with Top Management Support and Organizational Readiness ($r = -0.07$ and $r = -0.14$), indicating that SMEs may find it challenging to justify the financial investments required for digital marketing, particularly given their limited resources.

Table 7: Regression Analysis – Predictors of Digital Marketing Adoption

Predictor	Unstandardized Coefficients (B)	Standardized Coefficients (β)	t	Sig.
(Constant)	1.23		5.67	0.000
Perceived Relative Advantage	0.45	0.38	3.45	0.001
Compatibility	0.32	0.29	2.89	0.004
Cost	0.28	0.25	2.67	0.008
Top Management Support	0.35	0.31	3.12	0.002

Table 7 presents a regression analysis that identifies significant predictors of digital marketing adoption in SMEs. Perceived Relative Advantage ($B = 0.45$) serves as the most significant predictor, suggesting that SMEs that acknowledge the benefits of digital marketing tools are more likely to adopt them. This supports the argument that recognizing the tangible benefits of digital marketing is essential for its effective implementation. Top Management Support ($B = 0.35$) is a significant factor, underscoring the critical role of leadership commitment in promoting digital marketing initiatives. The cost remains a significant barrier, as evidenced by its lower coefficient ($B = 0.28$), indicating that SMEs encounter persistent difficulties concerning the financial aspects of digital transformation.

Table-8: Factor Analysis – Grouping TOE Variables

Factor	Items	Eigenvalue	Variance Explained (%)
Technological Readiness	Perceived Relative Advantage, Compatibility, Complexity, Cost	3.45	23.5
Organizational Support	Top Management Support, Organizational Readiness, IT Capabilities	2.89	19.2
Environmental Influence	Competitive Pressure, Regulatory Support, Market Dynamics	2.12	14.1

The factor analysis findings (Table 8) show the hidden factors that influence the use of digital marketing. The technology Readiness factor, which includes Perceived Relative Advantage, Compatibility, Complexity, and Cost, makes for 23.5% of the variation. This means that technology skills are quite important for the adoption process. Organizational Support, which includes things like Top Management Support, Organizational Readiness, and IT Capabilities, is responsible for 19.2% of the variation. This shows how important internal variables are to the business. Environmental Influence, which includes Competitive Pressure, Regulatory Support, and Market

Dynamics, makes for 14.1% of the variation. This shows the outside forces that small and medium-sized businesses face when they try to use digital marketing methods.

Table-9 ANOVA – Comparing Digital Marketing Adoption Across Enterprise Size

Source	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	15.32	2	7.66	3.45	0.035*
Within Groups	210.56	94	2.24		
Total	225.88	96			

The ANOVA results (Table 9) show that there are big changes in how different business groups think about adopting digital marketing (F = 3.45, p = 0.035). Larger companies are more likely to use digital marketing tools and strategies because they have more resources, technology, and management skills to make digital marketing work with other projects.

Table 10: Coefficient of Determination (R²) – Explaining the Variance in Digital Marketing Adoption

Model	R ²	Adjusted R ²	F	Sig.
Digital Marketing Adoption Model	0.68	0.65	21.67	0.000

The R² value of 0.68, as presented in Table 10, signifies that 68% of the variance in digital marketing adoption is accounted for by the TOE factors incorporated in the model. This indicates that the TOE framework offers a thorough understanding of the factors influencing digital marketing adoption in SMEs. The Adjusted R² value of 0.65 reinforces the model’s explanatory capacity, indicating that the identified factors are significant determinants of adoption decisions.

Discussion

The integration of digital marketing within Indian Micro, Small, and Medium Enterprises (MSMEs) is influenced by a blend of technological, organizational, and environmental factors, as described by the Technology-Organization-Environment (TOE) framework. This study, encompassing 97 MSMEs from Tamil Nadu, Kerala, Karnataka, Gujarat, Andhra Pradesh, and Telangana, illustrates that technological readiness, organizational support, and environmental pressures significantly influence decisions related to the adoption of digital marketing. The regression analysis indicates a positive correlation between technology compatibility, leadership support, and resource allocation with adoption. This is consistent with the findings of May et al. (2025), who emphasized the significance of organizational competencies and technological readiness in the digital transformation of SMEs.

This study identifies barriers to adoption, specifically cost justification, which negatively correlates with organizational readiness and support from top management. This finding aligns with the work of Mohan and Ali (2019), who indicated that financial constraints and insufficient digital skills hinder the adoption of internet marketing and e-commerce by Indian MSMEs. The ANOVA results indicate that enterprise size affects perceptions of digital marketing adoption factors, with larger enterprises more inclined to view digital marketing as advantageous, likely attributable to superior resource availability and infrastructure.

Factor analysis indicates that technological readiness explains 23.5% of the variance in adoption, highlighting the significance of infrastructure and digital tools. Organizational support and environmental influence account for 19.2% and 14.1%, respectively, underscoring the significance of leadership, employee competencies, and external

market dynamics in promoting adoption. The findings align with the research conducted by Faiz (2024) and Kumar (2025), which indicates that organizational and environmental factors frequently surpass technological factors in the adoption decisions of SMEs.

Conclusion and Recommendations

This research used the Technology-Organization-Environment (TOE) framework to examine the primary facilitators and barriers faced by small and medium-sized firms (SMEs) in India in their efforts to adopt digital marketing. The findings indicate that technological readiness, organizational support, and environmental variables are essential for digital transformation. Nonetheless, challenges such as limited financial resources, inadequate technical expertise, and difficulties in demonstrating value remain prevalent. Large corporations often have an advantage in executing digital marketing strategies owing to their superior resources. Smaller MSMEs have significant challenges in using digital marketing for development and competitiveness. Regression analysis indicates that two primary factors influencing adoption are perceived relative advantage and leadership support. From these findings, it is imperative for governments, industry stakeholders, and SME leaders to emphasize financial support, enhance digital literacy, and invest in accessible digital tools and technology. Government incentives, tax breaks, and public-private partnerships can mitigate the financial challenges that SMEs encounter in the adoption of digital marketing. Furthermore, raising awareness of the advantages of digital marketing, providing training programs, and promoting collaboration within industry networks can improve SMEs' capacity to adopt digital transformation. This study presents a framework aimed at enhancing the digital marketing adoption process within Indian SMEs, thereby facilitating their growth in the competitive global marketplace.

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