

Determinants of Digital Marketing Skills among MSME Workforce in Post-COVID India

Akash Prasad¹, Dr Sushil Kumar²

¹PhD Scholar, Department of Management, Birla Institute of Technology, Patna Campus
Email:akashprasad145@gmail.com; <https://orcid.org/0009-0001-8084-0290>

²Assitant Professor, Department of Management, Birla Institute of Technology, Patna Campus
Email:sushilkumar@bitmesra.ac.in, <https://orcid.org/0009-0007-1087-9150>

Abstract

The post-pandemic rapid acceleration of business activities into digital spaces has made digital marketing skills more relevant than ever to the success of small businesses. Although many small businesses are increasingly reliant on digital platforms to interact with customers and expand markets, many still struggle to develop their employees' digital skills, prepare for technological change, and provide adequate organisational resources. This study explores the factors affecting the adoption of digital marketing skills (DMS) in MSMEs in India and the effects of those DMS on the effectiveness of adopting digital marketing (DMAE) practices. Using TAM, RBV, and Dynamic Capabilities theory, this study defines Digital Marketing Skills as a first-order construct composed of five first-order constructs: Content Management, Critical Inquiry, Communication & Collaboration, Identity & Development, and Responsibility. The study uses a quantitative methodology, in which primary data were collected through a structured questionnaire administered to 320 MSME respondents. PLS-SEM is used to analyse the relationships in the proposed model. The results indicate that perceived ease of use, ICT attitude, management support for digital training, technology readiness, and digital training support all have positive relationships to Digital Marketing Skills. Of the predictive variables examined in this study, management support and digital training support emerged as the most significant predictors of workforce-level digital capability. In addition, Digital Marketing Skills had a positive relationship to Digital Marketing Adoption Effectiveness. Therefore, digitally skilled MSMEs may have greater customer interaction, access to new markets, business growth, and competitive advantages. This study provides additional theoretical and practical relevance to both the literature on MSMEs and on digital transformations by establishing Digital Marketing Skills as a multidimensional higher-order construct rather than an independent variable.

Keywords: Digital Marketing Skills; MSMEs; Digital Marketing Adoption; Technology Acceptance Model; Technology Readiness; Management Support; Digital Transformation; PLS-SEM; Post-COVID Business; Emerging Economies

1.0 Introduction

In today's digital transformation, businesses are using digital communication and marketing techniques to grow. One technique that is being used is digital marketing. According to Dwivedi et al. (2021), Chatterjee et al. (2022), and Kannan (2022), small and medium-sized businesses can be assisted with utilising social media marketing, optimising their website so they will show up when someone searches for them, advertising online, and creating an interactive experience with customers.

Micro, Small, and Medium Enterprises (MSMEs) provide the largest number of jobs, create new

products and services, drive regional economic development, and make emerging markets more resilient. Despite the large number of jobs provided, there are still many barriers, including a lack of technological preparedness, a lack of digital knowledge among workers, and a lack of the capacity to build a digital presence. Due to the increased reliance on digital systems after COVID-19, demand for employees and managers with a high level of digital marketing knowledge has risen significantly. Although prior literature states that successful digital transformation depends not only on access to infrastructure but also on the organisation's capability-building mechanisms and

the digital literacy of the workforce (Elia et al., 2021; Verhoef et al., 2021; Kraus et al., 2022).

As a result, Digital Marketing Skills (DMS) are now considered a key capability for success in the modern digital economy. DMS include the ability to manage digital content, the ability to assess data available online critically, the ability to communicate effectively via various forms of digital media, the ability to establish and maintain a professional image in a digital space, and the ability to exhibit responsible behaviour in a digital space. While studies have shown that the level of digital competency of a company's employees has a positive impact on a company's overall agility, innovative capability, customer engagement, and digital adoptions' effectiveness (Troise et al., 2022; Nambisan et al., 2019; Vial, 2021), there exists very little empirical research studying the factors which affect DMS in MSME settings.

Prior studies investigating companies' adoption of digital marketing have primarily investigated either technology acceptance behaviour, technology utilisation or the direct impact of digital marketing on a company's performance (Marangunić & Granić, 2015; Abed, 2020). The Technology Acceptance Model (TAM) was first introduced by Davis (1989) to describe how users' perceptions of ease of use and other related attitudes affect their decision to adopt technology. Researchers later applied TAM to both digital business transformation (Alalwan et al., 2020) and online marketing environments (Alalwan et al., 2020; Abed, 2020) to emphasise employees' attitudes towards technology and perceptions about digital usability.

Additionally, the Resource-Based View (RBV) states that organisational capabilities and strategic resources are sources of long-term competitive advantages (Barney, 1991). As researchers continue to explore digital transformation, workforce digital competencies and organisational learning mechanisms are increasingly recognised as strategic intangible resources providing a source of sustained competitive advantage for organisations through enhanced firm flexibility and adaptability and innovation capability (Matarazzo et al., 2021; Warner & Wäger, 2019). Finally, Dynamic Capability Theory describes how organisations

develop adaptable capabilities to address continuously changing environmental pressures (Teece, 2018). Therefore, MSMEs' digital marketing capabilities may be viewed as a dynamic organisational capability that enables them to adjust/reorganise their marketing processes, customer relationships, and communication approaches in response to changes in digitally evolving environments.

While this theoretical framework makes valuable contributions to our current understanding of digital transformation and the development of digital marketing capability, we observe a significant conceptual gap in the measurement and modelling of Digital Marketing Skills. For example, while earlier studies often treated communication capabilities, content management, digital interaction as separate predictor variables rather than as sub-dimensions of a broader digital capability construct, such conceptual inconsistencies undermine theoretical consistency and limit the predictive power of current digital capability models. Moreover, relatively few studies have studied behavioural orientation, support for digital development, workforce digital competency development, technological readiness jointly in an integrated empirical model for MSMEs in emerging economies (Troise et al., 2022; Kraus et al., 2022).

The objective of this paper is to fill this conceptual gap by developing a multi-dimensional model of Digital Marketing Skills for MSMEs in India. This paper views Digital Marketing Skills as a higher-order construct represented by five dimensions: Content Management, Critical Inquiry, Communication & Collaboration, Identity & Development and Responsibility. The objectives of this paper are to investigate whether ICT attitude, perceived ease of use, digital training support/management support, and technological readiness will positively influence Digital Marketing Skills and subsequently investigate if Digital Marketing Skills will positively influence Digital Marketing Adoption Effectiveness.

This paper makes three primary contributions to the field. First, this paper defines a theoretically consistent definition of Digital Marketing Skills as a higher-order organisational capability construct

comprising multiple sub-dimensions. Second, this paper synthesises concepts from the Technology Acceptance Model, Dynamic Capability Theory, Resource-Based View to understand how organisational support mechanisms/employees' attitudes towards technology/employees' perceptions of technology usability contribute to employees' development of digital capabilities. Lastly, this paper presents empirical evidence from the Indian MSME setting where rapid growth in the use of digital transformation technologies continues unabated in the post-pandemic era.

Practically speaking, results from this study can help guide MSME managers, policymakers and digital ecosystem partners in developing methods to enhance employees' digital marketing capability development by improving employees' ICT attitudes/ease-of-use of technology use, supervisory support for employees' participation in digital training programs/employees' technical preparedness. Results from this study can also inform policy initiatives designed to strengthen employees' digital literacy and workforce capability development in emerging economies.

2. Literature Review

Digital transformation has dramatically changed the marketing environment in which businesses operate, especially Micro, Small, and Medium Enterprises (MSMEs). The growing role of digital capabilities in all aspects of business operations has placed significant emphasis on developing digital capabilities at the organisational level and on individual employees' digital skills. While contemporary researchers now understand that digital marketing is more than just promotional activities, it has evolved into one of many strategic organisational capabilities that can support customer engagement, operational agility, market responsiveness, and competitive advantage (Verhoef et al., 2021; Vial, 2021). Furthermore, the COVID-19 pandemic accelerated businesses' transition to digital platforms as a means to communicate with customers, interact with them, and ultimately maintain business continuity. Therefore, the pandemic further increased the strategic value of Digital Marketing Skills within MSMEs.

Recent research shows that digital marketing does increase organisational performance, particularly for SMEs operating in less-than-resource-rich environments. For example, Sharabati et al. (2024) indicate that some forms of digital marketing, including online advertising, social media marketing, and Search Engine Optimisation (SEO), do have positive effects on SME performance through greater customer engagement and improved digital transformation capabilities. Likewise, Amin et al. (2025) report that both digital transformation and social media marketing are effective in improving marketing performance for SMEs by enhancing innovation capabilities, productivity, and customer responsiveness. These findings suggest that digital marketing capabilities are emerging as an important resource for small and medium-sized enterprises competing in rapidly changing environments.

Studies based on the theoretical foundations of digital marketing adoption and digital capability development have been built on three primary models: the Technology Acceptance Model (TAM), the Resource-Based View (RBV), and Dynamic Capability Theory. Davis' (1989) Technology Acceptance Model posits that individuals will adopt or reject a new technology based on how useful they perceive it to be and how easy they believe it is to utilise. Studies extending TAM into digital environments and demonstrating the extent to which employees' beliefs about technology (i.e. attitudes) and perceptions of ease-of-use impact technology-based behaviour include Marangunić & Granić (2015); Abed (2020). Because MSMEs rely heavily on adapting to and utilising new technology to engage customers via digital marketing and support technology-enabled learning, ease of use is critical for increasing employee engagement with technology and encouraging digital learning throughout the organisation.

Digital Transformation is an ongoing process of modernising a company's operations, products, services, culture, and relationships through digital channels. Companies today must embrace this new reality to grow and remain successful in a world that is increasingly dependent on digital solutions.

The Resource-Based View (RBV) of the firm is a well-established theory that posits that organisations possess various capabilities and resources that confer sustainable competitive advantage (Barney, 1991). One area of increasing interest in RBV related to digital transformation includes the use of workforce-level digital competences, organisational learning systems and technological capabilities as key sources of strategic intangible resources that enable companies to improve both their market adaptability and innovation performance (Warner & Wäger, 2019). Several recent studies have examined MSMEs (Micro, Small, and Medium Enterprises), indicating that digital skills, organisational readiness, and managerial support are key contributors to digital transformation outcomes by enabling organisations to utilise digital technologies more effectively (González-Varona et al., 2024).

In addition to understanding how organisations can best leverage their resources to succeed in highly dynamic environments, Dynamic Capability Theory (DCT) provides insight into how organisations need to continue developing their capacity for adaptation in response to rapid changes in technological environments. Teece (2018) suggested that in order for organisations to sustain their competitive position in highly dynamic environments, they will continually require a variety of sensing, learning, and reconfiguring capabilities. As a result of the rapidly evolving nature of consumer behaviours and digital marketing technologies, digital marketing capabilities could serve as dynamic organisational capabilities for MSMEs, enabling them to adapt their approaches to interacting with, communicating with, and engaging customers and the marketplace. Previous research has demonstrated that MSMEs with strong digital capabilities are more resilient and adaptable and exhibit higher innovation performance than those without such capabilities (Kraus et al., 2022; Troise et al., 2022).

MSME digital transformation research is increasingly focusing on the roles of workforce-level digital competency and the provision of appropriate organisational support. Research indicates that digital marketing capabilities contribute to enhanced innovation and competitiveness among SMEs in emerging

economies (ElKhouday, 2026). Moreover, Gao et al. (2025) found that whilst there were three primary predictors of organisational performance and customer engagement, namely digital marketing tools, technological investments and the degree of digital transformation capability possessed by an organisation, the latter was far more influential. This finding suggests that success in transforming an organisation through the application of digital technologies does not depend solely on acquiring technology but also on providing employees with the necessary competencies through appropriate forms of learning and development.

Another factor contributing to the emergence of digital capability is organisational support. Organisational support has been identified as one of the principal factors influencing the formation of digital capability. Prior research has consistently demonstrated that management commitment, organisational learning orientation, and digital training support all positively influence employees' adoption of digital technologies and the development of their competencies in using these technologies (Mulyono & Purnomo, 2025). Furthermore, previous research has demonstrated that internal organisational factors, such as digital skills, human capital, and organisational readiness, significantly impact MSMEs' levels of digitalisation and their performance in online businesses (Lokuge & Duan, 2021; Warner & Wäger, 2019). Additionally, prior research has demonstrated that leadership support and formalised mechanisms for building capability both increase an organisation's level of digital maturity and its levels of innovation performance (Warner & Wäger, 2019; Lokuge & Duan, 2021).

Finally, technology readiness has been extensively studied in relation to digital transformation. Generally speaking, technology readiness represents the availability of technological infrastructure, including access to high-speed Internet connectivity, software applications, and overall organisational preparedness to adopt digital technologies. However, prior research indicates that firms with lower levels of technology readiness experience difficulty implementing digital transformations and developing effective digital marketing capabilities

(Amin et al., 2025; Gao et al., 2025). Consequently, MSMEs lacking adequate technological infrastructure are unable to exploit the advanced digital marketing tools available to competitors fully.

In addition to highlighting the significance of technology readiness and organised learning systems for capability building in recent years, other researchers have highlighted the importance of structured training programmes and employee education for capability building. Studies have demonstrated that structural training programs, workshops, webinars, and other forms of digital learning positively affect employee competence in digital technologies and employee technology adoption behaviour. As such, training appears to represent a capability-building mechanism that enables MSMEs to enhance worker flexibility and improve their digital marketing effectiveness (González-Varona et al., 2024).

Although significant progress has been made towards establishing a comprehensive body of knowledge on digital transformation and the adoption of digital marketing strategies by small firms, there remain important conceptual limitations in current research. Firstly, most studies investigating digital transformation behaviours and the adoption of digital platforms focus exclusively on employee behavioural orientations toward technology use or on organisational performance measures. Secondly, whereas prior research has defined communication capability, content management, digital interactions and online engagement as discrete constructs or elements representing a larger set of conceptual components associated with a specific form of organisational capability -- referred to herein as Digital Marketing Capabilities -- much less emphasis has been placed on integrating these concepts into a coherent conceptual framework. This conceptual fragmentation reduces the explanatory power of existing models and detracts from the theoretical consistency provided by prior conceptualisations.

Additionally, despite acknowledging the significance of digital skills, few empirical studies have developed Digital Marketing Skills as a higher-order multidimensional construct that reflects

integrated forms of digital competence. The lack of cohesive frameworks for explaining digital transformation among MSMEs is becoming especially relevant given the constrained resources and limited managerial capacities many MSMEs in emerging economies face.

The purpose of this paper is to address these conceptual limitations by defining Digital Marketing Skills as a higher-order construct comprising five distinct types of Digital Competence: Content Management, Critical Inquiry, Communication & Collaboration, Identity & Development, and Responsibility. The paper also presents an overarching model combining ICT Attitudes, Perceived Ease-of-Use, Digital Training Support Systems, Technology Readiness, and Management Support as predictors of workforce Digital Capability Formation and Digital Marketing Adoption Effectiveness among Indian Post-COVID MSMEs.

3. Research Methodology

3.1 Research Design

A Quantitative Cross-Sectional Research Design is used to investigate the determinants for digital marketing skills (DMS) and their impact upon Digital Marketing Adoption Effectiveness (DMAE) in post-COVID MSMEs in India. A Structured Questionnaire-Based Survey Methodology is utilised in this study, as it will provide an empirical examination of Latent Behavioural, Technological, and Organisational Constructs via Multivariate Statistical Modelling.

The Research Framework is created through the integration of the Technology Acceptance Model (TAM), Resource-Based View (RBV) and Dynamic Capability Theory. In the proposed framework, Digital Marketing Skills are viewed as a Higher-Order Construct, represented by Five Dimensions: Content Management, Critical Inquiry, Communication & Collaboration, Identity & Development, and Responsibility. Antecedent constructs include ICT Attitudes, Perceived Ease of Use, Digital Training Support, Technology Readiness and Management Support. The Outcome Construct is Digital Marketing Adoption Effectiveness.

3.2 Population and Sampling

Target populations included all MSME owners/managers, Marketing personnel, Employees, etc., who have a role or are involved with Digital Marketing-related work for MSMEs in Bihar, India.

MSMEs were targeted due to their increasing reliance on digital media for customer interactions, their efforts to expand markets, and their need to maintain ongoing operations in the Post-Pandemic Environment.

Purposive sampling was employed to select respondents with sufficient knowledge of the current digital marketing strategies used by each organisation. Respondents came from three different sectors i.e. Manufacturing, Service and Trading.

This resulted in a final data set of 320 valid responses exceeding the minimum sample size requirements for partial least squares structural equation modelling (PLS-SEM) - i.e., 10 times the maximum number of direct structural paths toward any endogenous construct.

To assess the adequacy of the sample size, we used the "ten times" rule which states that there should be at least ten times the maximum number of structural paths leading into an endogenous construct:

$$N \geq 10 \times \text{maximum structural paths}$$

Given that the maximum number of paths leading to an endogenous construct in this model is 5, the minimum acceptable sample size is $n = 50$. Therefore, the sample size of 320 is statistically acceptable for higher-order PLS-SEM.

3.3 Instrument Development

Data were collected at the primary level using an organised questionnaire based on recognised scales from previous literature that have investigated technology adoption, digital capabilities, organisational readiness, and digital marketing competencies. Questionnaire sections were slightly modified to better align with MSME contexts.

The questionnaire was divided into 5 sections. Section one contained demographics related to the

firm (firm type, industrial categories, etc.) as well as digital marketing use. Section two presented demographic information about the respondents. Sections three through five utilised five-point Likert-type scale items to measure latent constructs.

Respondents' attitudes toward ICTs measured their predisposition toward digital technologies. Respondents' perceptions of the ease of use of digital marketing platforms were also measured. Organisational mechanisms used to build employee capacity were measured by digital training support and management support. Technology readiness measures firms' preparedness for IT infrastructure. Digital marketing skills were operationalised as a multilevel, higher-order concept, measured by content management, critical inquiry, communication/collaboration, identity/development, responsibility, and, finally, the effectiveness of utilising digital marketing (digital marketing adoption) in producing organisational results.

The final instrument consisted of 43 observed items.

3.4 Data Collection Procedure

Data collection was conducted through both online and offline modes to improve response accessibility among MSMEs. Digital forms were circulated through email, WhatsApp Business groups, LinkedIn networks, and professional MSME contacts. In addition, printed questionnaires were administered personally to selected enterprises where direct interaction was feasible.

Respondents were informed that participation was voluntary and the information collected would be used solely for academic purposes. Confidentiality and anonymity were assured to minimize social desirability bias and encourage unbiased responses.

3.5 Measurement of Constructs

All constructs in the study were operationalized as reflective constructs. Digital Marketing Skills were conceptualized as a higher-order reflective-reflective construct composed of five first-order dimensions. The operationalization of the constructs is presented in Table 1.

Table 1. Construct Operationalization

Construct	Description
ICT Attitude	Positive orientation toward digital technologies
Perceived Ease of Use	Perceived simplicity and usability of digital platforms
Digital Training Support	Organizational support for digital skill development
Technology Readiness	Availability of technological infrastructure and digital resources
Management Support	Managerial encouragement and commitment toward digital initiatives
Content Management	Ability to organize and create digital content
Critical Inquiry	Ability to evaluate and utilize digital information critically
Communication & Collaboration	Digital interaction and coordination capability
Identity & Development	Professional digital identity and continuous learning orientation
Responsibility	Ethical and responsible digital behaviour
Digital Marketing Adoption Effectiveness	Effectiveness of digital marketing implementation and outcomes

3.6 Data Analysis Technique

The study employed Partial Least Squares Structural Equation Modeling (PLS-SEM) using the SEMinR package in R for empirical analysis. PLS-SEM was selected because of its suitability for predictive modeling, higher-order construct estimation, and complex multivariate relationships involving multiple latent variables.

The analysis was conducted in two stages: measurement model assessment and structural model assessment. The measurement model evaluation included Cronbach’s alpha, composite reliability, rhoA, average variance extracted (AVE), outer loadings, and discriminant validity through HTMT analysis. The structural model assessment involved path coefficient estimation, coefficient of determination (R²), effect size (f²), bootstrapping-based significance testing, and multicollinearity assessment using variance inflation factor (VIF).

The structural relationships were estimated using 5,000 bootstrap resamples to ensure robustness of path significance testing. The general structural form of the model can be represented as follows:

$$DMS = \beta_1 ICTA + \beta_2 PEOU + \beta_3 DTS + \beta_4 TR + \beta_5 MS + \varepsilon$$

$$DMAE = \gamma_1 DMS + \varepsilon$$

where:

- *DMS*= Digital Marketing Skills
- *DMAE*= Digital Marketing Adoption Effectiveness

- *ICTA*= ICT Attitude
- *PEOU*= Perceived Ease of Use
- *DTS*= Digital Training Support
- *TR*= Technology Readiness
- *MS*= Management Support
- ε = Error term

In addition to PLS-SEM, regression-based robustness analysis was conducted to validate the consistency of the empirical findings.

3.7 Ethical Considerations

The study adhered to standard ethical research practices. Participation was voluntary, and respondents were informed about the academic purpose of the research. No personally identifiable information was collected, and all responses were treated confidentially. The study did not involve any clinical or medical intervention and therefore did not require formal ethical clearance.

4. Data Analysis and Results

4.1 Data Screening and Preliminary Assessment

The final dataset consisted of **320 valid responses** collected from MSME respondents. Prior to model estimation, the data were screened for missing values, response completeness, and suitability for multivariate analysis. No missing values were found across the 43 measurement items, indicating that the dataset was complete and suitable for further analysis.

The minimum sample size requirement was assessed using the 10-times rule in PLS-SEM. Since the

maximum number of structural paths directed toward an endogenous construct was five, the minimum required sample size was:

$$N \geq 10 \times 5 = 50$$

The actual sample size of 320 substantially exceeded this threshold, thereby satisfying the minimum sample adequacy condition for PLS-SEM analysis.

Table 2. Data Screening Summary

Criterion	Result	Interpretation
Final valid responses	320	Adequate
Missing values	0	No missing data problem
Scale range	1–5	Valid Likert structure
Minimum required sample	50	Satisfied
Actual sample size	320	Strong for SEM

The descriptive statistics indicated that all scale items had a mean value of approximately 3.00 with a standard deviation of 1.42. This suggests that the responses were sufficiently dispersed across the five-point scale and did not suffer from extreme central tendency or one-sided response bias.

4.2 Common Method Bias

Since the data were collected using a single structured questionnaire, common method bias was

examined using Harman’s single-factor test. The result showed that the first unrotated factor explained **24.50%** of the total variance, which is below the recommended threshold of 50%.

$$\text{CMB Variance} = 24.50\% < 50\%$$

Therefore, common method bias was not a serious threat in the present study.

Table 3. Common Method Bias Test

Test	Value	Recommended Threshold	Interpretation
Harman single-factor variance	24.50%	< 50%	No serious CMB issue

This result strengthens the credibility of the survey-based findings and indicates that the observed relationships are unlikely to be artificially inflated due to common method variance.

4.3 Measurement Model Assessment

The measurement model was evaluated using Cronbach’s alpha, composite reliability, rhoA, average variance extracted, and outer loadings. The reliability and validity values are presented in Table 3.

Table 4. Construct Reliability and Convergent Validity

Construct	Cronbach’s Alpha	Composite Reliability	rhoA	AVE	Interpretation
ICT Attitude	0.745	0.838	0.758	0.565	Acceptable
Perceived Ease of Use	0.813	0.876	0.824	0.639	Good
Digital Training Support	0.800	0.868	0.824	0.623	Good
Technology Readiness	0.797	0.864	0.862	0.616	Good
Management Support	0.782	0.858	0.791	0.602	Good
Content Management	0.780	0.858	0.781	0.603	Good
Critical Inquiry	0.768	0.852	0.772	0.590	Good
Communication & Collaboration	0.771	0.854	0.775	0.593	Good
Identity & Development	0.685	0.826	0.687	0.613	Acceptable
Responsibility	0.704	0.835	0.707	0.628	Acceptable
Digital Marketing Adoption Effectiveness	0.796	0.860	0.795	0.551	Good

The values of composite reliability ranged from **0.826 to 0.876**, exceeding the recommended minimum value of 0.70. Similarly, AVE values ranged from **0.551 to 0.639**, which are above the recommended threshold of 0.50. Hence, convergent validity was established. Although the Cronbach’s alpha value for Identity & Development was slightly below 0.70, its composite reliability and AVE were above the recommended thresholds. Therefore, the construct was retained because composite reliability

is considered more appropriate in PLS-SEM than Cronbach’s alpha.

4.4 Indicator Reliability

Outer loadings were examined to assess indicator-level reliability. Most item loadings exceeded the preferred threshold of 0.70. A few items, such as ICTA4, showed a loading slightly below 0.70; however, they were retained because the overall composite reliability and AVE values of the construct were satisfactory.

Table 5. Range of Outer Loadings

Construct	Loading Range	Interpretation
ICT Attitude	0.688–0.796	Acceptable
Perceived Ease of Use	0.759–0.823	Good
Digital Training Support	0.759–0.847	Good
Technology Readiness	0.718–0.867	Good
Management Support	0.759–0.794	Good
Content Management	0.765–0.788	Good
Critical Inquiry	0.747–0.808	Good
Communication & Collaboration	0.745–0.807	Good
Identity & Development	0.765–0.805	Good
Responsibility	0.769–0.806	Good
Digital Marketing Adoption Effectiveness	0.707–0.761	Acceptable

Thus, the measurement indicators demonstrated adequate reliability for further structural model assessment.

4.5 Discriminant Validity

Discriminant validity was assessed using HTMT values. The antecedent constructs such as ICT Attitude, Perceived Ease of Use, Digital Training Support, Technology Readiness, and Management Support showed acceptable HTMT values, indicating that these constructs are empirically distinct. However, the HTMT values among the five Digital Marketing Skills dimensions were very high.

This is conceptually expected because Content Management, Critical Inquiry, Communication &

Collaboration, Identity & Development, and Responsibility are not independent theoretical constructs. Rather, they represent closely related subdimensions of the higher-order Digital Marketing Skills construct. Therefore, these five dimensions should not be interpreted as separate competing predictors. They should be treated as components of Digital Marketing Skills. This finding directly supports the corrected conceptualization of the study.

4.6 Multicollinearity Assessment

Multicollinearity was assessed through variance inflation factor values. All VIF values were close to 1 and far below the conservative threshold of 3.3.

Table 6. VIF Values

Predictor	VIF
ICT Attitude	1.021
Perceived Ease of Use	1.026
Digital Training Support	1.016
Technology Readiness	1.010
Management Support	1.026



The results confirm that multicollinearity was not a concern in the structural model.

4.7 Structural Model Assessment

The structural model was estimated using PLS-SEM with 5,000 bootstrap samples. The following structural equation was tested:

$$DMS = \beta_1 ICTA + \beta_2 PEOU + \beta_3 DTS + \beta_4 TR + \beta_5 MS + \varepsilon$$

The second equation examined the influence of Digital Marketing Skills on Digital Marketing Adoption Effectiveness:

$$DMAE = \gamma_1 DMS + \varepsilon$$

The regression-based robustness model showed that all five antecedents significantly predicted Digital Marketing Skills.

Table 7. Predictors of Digital Marketing Skills

Hypothesis	Path	Estimate	t-value	p-value	Result
H1	ICT Attitude → DMS	0.217	5.140	<0.001	Supported
H2	Perceived Ease of Use → DMS	0.165	4.140	<0.001	Supported
H3	Digital Training Support → DMS	0.290	7.241	<0.001	Supported
H4	Technology Readiness → DMS	0.241	6.027	<0.001	Supported
H5	Management Support → DMS	0.282	6.892	<0.001	Supported

The model explained **35.62%** of the variance in Digital Marketing Skills.

$$R^2_{DMS} = 0.356$$

This indicates that organizational, technological, and behavioural factors jointly explain a meaningful proportion of Digital Marketing Skills among MSME workforce.

Among the predictors, **Digital Training Support** emerged as the strongest predictor, followed by **Management Support** and **Technology Readiness**.

This suggests that workforce-level digital marketing skills do not develop automatically merely through digital exposure. Rather, they are shaped through organizational training, managerial encouragement, and technological preparedness.

4.8 Effect of Digital Marketing Skills on Adoption Effectiveness

The second structural relationship examined whether Digital Marketing Skills enhance Digital Marketing Adoption Effectiveness

Table 8. Effect of Digital Marketing Skills on Adoption Effectiveness

Hypothesis	Path	Estimate	t-value	p-value	Result
H6	DMS → DMAE	0.516	9.827	<0.001	Supported

The model explained **23.29%** of the variance in Digital Marketing Adoption Effectiveness.

$$R^2_{DMAE} = 0.233$$

This result confirms that MSMEs with stronger workforce-level digital marketing skills are more likely to experience effective digital marketing adoption in terms of customer engagement, market

reach, business growth, digital channel utilization, and competitive advantage.

4.9 Dimension-Level Diagnostic Analysis

To further understand the internal structure of Digital Marketing Skills, the five subdimensions were examined separately. The results showed that all antecedents had significant positive effects on the DMS dimensions.

Table 9. Antecedents and DMS Dimensions: Bootstrapped Path Coefficients

Predictor	CM	CI	CC	ID	RS
ICT Attitude	0.213***	0.202***	0.226***	0.167***	0.235***
Perceived Ease of Use	0.173***	0.170***	0.154***	0.179***	0.169***
Digital Training Support	0.308***	0.317***	0.301***	0.318***	0.226***
Technology Readiness	0.259***	0.236***	0.279***	0.217***	0.268***
Management Support	0.264***	0.240***	0.298***	0.301***	0.326***

Note: *** p < 0.001.

The dimension-level results show a consistent pattern. Digital Training Support had the strongest effects on Content Management, Critical Inquiry, Communication & Collaboration, and Identity & Development. Management Support had the strongest influence on Responsibility. This suggests

that training primarily improves skill execution, while management support strengthens responsible and ethical digital marketing behaviour.

4.10 Explanatory Power of the Model

The explanatory power of the model was assessed using R² and adjusted R² values.

Table 10. R² Values

Endogenous Construct	R ²	Adjusted R ²	Interpretation
Content Management	0.297	0.286	Moderate
Critical Inquiry	0.275	0.263	Moderate
Communication & Collaboration	0.319	0.308	Moderate
Identity & Development	0.298	0.286	Moderate
Responsibility	0.301	0.290	Moderate
Digital Marketing Adoption Effectiveness	0.241	0.229	Moderate

The explanatory power of the model is meaningful for behavioural and organizational research, particularly in MSME settings where employee skills are influenced by multiple contextual, resource-based, and behavioural factors.

4.11 Effect Size Analysis

Effect size was examined using f² values. The effect size is calculated as:

$$f^2 = \frac{R^2_{included} - R^2_{excluded}}{1 - R^2_{included}}$$

The results showed that Digital Training Support, Management Support, and Technology Readiness produced stronger effects on DMS dimensions compared with ICT Attitude and Perceived Ease of Use.

Table 11. Major Effect Size Pattern

Predictor	Dominant Effect Area	Interpretation
Digital Training Support	CM, CI, CC, ID	Most consistent capability-building factor
Management Support	CC, ID, RS	Strong organizational enabler
Technology Readiness	CM, CC, RS	Infrastructure-driven capability enhancer
ICT Attitude	CC, RS	Behavioural orientation effect
Perceived Ease of Use	ID, CM	Usability-driven learning effect

The effect size pattern indicates that skill formation among MSME employees is not merely attitudinal.

It depends strongly on whether the organization provides structured training, adequate digital infrastructure, and managerial encouragement.

4.12 Hypothesis Summary

Table 12. Hypothesis Testing Summary

Hypothesis	Relationship	Result
H1	ICT Attitude positively influences Digital Marketing Skills	Supported
H2	Perceived Ease of Use positively influences Digital Marketing Skills	Supported
H3	Digital Training Support positively influences Digital Marketing Skills	Supported
H4	Technology Readiness positively influences Digital Marketing Skills	Supported
H5	Management Support positively influences Digital Marketing Skills	Supported
H6	Digital Marketing Skills positively influence Digital Marketing Adoption Effectiveness	Supported

All six hypotheses were supported. The results validate the corrected conceptual model and show

that Digital Marketing Skills function as a capability-based construct shaped by behavioural, technological, and organizational enablers.

4.13 Suggested Figure for Paper

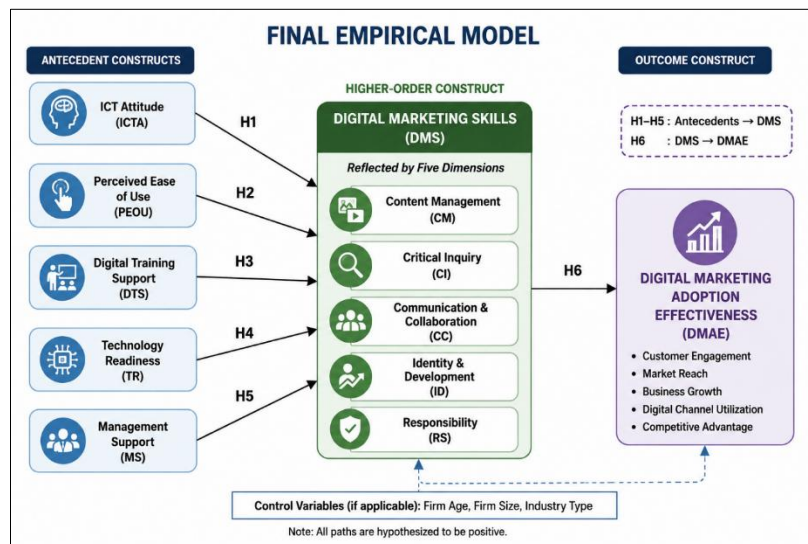


Figure 1. Structural model showing the antecedents and outcome of Digital Marketing Skills among MSME workforce.

The final empirical model presented in Figure 1 examines the factors contributing to Digital Marketing Skills (DMS) among the workforce of Micro, Small and Medium Enterprises (MSMEs) in the current post-COVID-19 commercial environment. In this empirical model, Digital Marketing Skills is a higher-order factor that captures the effects of behavioural, technological, and organisational factors on DMS.

As shown on the left side of the figure, five antecedent constructs were included: ICT Attitude (ICTA), Perceived Ease of Use (PEOU), Digital Training Support (DTS), Technology Readiness

(TR), and Management Support (MS). These five constructs serve as the primary enablers for developing digital marketing capabilities among MSME employees. Each of the antecedent constructs was assumed to have a positive relationship with DMS in accordance with hypotheses H1-H5, respectively.

In the middle of the figure is Digital Marketing Skills, which represents a multi-dimensional higher-order construct defined by five interrelated dimensions: Content Management (CM), Critical Inquiry (CI), Communication and Collaboration (CC), Identity and Development (ID), and

Responsibility (RS). Together, these dimensions define the capabilities-based nature of digital marketing competencies within MSME environments. The revised conceptualisation addresses one of the earlier theoretical concerns regarding treating CM, CI, CC, ID, and RS as reflective components of Digital Marketing Skills rather than independent predictors of DMAE.

At the right side of the figure is Digital Marketing Adoption Effectiveness (DMAE), which defines the organisational results associated with increased levels of DMS. Examples of DMAE include customer engagement, market reach, business growth, usage of digital channels and competitive advantages. Hypothesis H6 assumes that there will be a positive relationship between DMS and DMAE.

Also depicted in Fig. 1 is the presence of contextual control variables (firm age, firm size, and industry type) that may influence the development of digital capabilities within MSMEs.

In general terms, the empirical model draws upon three theoretical frameworks, including TAM, RBV and DC Theory, to describe how organisational readiness and technological orientation affect the development of workforce-level digital marketing capabilities and ultimately the digital marketing performance in MSME.

4.14 Overall Interpretation

The empirical evidence supports the modified theoretical model in its entirety. In contrast to the previous conceptualisation, in which the Digital Marketing Skills dimensions were incorrectly used as predictors of Digital Marketing Skills, the current model depicts Digital Marketing Skills as an overarching capacity comprising five interconnected sub-capacities: Content Management, Critical Inquiry, Communication & Collaboration, Identity & Development, and Responsibility.

Findings indicate that the ICT attitude of employees, Perceived Ease of Use, level of Digital Training Support from employers, levels of Technology Readiness amongst employees and levels of Management Support have all been shown to positively influence the development of employee

Digital Marketing Skills within MSME workforces. Of those factors, both Digital Training Support and Management Support had the greatest impact, underscoring the importance of organisations building capabilities in employee skills through formalised programs during their digital transition efforts following COVID-19.

The positive correlation between Digital Marketing Skills and Digital Marketing Adoption Effectiveness demonstrates that employee capability is key to effective utilisation of digital marketing platforms. Thus, MSMEs that create opportunities for training, enhance technological infrastructure, and provide managerial support will be better able to develop a digitally skilled workforce – which, in turn, will lead to enhanced customer interaction, increased business growth, and competitive advantages in markets.

5. Discussion, Implications, and Conclusion

5.1 Discussion of Findings

To begin, the current study evaluated DMS and its impact on DMAE for MSMEs in a post-COVID business climate. In addition, the empirical evidence supports the revised conceptual model. It confirms that Digital Marketing Skills can be viewed as an organisation's ability to utilise digital marketing (i.e., a multidimensional organisational capability).

The empirical data show that ICT Attitude has a significant effect on each dimension of DMS. The findings of this study provide empirical evidence that when employees' orientations towards digital technologies are favourable, they are more inclined to use digital marketing tools and applications. As such, this study supports the propositions put forth in the Technology Acceptance Model (TAM) regarding the importance of attitude in facilitating employees' adoption of new technologies.

Additionally, Perceived Ease of Use also had a significant positive effect on DMS. Employees within MSMEs who found digital marketing tools easy to use were more likely to have higher levels of digital marketing competency. Therefore, the study illustrates the significance of digital interface usability in developing employees' digital work

skills for MSMEs, especially in emerging markets where advanced technical expertise may be limited.

Digital Training Support was found to be one of the most powerful predictors of DMS. As such, formal training programs, workshops, and online educational opportunities are critical for increasing employees' digital competence. The study's findings reinforce the capability-building component of the Resource-Based View theory. Specifically, the theory states that investing time, money, and other resources in developing employees' skills will provide organisations with a sustainable competitive advantage.

Technology Readiness was also found to have a significant effect on DMS. MSMEs that possessed sufficient technology infrastructure, Internet connectivity, and digital assets were better able to develop digital marketing capabilities. The study shows that while motivating employees is necessary for transforming businesses into more digital ones, having readily available digital enablers is equally, if not more, important.

Finally, Management Support was found to have a significant positive relationship with DMS across all dimensions. Thus, managers' encouragement, leaders' commitment to digital transformation and providing resources to implement digital initiatives have a direct contribution to employee capability development. Notably, in MSME contexts, managers' behaviour tends to shape how their firms learn about new technologies and incorporate them into their businesses.

Moreover, the study confirmed that Digital Marketing Skills positively affect Digital Marketing Adoption Effectiveness. MSMEs with stronger digital marketing competencies reported increased customer interactions through their digital channels, expanded their markets, achieved greater business success, utilised their digital channels more effectively, and gained greater competitive advantage. Therefore, these findings validate the argument made by Dynamic Capability Theory regarding the importance of companies' adaptability (digital capability) during post-pandemic periods and in responding to market changes.

5.2 Theoretical Implications

The research has added value to both Digital Marketing and Micro, Small, and Medium Enterprises (MSME) bodies of knowledge in several significant ways. Firstly, this study addresses an acknowledged conceptual flaw in prior studies. Prior studies had incorrectly formulated the Digital Marketing Skills as antecedent variables. Therefore, this study recasts Digital Marketing Skills as a higher-order construct which includes five interrelated dimensions: Content Management, Critical Inquiry, Communication & Collaboration, Identity & Development, and Responsibility.

Secondly, this study provides an integrated model with three theoretical frameworks, namely, the Technology Acceptance Model, the Resource-Based View, and the Dynamic Capability Theory, to explain how MSMEs develop their digital capabilities. The study extends the current literature by showing that digital marketing performance cannot be explained solely by adopting technologies. Rather, there are other factors, such as the organisation's ability to learn and improve its digital capabilities.

Lastly, the study expands our understanding of digital transformations in micro, small, and medium enterprises in developing countries. As well as providing empirical evidence for the role of organisational support systems in shaping employees' digital competencies, the results offer a fuller understanding of how digital competencies can be developed at the workforce level within organisations operating under constraints.

5.3 Practical Implications

The study has several practical implications for managers of small and medium-sized enterprises (SMEs); digital ecosystem players, including SME development agencies and governments; and employees working in these enterprises. Firstly, there are strong arguments that all SME employers must invest in formal digital education/training to develop the digital skills necessary for effective digital marketing. Digital education will have the greatest impact when it enhances their ability to create content, critically evaluate digital information, communicate effectively via digital

media, and behave responsibly in digital environments.

Secondly, SME managers need to support digital education and the use of new technologies by engaging with their employees and providing appropriate support. It was found that without this level of engagement from SME managers, developing digital capabilities is unlikely to succeed.

Thirdly, SME development agencies and government policy makers need to take action to develop better technology infrastructure and increase digital preparedness amongst SMEs. These could include financial support for investing in digital solutions, provision of digital education programs or services to support technology adoption in SMEs. This likely leads to greater success in SME digital transformation.

Lastly, digital platform designers/developers need to create simple-to-use platforms that are easy to navigate, even for those without advanced technological proficiency. Ease of use will facilitate the increased adoption/utilisation of digital marketing across emerging markets.

5.4 Conclusion

This research assessed the determinants and consequences of the MSME workforce's Digital Marketing Skills in post-COVID-19 India. Using PLS SEM with responses from 320 MSME participants, this research demonstrates that ICT attitude, perceived ease of use, digital training support, technology readiness, and management support are significant predictors of the development of digital marketing skills.

This research also finds that Digital Marketing Skills have a positive effect on the effectiveness of digital marketing adoption (DMAE), leading to improved levels of customer engagement, market reach, business growth and competitive advantage for MSMEs.

Conceptually, this research adds to the existing literature by defining Digital Marketing Skills as a high-level, multidimensional capability; previously, the literature treated its constituent elements as separate antecedents. These results reinforce the

conclusion that the ability of SMEs to develop their digital capabilities depends on both an organisation's behavioural and technological preparedness, as well as the formal and informal learning opportunities provided by management.

Given the increasing reliance of MSMEs on digital platforms for future growth and sustainability, it will be important for organisations to identify ways to strengthen their employees' digital marketing competence as part of a larger strategy to sustainably transform digitally and ensure continued competitiveness.

5.5 Limitations and Future Research Directions

Although this study provides some results, it also has several constraints. Firstly, the study uses an observational methodology (cross-sectional), so it does not allow for causality to be inferred from the statistical associations. Future studies could use longitudinal methodologies to investigate how MSMEs' capabilities develop over time in digital marketing.

Secondly, the study is restricted to MSMEs based in the state of Bihar, India. The applicability of the results, therefore, can be limited by geographical and industrial contexts. Comparative studies could be undertaken in other states, industry sectors or countries.

Thirdly, the results rely on respondents' perceptions, derived from self-reporting. These perceptions may have been subjectively biased by each respondent. Future studies could improve the reliability of their data by using objectively quantifiable measures of performance for both digital activity and the organisation as a whole.

Lastly, there are many avenues for extension of this model. For example, future studies could incorporate moderators such as organisational culture, innovation orientation, level of digital maturity, and/or level of environmental uncertainty better to understand the complexities of MSMEs' digital transformations.

Appendix A. Survey Instrument

Section A: Enterprise Profile

1. Type of Enterprise
 - Micro
 - Small
 - Medium
2. Nature of Business
 - Manufacturing
 - Service
 - Trading
 - Others
3. Number of Employees
 - Less than 10
 - 11–50
 - 51–100
 - Above 100
4. Years of Operation
 - Less than 5 years
 - 5–10 years
 - 11–20 years
 - Above 20 years
5. Usage of Digital Marketing Platforms
 - Yes
 - No

Section B: Respondent Profile

1. Gender
 - Male
 - Female
 - Prefer not to say
2. Age Group
 - Below 25 years
 - 25–35 years
 - 36–45 years
 - 46–55 years
 - Above 55 years
3. Educational Qualification
 - Graduation
 - Post-Graduation
 - Doctorate
 - Others
4. Position in Organization
 - Owner
 - Manager

- Marketing Executive
- Digital Marketing Staff
- Others

Section C: Measurement Scale

Scale Used

- 1 = Strongly Disagree
- 2 = Disagree
- 3 = Neutral
- 4 = Agree
- 5 = Strongly Agree

ICT Attitude (ICTA)

- Employees are enthusiastic about using digital technologies.
- Digital marketing improves organizational performance.
- Employees are willing to experiment with new digital tools.
- Employees show positive attitudes toward technological change.

Perceived Ease of Use (PEOU)

- Digital marketing tools are easy to learn.
- Employees can operate digital applications without difficulty.
- Digital platforms are user-friendly.
- Employees can quickly adapt to digital technologies.

Digital Training Support (DTS)

- The organization provides digital marketing training.
- Employees receive adequate digital skill support.
- Digital workshops and webinars are regularly conducted.
- Employees are encouraged to participate in digital learning activities.

Technology Readiness (TR)

- The organization possesses adequate digital infrastructure.
- Reliable internet and digital tools are available.
- Digital technologies are regularly upgraded.

- Necessary software applications are accessible.

Management Support (MS)

- Management strongly supports digital initiatives.
- Leadership encourages digital learning.
- Management invests in digital competency development.
- Top management motivates innovative digital practices.

Digital Marketing Skills (DMS)

Content Management

- Ability to identify relevant digital information.
- Ability to organize digital content effectively.
- Ability to create engaging digital content.
- Ability to adapt content across digital platforms.

Critical Inquiry

- Ability to evaluate credibility of online information.
- Ability to identify appropriate digital tools.
- Ability to solve digital marketing problems.
- Ability to use digital technologies creatively.

Communication & Collaboration

- Effective digital communication capability.
- Efficient collaboration through digital platforms.
- Professional customer interaction online.
- Use of digital platforms for networking and engagement.

Identity & Development

- Awareness regarding professional digital identity.
- Use of digital tools for self-development.
- Continuous improvement of digital knowledge.

Responsibility

- Respect for privacy and ethical digital behaviour.
- Compliance with digital platform standards.
- Awareness of data protection responsibilities.

Digital Marketing Adoption Effectiveness (DMAE)

- Digital marketing improved customer engagement.
- Digital marketing increased market reach.
- Digital marketing contributed to business growth.
- Digital marketing enhanced digital channel utilization.
- Digital marketing improved competitive advantage.

References:

1. Abed, S. S. (2020). Social commerce adoption using TOE framework: An empirical investigation of Saudi Arabian SMEs. *International Journal of Information Management*, 53, 102118. <https://doi.org/10.1016/j.ijinfomgt.2020.102118>
2. Alalwan, A. A., Dwivedi, Y. K., Rana, N. P., & Williams, M. D. (2020). Examining factors influencing Jordanian customers' intentions and adoption of internet banking: Extending UTAUT2 with risk. *Journal of Retailing and Consumer Services*, 40, 125–138. <https://doi.org/10.1016/j.jretconser.2017.08.026>
3. Amin, M., Rezaei, S., & Abolghasemi, M. (2025). Digital transformation and social media marketing capability in SMEs: Implications for organizational performance. *Discover Sustainability*, 6(1), 112–129. <https://doi.org/10.1007/s43621-025-01228-3>
4. Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99–120. <https://doi.org/10.1177/014920639101700108>
5. Chatterjee, S., Chaudhuri, R., Vrontis, D., & Thrassou, A. (2022). Digital transformation and entrepreneurship process in SMEs of India: A moderating role of adoption of AI-CRM capability and strategic planning. *Journal of Strategy and Management*, 15(3), 416–433. <https://doi.org/10.1108/JSMA-02-2022-0033>
6. Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319–340. <https://doi.org/10.2307/249008>
7. Dwivedi, Y. K., Hughes, L., Baabdullah, A. M., Ribeiro-Navarrete, S., Giannakis, M., Al-Debei, M. M., Dennehy, D., Metri, B., Buhalis, D., Cheung, C. M. K., Conboy, K., Doyle, R.,

- Dubey, R., Dutot, V., Felix, R., Goyal, D. P., Gustafsson, A., Hinsch, C., Jebabli, I., ... Wamba, S. F. (2022). Metaverse beyond the hype: Multidisciplinary perspectives on emerging challenges, opportunities, and agenda for research, practice and policy. *International Journal of Information Management*, 66, 102542. <https://doi.org/10.1016/j.ijinfomgt.2022.102542>
8. Elia, G., Margherita, A., & Passiante, G. (2021). Digital entrepreneurship ecosystem: How digital technologies and collective intelligence are reshaping the entrepreneurial process. *Technological Forecasting and Social Change*, 150, 119791. <https://doi.org/10.1016/j.techfore.2019.119791>
 9. Elkhoudary, M. M. (2026). Digital marketing capability and SME innovation performance in emerging economies. *Humanities and Social Sciences Communications*, 13(1), 44–59. <https://doi.org/10.1057/s41599-026-07126-x>
 10. Gao, Y., Chen, X., & Li, H. (2025). Digital transformation capability and organizational competitiveness among SMEs. *Journal of Innovation & Knowledge*, 10(2), 100612. <https://doi.org/10.1016/j.jik.2025.100612>
 11. Gonzalez-Varona, J. M., Lopez-Paredes, A., Poza, D., & Acebes, F. (2024). Digital capability development and organizational transformation in SMEs: Evidence from emerging markets. *Technological Forecasting and Social Change*, 198, 123019. <https://doi.org/10.1016/j.techfore.2023.123019>
 12. Kannan, P. K. (2022). Digital marketing: A framework, review and research agenda. *International Journal of Research in Marketing*, 39(1), 1–14. <https://doi.org/10.1016/j.ijresmar.2021.09.002>
 13. Kraus, S., Schiavone, F., Pluzhnikova, A., & Invernizzi, A. C. (2022). Digital transformation in healthcare: Analyzing the current state-of-research. *Journal of Business Research*, 123, 557–567. <https://doi.org/10.1016/j.jbusres.2020.10.030>
 14. Lokuge, S., & Duan, Y. (2021). Organizational readiness for digital transformation: Development and empirical calibration of a construct. *Information & Management*, 58(8), 103629. <https://doi.org/10.1016/j.im.2021.103629>
 15. Marangunic, N., & Granic, A. (2015). Technology acceptance model: A literature review from 1986 to 2013. *Universal Access in the Information Society*, 14(1), 81–95. <https://doi.org/10.1007/s10209-014-0348-1>
 16. Matarazzo, M., Penco, L., Profumo, G., & Quaglia, R. (2021). Digital transformation and customer value creation in Made in Italy SMEs: A dynamic capabilities perspective. *Journal of Business Research*, 123, 642–656. <https://doi.org/10.1016/j.jbusres.2020.10.033>
 17. Mulyono, H., & Purnomo, B. R. (2025). Opportunities and challenges of MSME marketing in the digital era: Evidence from emerging economies. *Journal of Open Innovation: Technology, Market, and Complexity*, 11(1), 100211. <https://doi.org/10.1016/j.joitmc.2024.100211>
 18. Nambisan, S., Lyytinen, K., Majchrzak, A., & Song, M. (2019). Digital innovation management: Reinventing innovation management research in a digital world. *MIS Quarterly*, 41(1), 223–238. <https://doi.org/10.25300/MISQ/2017/41:1.03>
 19. Sharabati, A. A. A., Naji, M. K., & Al-Haddad, S. (2024). Digital marketing capability and SME performance: The mediating role of customer engagement. *Sustainability*, 16(19), 8667. <https://doi.org/10.3390/su16198667>
 20. Teece, D. J. (2018). Business models and dynamic capabilities. *Long Range Planning*, 51(1), 40–49. <https://doi.org/10.1016/j.lrp.2017.06.007>
 21. Troise, C., Corvello, V., Ghobadian, A., & O'Regan, N. (2022). How can SMEs successfully navigate VUCA environment: The role of agility in the digital transformation era. *Technological Forecasting and Social Change*, 174, 121227. <https://doi.org/10.1016/j.techfore.2021.121227>
 22. Verhoef, P. C., Broekhuizen, T., Bart, Y., Bhattacharya, A., Dong, J. Q., Fabian, N., & Haenlein, M. (2021). Digital transformation: A multidisciplinary reflection and research agenda. *Journal of Business Research*, 122, 889–901. <https://doi.org/10.1016/j.jbusres.2019.09.022>
 23. Vial, G. (2021). Understanding digital transformation: A review and a research agenda. *Managing Digital Transformation*, 28(2), 118–144. <https://doi.org/10.1016/j.jsis.2019.01.003>
 24. Warner, K. S. R., & Wäger, M. (2019). Building dynamic capabilities for digital transformation: An ongoing process of strategic renewal. *Long Range Planning*, 52(3), 326–349. <https://doi.org/10.1016/j.lrp.2018.12.001>