

Factors Affecting the Adoption of Digital Marketing Techniques and MSME Performance: An Empirical Study

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Abstract

Industries are classified into two categories, firstly on the utilization of resources (capital goods – plants and machineries) and secondly on the scale of operations (size of production and scale of market). Also, let's understand Consumer goods, Capital goods, Industrial goods. In the modern digital business world, digital marketing techniques have become essential for increasing customer engagement, expanding market reach, and boosting organizational performance. Even if people are aware of the benefits of digital marketing, there are variations on how MSMEs adopted digital marketing. These differences are mostly due to differences in their technological capabilities, organizational readiness, managerial willingness as well as the market external environment. This research looks into what drives use of digital marketing techniques and their effect on MSME performance.

Taking cue from Technology Acceptance Model (TAM), Technology–Organization–Environment (TOE) framework, Resource-Based View (RBV) and Dynamic Capability Theory, the study explores the impact of technological competence, perceived usefulness, organizational readiness, management support, competitive pressure and customer orientation on digital marketing adoption. The gathered data from 350 MSME owners and managers were analyzed using quantitative statistical techniques. The study shows that all six antecedent factors significantly and positively influence digital marketing adoption. Technological competence is the strongest predictor. The findings also confirm that the adoption of digital marketing positively impacts the performance of MSMEs in the areas of business expansion, customer capture,

operational efficiencies and market expansion. The research addresses the literature on entrepreneurship and digital transformation by offering a unified explanation of the digital marketing onboarding of MSMEs and demonstrating its strategic significance for enterprise performance. The results are beneficial to entrepreneurs, policy-makers and business development agencies looking to fortify MSME's digital capacity and competitiveness in the digital economy. MSMEs can certainly enhance their performance through the adoption of digital marketing to lead sustainable growth and performance.

Keywords:

MSMEs; Digital Marketing Adoption; Entrepreneurial Performance; Technological Competence; Organizational Readiness; Management Support; Competitive Pressure; Customer Orientation; Business Growth; Digital Transformation

1. Introduction

The contribution of Micro, Small and Medium Enterprises (MSMEs) to economic growth, the dynamism of entrepreneurs, job creation generation and promoting innovation is widely recognized in developing and developed economies.

As the business world transitions towards digitalisation, the entrepreneurial firms must continuously adapt their business model, market engagement and value creating strategy to remain competitive and grow.

The fast spread of digital technologies has changed how companies interact with consumers, create market relationships, and pursue entrepreneurial opportunities. As a result, digital marketing is an essential strategic tool for MSMEs in developing

market visibility, strengthening customer interaction and enhancing organizational performance (Kannan & Li, 2017; Dwivedi et al., 2021; Chaffey & Ellis-Chadwick, 2022).

Marketing professionals now communicate with technology as well as customers. It includes promoting services using the internet. Similarly, digital marketing is a technology-enabled marketing that helps in business promotion. Moreover, it includes social media marketing, SEO, content marketing, online advertising, mobile marketing, and customer analytics. Digital marketing allows for interaction that conventional marketing approaches do not provide. It helps customer engagement in a personalized way and uses data for decision making, allowing entrepreneurial firms to compete more effectively in challenging environments (Kaplan & Haenlein, 2010; Tiago & Veríssimo, 2014; Kotler et al., 2021). Digital platforms are now open to MSMEs, which have also made it easier for them to cross resource limitations as well as geographical boundaries. Past research shows that firms using digital marketing technology are more likely to achieve better customer acquisition, brand awareness, operational efficiency, and business growth (Ainin et al., 2015; Taiminen & Karjaluo, 2015; Ahmad et al., 2019).

While the benefits of digital marketing are acknowledged but still not adopted by all MSMEs. Some enterprises have been able to incorporate digital technologies into their strategy but others are struggling to implement them. Many barriers are linked to a lack of technological know-how, poor organizational resources, weak management commitment, and uncertainty about the value of digital technologies (Oliveira & Martins, 2011; Chatterjee et al., 2021; Gao et al., 2023). The adoption process is complicated due to firms being heterogeneous in terms of technological readiness, management ability, finance and market orientation. MSMEs greatly differ in this aspect. This means that the factors influencing adoption of digital marketing has become an important area of interest in entrepreneurship and small business research. Theoretical perspectives on technology adoption provide important insights into the factors shaping an organization's decision to implement digital marketing. The Technology Acceptance Model (TAM) argues that perceived usefulness and perceived ease of use

significantly influence the adoption of technological innovations (Davis, 1989). Likewise, the Venkatesh et al. (2003; Venkatesh et al. (2012) Unified Theory of Acceptance and Use of Technology (UTAUT) model states that the acceptance of technology is impacted by performance, facilitating conditions and social influences. According to the Technology-Organization-Environment (TOE) framework at the organizational level, technological factors, organizational characteristics, and environmental factors jointly determine innovation adoption decisions (Tornatzky & Fleischer, 1990; Oliveira & Martins, 2011). Findings from the literature indicated that technological capability, organizational readiness management support, competitor pressure, and customer orientation could influence the MSME adoption of digital marketing techniques.

From the viewpoint of an entrepreneur, the adoption of digital marketing may be envisaged as the strategic capability of a firm to identify opportunities, mobilise resources and effectively respond. Resource-Based View (RBV) theory claims firms develop valuable, rare, and imperfectly imitable resources to achieve sustained competitive advantage (Barney, 1991). Capabilities in information technology, such as competencies in digital marketing, are strategic resources that bolster performance. Also, there are rapidly changing environments. Dynamic Capabilities Theory suggests that to remain competitive, firms must integrate, reconfigure, and renew existing capabilities (Teece et al., 1997; Wang & Ahmed, 2007). Capabilities in digital marketing are therefore a vital entity through which an entrepreneurial firm can enhance agility, innovation and market responsiveness. Recent literature has increasingly recognized the impact of digitalization on entrepreneurial performance and organizational competitiveness. Studies in digital entrepreneurship illustrate how firms use digital technologies to capitalise on new business opportunities, enhance customer experience, and ultimately achieve superior growth outcomes (Nambisan, 2017; Kraus et al., 2019). In a similar vein, studies on digital transformation find that firms high in digital capabilities are better able to improve performance, innovation, and strategic flexibility (Verhoef et al., 2021; Beliaeva et

al., 2024; Khin et al., 2025). Research further indicates that the performance of SMEs operating in dynamic market environments is significantly affected by their digital orientation and the corresponding digitalization initiatives.

While literature has recognized an important role of digital transformation within firms and technology adoption by firms, there still exist some important gaps. To begin with, the research we currently have engages with digital technologies generally and not so much on the adoption of digital marketing by MSMEs. Moreover, in empirical studies, much emphasis is on technology factor while there is little attention on organizational as well as the environmental factor. The antecedents of digital marketing adoption and its implications for MSME performance in an entrepreneurship-oriented context has only received limited attention across studies. Tackling such gaps is crucial because entrepreneurial firms face increasing digitalisation and rely more and more on digital capabilities to maintain competitiveness and long-term growth in markets that are increasingly connected digitally.

In light of this, the current study looks at the factors that affect the adoption of digital marketing techniques and the impact of MSME performance. In particular, the evaluation of technological competence, perceived usefulness, organizational readiness, management support, competitive pressure, and customer orientation on digital marketing adoption are analysed. It also measures the amount to which digital marketing adoption affects performance of MSME. This study may additionally add knowledge to the area of digital entrepreneurship and MSME development by linking technology adoption theory to entrepreneurship as well as resource-based and dynamic capability perspectives. The results are envisaged to have useful implications for entrepreneurs, policy-makers and business support institutions on improving MSMEs' digital competitiveness and sustainable growth amid the growing digital economy.

1.1 Research Objectives

This research is focused on determining what affects Micro, Small and Medium Enterprises' (MSME's) use of digital marketing strategies as well as examining how using these digital

marketing strategies may affect their overall performance. This research will measure these objectives; first, the effect of technological ability has on the acceptance of digital marketing for MSME's; second, the extent to which perceived advantages have an impact on MSME's acceptance of Digital Mediated Marketing Systems (DMMS); third, whether there is a relationship between being ready organizationally and adopting DMMS; fourth, whether the level of support from management affects an MSME's ability to successfully adopt DMMS; fifth, the extent to which competitive pressures exist when determining whether MSME's will adopt DMMS; sixth, if there is any connection between how well oriented to their customers the enterprises are and the adoption success of DMMS; seventh, to what extent do enterprises gain or lose through the use of DMMS as measured by: growth rate, new customers, operational efficiencies, or by expanding their market..

2. Review of Literature

2.1 Digital Marketing Adoption in MSMEs

The ever-growing reach and accessibility of digital technologies have changed the competitive landscape of the MSMEs industries. Digital marketing has become a critical strategic process by which entrepreneurial firms communicate with customers, broaden their market reach and improve business performance. In contrast to the classical marketing methods relying on hands-on interaction and mass-channel communication, through digital marketing firms are capable of engaging customers through interactive, data-led, and efficient communication (Kannan & Li, 2017; Kotler et al., 2021). MSMEs that are constrained by limited resources, can use digital marketing opportunities to overcome geographical limitations, increase customer reach and enhance competitiveness in the market. Studies have shown that using digital marketing technology has a positive impact on the acquiring customers, branding, and growth stories. The study by Ainin et al. (2015) has revealed that the use of social media significantly enhances the organizational performance. According to Taiminen and Karjaluo (2015), digital marketing channels help the market development and customer relationship development of SMEs.

According to Ahmad et al. (2019), the performance outcomes of businesses that use digital marketing tools are better than those that only use traditional promotion.

Recent studies keep reaffirming the strategic value of digital marketing for entrepreneurial ventures. According to research, the adoption of digital marketing enhances a company's marketing effectiveness, but also enhances its organizational resilience, innovation capabilities and future competitiveness. A growing number of digital experiences from the developing world suggest that digital technologies are vital enablers of MSME sustainability and growth in an increasingly digital world.

2.2 Theoretical Perspectives on Digital Marketing Adoption

A theoretical grounding is provided by technology adoption research for what determines the implementation of Digital Marketing. According to the Technology Acceptance Model (TAM) proposed by Davis (1989), acceptance of technology is determined significantly by perceived usefulness and perceived ease of use. The model has been greatly used in research on adoption of digital technologies in organizational contexts.

The Unified Theory of Acceptance and Use of Technology (UTAUT) takes the TAM model a step further according to Venkatesh et al. (2003) and Venkatesh et al. (2012). The model proposes that there are four major determinants of technology acceptance. These are (i) performance expectancy, (ii) effort expectancy, (iii) facilitating conditions, and (iv) social influence. These viewpoints imply that managers' perception of the usefulness and the practicality of digital marketing technologies drive their adoption decision in the MSME sector.

The Technology–Organization–Environment (TOE) framework which was developed by Tornatzky and Fleischer (1990) is not only one of the most widely applied models explaining technology adoption but it is also at the organizational level. The framework suggests that technological features, organizational competencies, and environmental pressures influence the organization's adoption behavior. According to several studies investigating the digitalization of SMEs, the TOE framework has been successfully utilized to explain the

decision-making regarding the adoption of digital marketing and e-business (Oliveira & Martins, 2011; Chatterjee et al., 2021). The latest empirical evidence suggests that technology readiness, organizational capability, competitive pressure and customer expectations are critical motivations for digital marketing adoption among MSMEs.

2.3. Technological Competence and Perceived Usefulness

Technological competency encompasses an organisation's capacity to successfully acquire, deploy and make constructive use of a range of technical resources. Empirical evidence indicates that technological capability is an indispensable variable that must be present for a successful digital transformation initiative (Bharadwaj, 2000; Zhu et al., 2006). Organisations with sufficient technological infrastructure and digital skills and know-how to benefit collaboratively are more likely to adopt new marketing technologies with the goal of extracting strategic value from those technologies. In addition to the aforementioned aspects, one significant determinant of an organisation's adoption of technology relates to perceived usefulness. According to the Technology Acceptance Model, organisations will be more inclined to adopt a technology if their decision-makers perceive that the adoption of the technology will result in improved business performance (Davis, 1989). For micro, small and medium-sized enterprises as well, an important consideration for adhering to digital marketing-related decisions is the extent to which there will be an improved reach to customers, improved performance in terms of sales and the increased efficiency of operations. Empirical evidence from recent studies supports the contention that the perceived business value and competitive advantage associated with the use of digital technologies are key drivers of digital technology adoption among small firms.

2.4. Organizational Readiness and Management Support

Organizational readiness is the extent to which an organization has the financial resources, technical infrastructure, skilled people, and internal processes needed to implement new technology. Prior research on readiness for technology has shown that it significantly

affects whether a firm can adopt and integrate digital technologies into its operations. Additionally, SMEs that have more resources and whose internal capabilities are stronger have typically been found to have higher rates of success in adopting technology and digitally transforming their businesses (Oliveira & Martins, 2011; Chatterjee et al., 2021).

Another important factor that influences the adoption of a new technology is management support. The role of the leader as an entrepreneur is critical when it comes to allocating resources, enabling innovation, and facilitating change in the organization. Organizations where top management has made a significant investment in digitalization will tend to make greater investments in digital marketing initiatives and overcome barriers to implementing them. Recent studies indicate that leadership orientation and strategic commitment are important factors contributing to the success of digital transformation in MSME enterprises.

2.5.Competitive Pressure and Customer Orientation

Organizational adoption decisions are influenced by environmental factors. When firms feel the need to react against competitors' technology initiatives and marketing strategies. The competition environment of firms leads firms to innovate (Porter, 1985) to sustain their competitive advantage. In particular, increasing competition in MSME markets is causing the implementation of digital marketing techniques for visibility, engagement, and market matching. Customer orientation influences adoption of digital marketing. Firms increasingly realise that customers expect information to be available immediately, personal communication, and seamless digital access. As a result, MSMEs are pressured to adopt digital platforms and customer-centric marketing technologies. Evidence from studies shows that customer expectations and competitive pressure positively influence the adoption of digital technologies by entrepreneurial firms.

2.6 Digital Marketing Adoption and MSME Performance

Increasingly more research indicates that digital marketing adoption positively

contributes to the performance of organizations. Firms' marketing capabilities developed through digital technologies may help improve customer relationships, build brand equity or enhance sales performance (Day, 2011; Morgan, 2012). Using digital marketing, marketing resources can be distributed much more efficiently, thus making them more cost-effective and efficient.

Digital marketing capabilities as a valuable resources according to the Resource-Based View (RBV) contribute to sustained competitive advantage (Barney, 1991) In the same way Dynamic Capability Theory suggests, firms that can integrate and reconfigure digital resources are likely to achieve superior performance (Teece et al., 1997 Wang & Ahmed, 2007). Recent research shows that having a bearing on digital orientation, digital capability, and digital transformation generates innovation, competitiveness and business performance among SMEs.

In addition, recent data show that many MSMEs see growth and improvement to business and operations after adopting digital technologies and practices of digital business. Digital adoption is increasingly viewed as a strategic enabler of entrepreneurial resilience and sustainable development.

2.7 Research Gap

Various studies have highlighted the significance of digital technologies for the performance of entrepreneurs. Initially, many studies generally look at digital transformation without specifically looking at the drivers of digital marketing adoption. Moreover, the previous studies have considered and investigated only few technological or organizational factors, but not all together. For example, technological competence, perceived usefulness, organizational readiness, management support, competitive pressure and customer orientation. Moreover, empirical evidence demonstrating how these adoption determinants relate to MSME performance is scarce, said entrepreneurship literature. Ultimately, digital transformation and the new digital marketing tools are running ahead of investigations. Today's entrepreneurial ecosystem has not been addressed in research yet.

The current study aims to address the gaps and in the process formulates and empirically test

an integrated framework that investigates the impact of technological competence, perceived usefulness, organizational readiness, management support, competitive pressure, and customer orientation on digital marketing adoption and resulting MSME performance.

3. Conceptual Framework and Hypotheses Development

The rising advent of digital technologies in entrepreneurial activities has changed the way MSMEs create value, connect with customers and enhance business growth in a step. As digital marketing emerges as a capacity for firms, so too do the involvement of the owner-manager and the strategic management of the broad environment in creating competitiveness. Relying on Technology Acceptance Model (TAM), the Unified Theory of Acceptance and Use of Technology (UTAUT), Technology–Organization–Environment (TOE), Resource-Based View (RBV) and Dynamic Capability Theory, this research proposes an integrated framework for explaining how technological, organisational and environmental factors influence the adoption of digital marketing techniques and ultimately the performance of MSME.

According to the framework, there are antecedents of digital marketing adoption which are technological competence, perceived usefulness, organizational readiness, management support, competitive pressure and customer orientation. The adoption of digital marketing will enhance the performance of entrepreneurs and organizations in terms of customer engagement, market reach, organizational effectiveness, and business growth.

3.1 Technological Competence and Digital Marketing Adoption

Technological competence refers to the knowledge, skills, infrastructure, and technological capabilities that enable firms to acquire, implement, and utilize digital technologies effectively. Within MSMEs, the availability of technological expertise significantly influences the ability to integrate digital tools into business operations. Firms possessing stronger technological capabilities are generally more confident in experimenting with innovative technologies and are better equipped to manage the complexities associated with digital transformation.

From the perspective of the TOE framework, technological readiness constitutes a critical prerequisite for successful innovation adoption. Similarly, the RBV suggests that technology-related competencies represent valuable organizational resources that can facilitate competitive advantage. MSMEs with adequate technological infrastructure and digital expertise are therefore more likely to adopt digital marketing techniques and leverage their potential benefits.

H1: Technological competence positively influences the adoption of digital marketing techniques among MSMEs.

3.2. Perceived Usefulness and Digital Marketing Adoption

Perceived usefulness refers to the degree to which decision-makers believe that the use of a particular technology will improve organizational performance. According to TAM, perceived usefulness is one of the most influential determinants of technology acceptance and usage. When entrepreneurs perceive that digital marketing can enhance customer acquisition, improve communication effectiveness, increase sales, and strengthen market visibility, they are more likely to support its implementation.

For MSMEs, investment decisions are often driven by expected business outcomes because resource constraints necessitate careful allocation of available resources. Consequently, favorable perceptions regarding the performance benefits of digital marketing are expected to increase adoption intentions and actual implementation.

H2: Perceived usefulness positively influences the adoption of digital marketing techniques among MSMEs.

3.3. Organizational Readiness and Digital Marketing Adoption

Organizational readiness reflects the extent to which a firm possesses the financial resources, technological infrastructure, human capital, and internal systems necessary to implement technological innovations. Successful adoption of digital marketing requires not only technological tools but also organizational capabilities that support their effective utilization.

The TOE framework emphasizes organizational readiness as a central determinant of innovation adoption. Firms

with stronger internal preparedness are better positioned to allocate resources, develop employee competencies, and integrate digital marketing activities into broader business strategies. Conversely, inadequate organizational readiness may create implementation barriers and reduce the likelihood of successful adoption.

H3: Organizational readiness positively influences the adoption of digital marketing techniques among MSMEs.

3.4 Management Support and Digital Marketing Adoption

Management support refers to the commitment, encouragement, and strategic involvement of organizational leaders in the adoption and implementation of technological innovations. In MSMEs, entrepreneurial leaders frequently play a decisive role in shaping organizational priorities and determining resource allocation.

Digital marketing initiatives often require investments in technology, employee training, and process redesign. Such investments are unlikely to occur without active managerial endorsement. Entrepreneurial leaders who recognize the strategic value of digital marketing are more likely to encourage experimentation, facilitate organizational learning, and foster a culture supportive of digital transformation.

H4: Management support positively influences the adoption of digital marketing techniques among MSMEs.

3.5 Competitive Pressure and Digital Marketing Adoption

Competitive pressure refers to the extent to which firms perceive external market forces and rival actions as motivating the adoption of new technologies. In increasingly digital marketplaces, competitors frequently utilize online platforms to enhance customer engagement, strengthen brand visibility, and expand market reach.

According to the TOE framework, environmental pressures significantly influence organizational innovation decisions. MSMEs operating in highly competitive environments may experience greater urgency to adopt digital marketing techniques to maintain competitiveness and avoid strategic disadvantages. As competitors increasingly

embrace digital channels, firms may perceive adoption as necessary for survival and growth.

H5: Competitive pressure positively influences the adoption of digital marketing techniques among MSMEs.

3.6 Customer Orientation and Digital Marketing Adoption

Customer orientation reflects an organization's commitment to understanding and responding to customer needs, preferences, and expectations. Digital technologies have significantly altered customer behavior, creating demand for immediate communication, personalized experiences, and continuous online interaction.

Entrepreneurial firms that prioritize customer satisfaction are more likely to adopt digital marketing techniques because such technologies facilitate customer engagement, relationship development, and market responsiveness. By enabling firms to collect customer insights and communicate efficiently, digital marketing supports the development of stronger customer relationships and enhanced value creation.

H6: Customer orientation positively influences the adoption of digital marketing techniques among MSMEs.

3.7 Digital Marketing Adoption and MSME Performance

MSME performance encompasses outcomes related to business growth, profitability, customer acquisition, operational efficiency, market expansion, and overall organizational success. Digital marketing adoption can improve performance by enabling firms to reach broader audiences, strengthen customer relationships, enhance brand recognition, and optimize marketing activities.

The RBV suggests that digital marketing capabilities can function as strategic resources that generate superior performance outcomes. Likewise, Dynamic Capability Theory argues that firms capable of integrating and reconfiguring digital resources are better positioned to respond to environmental changes and exploit emerging opportunities. Through enhanced market intelligence, customer engagement, and strategic flexibility, digital marketing adoption is expected to contribute positively to entrepreneurial and organizational performance.

H7: Adoption of digital marketing techniques positively influences MSME performance.

3.8 Proposed Conceptual Framework

Based on the foregoing theoretical arguments, the study proposes a conceptual framework in which technological competence, perceived usefulness, organizational readiness, management support, competitive pressure, and customer orientation serve as antecedents of digital marketing adoption. Digital marketing adoption subsequently influences MSME performance.

Independent Variables

- Technological Competence
- Perceived Usefulness
- Organizational Readiness
- Management Support
- Competitive Pressure
- Customer Orientation

↓

Mediating/Endogenous Variable

- Digital Marketing Adoption

↓

Dependent Variable

- MSME Performance

The proposed framework integrates technology adoption theories with entrepreneurship and strategic management perspectives to explain how digital marketing adoption contributes to entrepreneurial success and organizational performance among MSMEs.

4. Research Methodology

4.1 Research Design

The present study adopts a quantitative research approach to examine the factors influencing the adoption of digital marketing techniques and their subsequent impact on MSME performance. A quantitative design is considered appropriate because the study seeks to empirically test theoretically derived relationships among multiple constructs and evaluate the magnitude and direction of these relationships using statistical techniques. The study follows a cross-sectional survey design in which data are collected from MSME owners and managers at a single point in time. This design enables the systematic examination of adoption determinants and organizational outcomes within the context of entrepreneurial firms operating in a rapidly evolving digital environment.

The conceptual framework developed in this study proposes that technological competence,

perceived usefulness, organizational readiness, management support, competitive pressure, and customer orientation influence the adoption of digital marketing techniques, which in turn affects MSME performance. The research design facilitates the testing of these relationships through a structured empirical investigation.

4.2 Population and Sampling

The target population comprises owners, founders, managing partners, chief executives, and senior managers of Micro, Small, and Medium Enterprises. These individuals are selected because they are directly involved in strategic decision-making and possess adequate knowledge regarding the technological practices, marketing activities, and business performance of their enterprises.

A purposive sampling approach is employed to identify respondents who meet the eligibility criteria of having managerial responsibility and familiarity with digital marketing activities within their organizations. Since the study focuses on digital marketing adoption, respondents are expected to possess sufficient understanding of technological and marketing decisions undertaken by their enterprises.

For structural equation modelling, an adequate sample size is necessary to ensure statistical reliability and model stability. Consistent with methodological recommendations for multivariate analysis, a minimum sample exceeding 200 responses is considered appropriate. The study therefore targets approximately 300 respondents to improve statistical power and enhance the generalizability of findings.

4.3 Data Collection Procedure

Primary data are collected using a structured questionnaire administered to MSME owners and managers. The questionnaire is distributed through both online and offline modes to maximize participation and ensure broader coverage of enterprises operating across different sectors.

Prior to the main survey, the questionnaire is subjected to expert evaluation to assess clarity, content relevance, and contextual suitability. A pilot study involving a small group of respondents is conducted to identify ambiguities and improve instrument quality. Feedback obtained during the pilot phase is

incorporated into the final version of the questionnaire.

Participation in the study is voluntary, and respondents are informed about the academic purpose of the research. Confidentiality and anonymity are maintained throughout the data collection process to encourage accurate and unbiased responses.

4.4 Measurement of Variables

The study utilizes a structured measurement instrument consisting of multiple-item scales adapted from established literature on technology adoption, digital marketing, entrepreneurship, and organizational performance. All constructs are operationalized as reflective variables and measured using a five-point Likert scale ranging from 1 ("Strongly Disagree") to 5 ("Strongly Agree").

Technological Competence

Technological competence refers to the organization's ability to acquire, manage, and utilize digital technologies effectively. The construct captures the availability of technological infrastructure, digital expertise, and technology-related capabilities within the enterprise.

Perceived Usefulness

Perceived usefulness reflects the extent to which decision-makers believe that digital marketing techniques improve business effectiveness, customer engagement, and organizational performance.

Organizational Readiness

Organizational readiness measures the availability of financial resources, technological infrastructure, human competencies, and internal support mechanisms required for digital marketing implementation.

Management Support

Management support represents the degree of commitment demonstrated by organizational leaders toward the adoption and implementation of digital marketing initiatives.

Competitive Pressure

Competitive pressure assesses the influence of market competition and rival activities on the

firm's decision to adopt digital marketing technologies.

Customer Orientation

Customer orientation evaluates the extent to which the enterprise prioritizes customer needs, preferences, and expectations in its strategic and operational activities.

Digital Marketing Adoption

Digital marketing adoption refers to the extent to which the enterprise utilizes digital marketing tools and platforms such as social media marketing, online advertising, content marketing, search engine optimization, email marketing, and customer analytics.

MSME Performance

MSME performance captures organizational outcomes related to business growth, customer acquisition, operational efficiency, market expansion, profitability, and overall business success.

4.5 Reliability and Validity Assessment

To ensure measurement quality, reliability and validity assessments are conducted prior to hypothesis testing. Internal consistency reliability is evaluated using Cronbach's alpha and Composite Reliability (CR) coefficients. Values exceeding recommended threshold levels indicate acceptable reliability.

Convergent validity is assessed through factor loadings and Average Variance Extracted (AVE). Factor loadings above the acceptable threshold and AVE values greater than 0.50 indicate adequate convergent validity. Discriminant validity is examined using the Fornell–Larcker criterion and the Heterotrait–Monotrait Ratio (HTMT) to confirm that each construct is empirically distinct from other constructs included in the model.

4.6 Data Analysis Techniques

Data analysis is performed using a combination of descriptive and multivariate statistical techniques. Initially, descriptive statistics are employed to summarize respondent characteristics and provide an overview of the study variables.

Subsequently, Partial Least Squares Structural Equation Modeling (PLS-SEM) is utilized to evaluate the measurement and structural models. PLS-SEM is particularly suitable for entrepreneurship and management research

because it facilitates the simultaneous examination of multiple relationships among latent constructs and accommodates complex theoretical models.

The analytical procedure involves two stages. The first stage focuses on the assessment of the measurement model through reliability and validity evaluation. The second stage examines the structural model by estimating path coefficients, coefficients of determination (R^2), effect sizes (f^2), predictive relevance (Q^2), and hypothesis-testing results.

Bootstrapping procedures with a large number of resamples are employed to determine the statistical significance of the hypothesized relationships. The results provide empirical evidence regarding the influence of technological competence, perceived usefulness, organizational readiness, management support, competitive pressure, and customer orientation on digital marketing adoption, as well as the impact of digital marketing adoption on MSME performance.

4.7 Ethical Considerations

The study adheres to established ethical principles governing academic research. Participation is entirely voluntary, and respondents are informed about the objectives of the study before data collection. No personally identifiable information is disclosed, and all responses are treated confidentially. The collected data are used exclusively for academic purposes and reported only in aggregated form. These procedures ensure the protection of respondent privacy and enhance the credibility of the research process.

5. Data Analysis and Results

5.1 Respondent Profile

A total of 350 valid responses were obtained from MSME owners and managers operating across manufacturing, service, trading, and technology-oriented enterprises. The demographic profile indicates that 61.4% of respondents were male and 38.6% were female. Approximately 46.9% of respondents were between 31 and 40 years of age, while 28.6% belonged to the 41–50 age group. With respect to educational qualifications, 58.3% possessed undergraduate degrees and 27.1% held postgraduate qualifications.

The reliability coefficients suggest strong internal consistency among measurement items.

5.3 Confirmatory Factor Assessment

Regarding enterprise characteristics, 48.0% of firms were categorized as micro enterprises, 34.6% as small enterprises, and 17.4% as medium enterprises. The majority of firms had been operating for more than five years, indicating substantial business experience among the sampled enterprises.

Table 1. Demographic Characteristics of Respondents

Variable	Category	Frequency	Percentage
Gender	Male	215	61.4
	Female	135	38.6
Age	Below 30 years	62	17.7
	31–40 years	164	46.9
	41–50 years	100	28.6
	Above 50 years	24	6.8
Enterprise Type	Micro	168	48.0
	Small	121	34.6
	Medium	61	17.4

5.2 Reliability Analysis

Internal consistency reliability was assessed using Cronbach's alpha coefficients. The results indicate that all constructs exceeded the recommended threshold value of 0.70, demonstrating satisfactory reliability.

Table 2. Reliability Statistics

Construct	Number of Items	Cronbach's Alpha
Technological Competence	5	0.864
Perceived Usefulness	5	0.881
Organizational Readiness	5	0.852
Management Support	5	0.878
Competitive Pressure	4	0.831
Customer Orientation	5	0.887
Digital Marketing Adoption	6	0.903
MSME Performance	6	0.894

Composite Reliability (CR) and Average Variance Extracted (AVE) were evaluated to establish convergent validity. All CR values The measurement model therefore demonstrates satisfactory psychometric properties.

exceeded 0.70 and all AVE values were above 0.50, indicating acceptable convergent validity.

Table 3. Convergent Validity Assessment

Construct	CR	AVE
Technological Competence	0.901	0.647
Perceived Usefulness	0.912	0.676
Organizational Readiness	0.893	0.625
Management Support	0.907	0.661
Competitive Pressure	0.874	0.635
Customer Orientation	0.915	0.683
Digital Marketing Adoption	0.928	0.684
MSME Performance	0.921	0.661

5.4 Discriminant Validity Assessment

Table 4. Fornell–Larcker Criterion for Discriminant Validity

Construct	TC	PU	OR	MS	CP	CO	DMA	MP
Technological Competence (TC)	0.804							
Perceived Usefulness (PU)	0.542	0.822						
Organizational Readiness (OR)	0.487	0.518	0.791					
Management Support (MS)	0.461	0.532	0.594	0.813				
Competitive Pressure (CP)	0.373	0.421	0.406	0.448	0.797			
Customer Orientation (CO)	0.435	0.498	0.452	0.521	0.438	0.827		
Digital Marketing Adoption (DMA)	0.649	0.672	0.618	0.645	0.531	0.589	0.827	
MSME Performance (MP)	0.584	0.602	0.548	0.593	0.467	0.525	0.721	0.813

Note: Diagonal elements (bold) represent the square root of the Average Variance Extracted (AVE) for each construct, while off-diagonal elements represent inter-construct correlations. Discriminant validity is established when the square root of AVE for each construct exceeds its correlations with all other constructs.

5.4 Correlation Analysis

Pearson correlation analysis was conducted to examine relationships among the study variables.

Table 5. Correlation Matrix

Variable	TC	PU	OR	MS	CP	CO	DMA	MP
TC	1.000							
PU	0.542	1.000						
OR	0.487	0.518	1.000					
MS	0.461	0.532	0.594	1.000				
CP	0.373	0.421	0.406	0.448	1.000			
CO	0.435	0.498	0.452	0.521	0.438	1.000		
DMA	0.649	0.672	0.618	0.645	0.531	0.589	1.000	
MP	0.584	0.602	0.548	0.593	0.467	0.525	0.721	1.000

All independent variables exhibit positive associations with digital marketing adoption and MSME performance.

5.5 Hypothesis Testing

Predictor	Beta	t-value	p-value
Technological Competence	0.281	5.874	<0.001
Perceived Usefulness	0.247	5.193	<0.001
Organizational Readiness	0.198	4.352	<0.001
Management Support	0.213	4.678	<0.001
Competitive Pressure	0.141	3.012	0.003
Customer Orientation	0.176	3.926	<0.001

$R^2=0.694$

Adjusted $R^2=0.688$

$F = 129.476$ ($p < 0.001$)

The findings indicate that all six antecedent variables significantly influence digital marketing adoption. Technological competence emerged as the strongest predictor, followed by perceived usefulness and management support.

Multiple regression analysis was employed to evaluate the determinants of digital marketing adoption.

Table 6. Determinants of Digital Marketing Adoption

5.6 Impact of Digital Marketing Adoption on MSME Performance

A separate regression model examined the influence of digital marketing adoption on MSME performance.

Table 7. Effect of Digital Marketing Adoption on MSME Performance

Predictor	Beta	t-value	p-value
Digital Marketing Adoption	0.721	18.634	<0.001

$R^2=0.520$

Adjusted $R^2=0.518$

$F = 347.227$ ($p < 0.001$)

The results reveal a strong positive relationship between digital marketing adoption and MSME performance. Enterprises exhibiting higher levels of digital marketing adoption reported superior business growth, enhanced customer acquisition, improved operational efficiency, and stronger market performance.

5.7 Discussion of Findings

The empirical findings support the proposition that technological, organizational, and environmental factors jointly influence digital marketing adoption among MSMEs. Consistent with technology adoption theories, technological competence and perceived usefulness significantly encourage adoption decisions. The findings further demonstrate the importance of organizational readiness and management support, highlighting the strategic role of entrepreneurial leadership in digital transformation initiatives.

Competitive pressure and customer orientation also positively influence adoption behavior, indicating that external market forces encourage firms to embrace digital marketing technologies. Furthermore, digital marketing adoption exerts a substantial positive effect on MSME performance, supporting Resource-Based View and Dynamic Capability perspectives that regard digital capabilities as valuable strategic resources.

Overall, the findings suggest that successful digital marketing adoption enhances entrepreneurial competitiveness, market responsiveness, and organizational growth, thereby strengthening the long-term sustainability of MSMEs in digitally evolving business environments.

6. Discussion

The objective of this study was to investigate the determinants of digital marketing adoption among Micro, Small, and Medium Enterprises (MSMEs) and to examine the implications of such adoption for enterprise performance. The findings demonstrate that digital marketing

adoption is influenced by a combination of technological, organizational, and environmental factors and that the effective utilization of digital marketing techniques contributes positively to MSME performance. These results provide important insights into how entrepreneurial firms develop and deploy digital capabilities to achieve competitive and growth-related outcomes in increasingly digitalized markets.

The findings indicate that technological competence significantly influences digital marketing adoption. MSMEs possessing stronger technological infrastructure, digital knowledge, and information technology capabilities exhibit a greater propensity to integrate digital marketing into their business operations. This finding supports the Resource-Based View, which argues that organizational capabilities constitute strategic resources capable of generating competitive advantage (Barney, 1991). Digital competence reduces uncertainty associated with technology implementation and enables entrepreneurial firms to utilize digital platforms more effectively. The result also reinforces previous studies emphasizing the importance of technological readiness in facilitating digital transformation among small businesses (Bharadwaj, 2000; Zhu et al., 2006).

Perceived usefulness emerged as another significant predictor of digital marketing adoption. MSME owners and managers appear more willing to invest in digital marketing technologies when they perceive tangible benefits related to customer acquisition, market expansion, operational efficiency, and business growth. This finding is consistent with the Technology Acceptance Model, which identifies perceived usefulness as a central determinant of technology acceptance behavior (Davis, 1989). In entrepreneurial contexts characterized by limited resources and high uncertainty, investment decisions are often guided by expected performance outcomes. Consequently, the perception that digital marketing contributes directly to organizational objectives serves as an important catalyst for adoption.

The results further reveal that organizational readiness plays a crucial role in shaping adoption decisions. Enterprises possessing adequate financial resources, skilled human capital, technological infrastructure, and supportive organizational systems are more

likely to adopt digital marketing techniques successfully. This finding aligns with the organizational dimension of the Technology–Organization–Environment framework, which emphasizes the importance of internal preparedness in facilitating innovation adoption (Tornatzky & Fleischer, 1990). The result suggests that digital marketing adoption is not merely a technological decision but a broader organizational process requiring the alignment of resources, competencies, and strategic priorities.

Management support was also found to exert a significant positive influence on digital marketing adoption. Within MSMEs, owners and senior managers often function as principal decision-makers whose attitudes and strategic orientations shape organizational innovation behavior. The findings indicate that managerial commitment, leadership support, and strategic vision encourage investment in digital marketing initiatives and reduce resistance to technological change. This observation is consistent with entrepreneurship literature highlighting the central role of entrepreneurial leadership in opportunity recognition, resource mobilization, and organizational transformation. Digital adoption therefore appears to depend not only on technological availability but also on the willingness of entrepreneurial leaders to champion innovation-oriented strategies.

The positive relationship between competitive pressure and digital marketing adoption underscores the importance of environmental influences in shaping entrepreneurial behavior. MSMEs operating in highly competitive markets appear more inclined to adopt digital marketing techniques as a means of enhancing visibility, differentiating their offerings, and sustaining market relevance. This finding supports strategic management arguments that external competitive conditions often stimulate organizational innovation and strategic adaptation (Porter, 1985). As digital channels increasingly become standard mechanisms for customer interaction and market communication, entrepreneurial firms may perceive digital marketing adoption as a strategic necessity rather than an optional investment.

Customer orientation also emerged as a significant determinant of digital marketing adoption. Firms demonstrating stronger commitments to understanding customer needs

and developing long-term customer relationships exhibit higher levels of digital marketing implementation. This finding reflects the growing importance of customer-centric strategies within digital business environments. Digital marketing technologies provide firms with enhanced capabilities for customer engagement, personalization, and relationship management, thereby enabling entrepreneurial ventures to respond more effectively to evolving customer expectations. The result suggests that customer-focused enterprises recognize digital marketing as an essential mechanism for delivering value and strengthening market relationships.

One of the most important findings of the study is the significant positive effect of digital marketing adoption on MSME performance. Enterprises that extensively utilize digital marketing techniques report higher levels of business growth, customer acquisition, operational efficiency, and overall organizational performance. This finding supports both Resource-Based View and Dynamic Capability perspectives. Digital marketing capabilities represent valuable organizational assets that enable firms to create and capture value more effectively, while the ability to integrate and utilize digital technologies reflects a dynamic capability that enhances organizational adaptability and responsiveness (Teece et al., 1997). The result confirms that digital marketing adoption contributes not only to marketing effectiveness but also to broader entrepreneurial performance outcomes.

The findings further contribute to the emerging literature on digital entrepreneurship. Existing scholarship suggests that digital technologies facilitate opportunity recognition, innovation, market expansion, and entrepreneurial growth (Nambisan, 2017; Kraus et al., 2019). The present study extends this body of knowledge by demonstrating that digital marketing adoption functions as a critical mechanism through which entrepreneurial firms transform digital capabilities into measurable performance gains. In digitally connected markets, the ability to leverage digital marketing effectively appears to constitute an important entrepreneurial competency that supports both competitiveness and sustainability.

The study also highlights the interdependent nature of technological, organizational, and

environmental influences on digital transformation within MSMEs. Rather than operating independently, these factors collectively shape the conditions under which digital marketing adoption occurs. This multidimensional perspective reinforces the relevance of integrative technology adoption frameworks and suggests that successful digital transformation requires a balanced combination of internal capabilities, managerial commitment, competitive responsiveness, and customer-focused strategies.

Taken together, the findings indicate that digital marketing adoption represents a strategically significant pathway through which MSMEs can strengthen entrepreneurial performance in contemporary business environments. The evidence suggests that firms capable of developing technological competence, fostering organizational readiness, securing managerial support, responding proactively to competitive pressures, and maintaining strong customer orientation are better positioned to leverage digital marketing for sustainable growth and competitive advantage. These findings enrich entrepreneurship research by providing empirical evidence on the mechanisms through which digital capabilities contribute to MSME success in the digital economy.

7. Conclusion and Implications

7.1 Conclusion

The increasing digitalization of business activities has fundamentally transformed the competitive environment in which Micro, Small, and Medium Enterprises (MSMEs) operate. In this context, digital marketing has emerged as an important strategic mechanism that enables entrepreneurial firms to strengthen customer engagement, expand market reach, improve operational effectiveness, and enhance overall business performance. The present study investigated the factors influencing the adoption of digital marketing techniques among MSMEs and examined the subsequent impact of digital marketing adoption on enterprise performance.

The findings demonstrate that digital marketing adoption is shaped by a combination of technological, organizational, and environmental factors. Technological competence, perceived usefulness, organizational readiness, management support, competitive pressure, and customer orientation

were all found to exert significant positive influences on the adoption of digital marketing techniques. These results indicate that successful digital marketing implementation requires not only technological capability but also organizational preparedness, supportive leadership, responsiveness to market conditions, and a strong customer-focused orientation.

The study further reveals that digital marketing adoption contributes significantly to MSME performance. Enterprises that actively utilize digital marketing technologies achieve better outcomes in terms of customer acquisition, business growth, market expansion, operational efficiency, and overall organizational effectiveness. The findings confirm that digital marketing functions as a strategic capability that enables entrepreneurial firms to create value, strengthen competitiveness, and adapt to rapidly changing business environments.

Overall, the study highlights that digital marketing adoption represents an important pathway through which MSMEs can enhance entrepreneurial performance and achieve sustainable growth in an increasingly digital economy. The research underscores the need for MSMEs to develop digital competencies and strategically integrate digital marketing into their business operations to remain competitive in contemporary markets.

7.2 Theoretical Contributions

This study makes several contributions to the literature on entrepreneurship, technology adoption, and digital transformation.

First, the study extends existing knowledge by developing and empirically examining an integrated framework that combines insights from the Technology Acceptance Model (TAM), the Technology–Organization–Environment (TOE) framework, the Resource-Based View (RBV), and Dynamic Capability Theory. By integrating these theoretical perspectives, the research provides a more comprehensive explanation of digital marketing adoption behavior among MSMEs. Second, the study contributes to digital entrepreneurship literature by identifying the technological, organizational, and environmental factors that collectively influence digital marketing adoption. Existing studies often examine individual determinants in isolation; however, the present research demonstrates the

interconnected nature of multiple antecedents operating simultaneously within entrepreneurial firms.

Third, the findings provide empirical support for the proposition that digital marketing capabilities constitute valuable organizational resources that contribute to superior business performance. This strengthens the applicability of RBV and Dynamic Capability perspectives within the context of MSME digitalization and entrepreneurial development.

Finally, the study contributes to the growing body of research examining the relationship between digital transformation and entrepreneurial success by demonstrating that digital marketing adoption serves as an important mechanism through which digital capabilities are translated into measurable performance outcomes.

7.3 Managerial Implications

The findings offer several practical implications for MSME owners, entrepreneurs, and managers seeking to enhance organizational performance through digital technologies.

First, managers should invest in developing technological competence by strengthening digital infrastructure, improving employee digital skills, and encouraging continuous learning related to emerging marketing technologies. Strong technological capabilities facilitate the successful implementation and utilization of digital marketing tools.

Second, organizational leaders should actively communicate the strategic benefits of digital marketing and promote a culture that supports innovation and digital transformation. Managerial commitment plays a critical role in overcoming resistance to change and ensuring the effective allocation of resources toward digital initiatives.

Third, MSMEs should enhance organizational readiness by allocating adequate financial resources, upgrading technological systems, and developing internal competencies necessary for digital marketing implementation. Firms that establish supportive organizational conditions are better positioned to realize the benefits of digital transformation.

Fourth, enterprises should adopt a customer-centric approach by utilizing digital marketing platforms to understand customer preferences, personalize interactions, and strengthen long-

term relationships. Effective customer engagement can improve customer satisfaction, loyalty, and market competitiveness.

Finally, managers should view digital marketing not merely as a promotional activity but as a strategic capability that supports business growth, market expansion, and competitive advantage in dynamic business environments.

7.4 Policy Implications

The findings generate important implications for policymakers, government agencies, and business development institutions responsible for supporting MSME growth and digital transformation.

First, governments should design targeted programs that enhance digital literacy and technological capabilities among MSMEs. Training initiatives, workshops, and digital skills development programs can improve the readiness of entrepreneurs to adopt digital marketing technologies.

Second, policymakers should facilitate access to affordable digital infrastructure and technological resources, particularly for micro and small enterprises that often face resource constraints. Financial assistance schemes, technology grants, and digital adoption incentives may encourage wider implementation of digital marketing practices.

Third, public institutions should strengthen partnerships with industry associations, technology providers, and educational institutions to create supportive ecosystems that promote digital entrepreneurship and innovation.

Fourth, business support agencies should provide advisory services that help MSMEs evaluate digital opportunities, develop digital marketing strategies, and integrate technology into their business models effectively.

By creating an enabling environment for digital transformation, policymakers can enhance the competitiveness, productivity, and long-term sustainability of MSMEs while contributing to broader economic development objectives.

7.5 Limitations

Despite its contributions, the study has several limitations that should be acknowledged.

First, the study adopts a cross-sectional research design, which limits the ability to establish causal relationships and examine

changes in digital marketing adoption over time.

Second, the analysis is based on self-reported responses obtained from MSME owners and managers. Although respondents are knowledgeable about organizational activities, self-reported measures may be subject to response bias and perceptual limitations.

Third, the study focuses primarily on selected technological, organizational, and environmental determinants. Other potentially relevant factors such as entrepreneurial orientation, innovation capability, organizational culture, digital leadership, and environmental uncertainty were not incorporated into the model.

Fourth, the research examines digital marketing adoption at a general level and does not differentiate among specific digital marketing tools such as social media marketing, search engine optimization, influencer marketing, content marketing, or marketing analytics.

Finally, contextual differences across industries and geographical regions may influence digital marketing adoption behavior, thereby limiting the generalizability of the findings to all MSME settings.

7.6 Future Research Directions

The limitations of the present study provide several opportunities for future research.

First, future studies may employ longitudinal research designs to examine how digital marketing adoption evolves over time and how digital capabilities influence long-term entrepreneurial performance.

Second, researchers may investigate additional antecedents of digital marketing adoption, including entrepreneurial orientation, innovation culture, digital leadership, absorptive capacity, organizational learning, and strategic agility.

Third, future research may examine the mediating and moderating mechanisms through which digital marketing adoption affects business performance. Variables such as innovation capability, customer engagement, market orientation, and organizational resilience may provide deeper insights into these relationships.

Fourth, comparative studies across industries, regions, and countries may improve understanding of contextual influences on digital marketing adoption and entrepreneurial outcomes.

Fifth, future investigations may explore specific digital marketing technologies individually to determine their relative effectiveness in improving MSME performance.

Finally, qualitative and mixed-method approaches may complement quantitative findings by providing richer insights into the experiences, challenges, and strategic decision-making processes associated with digital marketing adoption among entrepreneurial firms.

Collectively, these research directions can advance understanding of digital entrepreneurship and contribute to the development of more comprehensive models explaining digital transformation and performance within MSMEs.

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