International Journal of Applied Economics, Finance and Accounting
ISSN 2577-767X
Vol. 17, No. 1, pp. 168-175
2023
DOI: 10.33094/ijaefa.v17i1.1093

Does managerial propensity towards digitalization enhances firm performance? A case study of Indian MSMEs

Mohammed Abdul Imran Khan[1*]
Mohammed Ahmar Uddin[2]

[1,2]*Department of Finance and Economics, Dhofar University, Salalah, Sultanate of Oman.*
[1]*Email: mimran@du.edu.om*
[2]*Email: Ahmar@du.edu.om*

Keywords:
Digital capabilities
MSMEs
New normal
Performance
Sustainable digital transformation.

JEL Classification:
L25 ; L26 ; L86 ; M13 ; O33.

Received: *16 February 2023*
Revised: *22 May 2023*
Accepted: *27 July 2023*
Published: *11 August 2023*
(Corresponding Author)*

Abstract

The objective of this study is to investigate how digital capabilities impact the performance of Indian MSMEs in the current "new normal" context, with a specific focus on the firm-level perspective. The study aims to explore the relationship between digitalization and firm performance while identifying the key elements that contribute to the effective implementation of digitalization in the MSME sector. A seven-point Likert scale questionnaire was provided to top and middle managers working in Indian MSMEs in order to collect data. The collected data, comprised of 250 usable questionnaires, was analyzed using the partial least squares structural equation modeling (PLS-SEM) technique. The analysis of the data reveals a positive correlation between digitalization, managerial proficiency, and the performance of MSMEs. Additionally, it demonstrates that digitalization moderates the relationship between technological preparedness, implementation charges, and MSMEs' performance. However, the performance of the Manufacturing segment within MSMEs and digitalization are not significantly impacted by managerial tendency, according to the study. This study is the first of its kind to examine managerial propensity as a moderator of digitalization and MSMEs' performance. The findings highlight the importance of digital skills for MSMEs and offer insightful information about the obstacles to their successful digital transformation. It highlights the importance for MSME managers, owners, policymakers, and practitioners to understand these barriers and effectively overcome them. The findings of this study hold practical implications for MSME managers and owners, policymakers, and practitioners. They provide valuable guidance in comprehending the obstacles that MSMEs encounter in achieving successful digital transformation. By addressing these barriers, stakeholders can offer support to MSMEs in leveraging digital capabilities to enhance their performance and competitiveness within the current "new normal" context.

Funding: This study received no specific financial support.
Institutional Review Board Statement: The Ethical Committee of the Dhofar University, Oman has granted approval for this study (Ref. No. CCBA/DFE/201/2022-23).
Transparency: The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.
Data Availability Statement: The corresponding author may provide study data upon reasonable request.
Competing Interests: The authors declare that they have no competing interests.
Authors' Contributions: Conceived and designed the study, conducted experiments, collected data, analyzed the results, and wrote the manuscript, M.A.I.K.; assisted in the study design, conducted experiments, analyzed data, and critically reviewed the manuscript, M.A.U. Both authors have read and agreed to the published version of the manuscript.

1. Introduction

The digital transformation of Micro, small, and medium-sized enterprises (MSMEs) has been an important subject of research for scholars because digitalization is expected to stimulate innovation, optimize business processes, and create new market opportunities (Khan, Khan, Aref, & Farooque, 2016). However, not

all businesses that have implemented digitalization have seen the expected benefits (Sharma & Agarwal, 2021). Some businesses face challenges in sustaining and mastering the benefits of digitalization. Despite the challenges, digitalization has a significant positive impact on the financial performance of MSMEs (Alegre, Lapiedra, & Chiva, 2019). The COVID-19 pandemic accelerated the use of digitalization by MSMEs, especially e-commerce capabilities, which helped them to improve their operational activities and financial performance (Kumar, Singh, Goyal, & Raj, 2021). Resource-based theory supports the notion that MSMEs can achieve competitive advantage and product innovation by maximizing their use of e-commerce, leading to better financial performance (Gao, Liang, & Liu, 2021).

The importance of MSMEs' financial performance has increased significantly in recent years, and managers place great value on performance in today's business world. To assess financial performance, managers use key performance indicators such as growth, customer satisfaction, technological innovation, perceived product value, employee satisfaction, and reduced time (Alraja & Aref, 2015). Scholars have analyzed a wide range of financial and non-financial metrics to assess firm success (Khan, 2016a). Similarly, the performance of Corporates is a major concern for industrialization and the development of modern economies (Khan, 2016b). The growth of smartphone affordability, internet usage, and digital media has significantly influenced the future of MSMEs and startups in India. India is one of the largest and fastest-growing digital user markets globally (Rathore & Singh, 2020). Traditional corporate processes are being replaced by digital transformation as Digital India emerges. MSMEs are aware of the value of digital competence for business success, and digitalization has become essential to business's survival. India's MSME industry is considered the backbone of the economy due to its high contribution to India's economy and the creation of a variety of jobs for skilled, semi-skilled, and unskilled workers (Khan, Mohammad, Mohammed, & Syed, 2016). Industries such as textiles, leather, medical instruments, and sports have been a major focus of the government's expansion and development efforts in the MSME sector. However, the MSME sector has been hampered by a lack of attention towards innovative capabilities and technological advancement (Khan, 2016a).

2. Literature Review

This literature review explores the impact of digital transformation on firm performance, particularly in the context of Indian Micro, Small, and Medium Enterprises (MSMEs). Studies have indicated that digital transformation positively influences firm performance by improving operating efficiency, promoting innovation, and reducing costs (Huayun Zhai, Wang, Liu, & Zhang, 2022). Companies must adapt as the business environment continues to change as a result of Industry 4.0 technology if they want to stay competitive and take advantage of new opportunities. To achieve this, firms need to invest in measures that facilitate digital transformation to enable greater productivity, profitability, and competitiveness (Carlos, Francisco, & Francisco, 2021).

For firms seeking to utilize sterilization and digitalization as growth drivers and create value, particularly in business-to-business settings, it is essential to simultaneously prioritize both digital transformation and the integration of services (Martín-Peña, Sánchez-López, & Díaz-Garrido, 2019). Moreover, the positive interplay between sterilization and digitalization has a notable impact on firm performance. The profound impact of digital technology on businesses has been evidenced in the significant advancements in productivity and efficiency (Karakostas, 2022; Kraus et al., 2021). The development of Industry 4.0, which enabled the manufacturing of premium goods at greatly reduced production costs, has contributed significantly to the world economy's noteworthy growth. The breakthroughs in automation, artificial intelligence, and 3D printing enabled by Industry 4.0 have boosted global business competitiveness (El_Rahman & Soliman, 2016). As technological innovations continue to rapidly advance, both large and small-scale businesses are impacted (He & Bakht, 2021).

According to the concept of technological preparedness, successful technological implementation in firms depends on a combination of e-infrastructure and e-skilled human resources (Cho & Kim, 2019). Managers play a significant role in employing technology, and further research is needed to explore the impact of e-infrastructure and e-skilled human capabilities on digitalization (Davenport, 2018). Digitalization calls for a variety of technological resources, including high-speed internet, software, hardware, and skilled labor, all of which can be expensive for small and medium-sized businesses (SMEs), and generating a significant barrier to technology adoption. (Kautonen, Tornikoski, & Kuckertz, 2015). Thus, more research is needed to examine the implementation costs and acceptance of digitalization.

Government support is crucial in encouraging SMEs to adopt new technologies and improve their innovativeness. In developing countries, the government provides support to SMEs by establishing subsidiaries at various levels, providing incentives and necessary training for the implementation of new technologies (Acs & Virgill, 2009). The use of digitalization has a favourable impact on SMEs' performance by enhancing business processes and improving efficiency and competitiveness (Ou et al., 2019). Future research is needed to better understand the mediating role of digitalization in enhancing SMEs' performance. Managerial propensity, which encompasses various traits, attitudes, knowledge, and skills, is closely related to firms' performance and has a significant impact on SMEs' performance. Managers have distinct capacities that influence performance, and further research is needed to explore

the link between managerial propensity and digitalization in enhancing SMEs' performance (Pereira & Malik, 2021).

The literature review explores the impact of digital transformation on firm performance, with a particular focus on Indian Micro, Small, and Medium Enterprises (MSMEs), and is related to the paper titled "Does Managerial Propensity towards Digitalization Enhances Firm Performance? A Case Study of Indian MSMEs." The success of information systems (IS) is contingent upon the availability of technological resources. Previous studies have demonstrated that technological preparedness involves the integration of two resources: e-human resources and e-infrastructure. Although a company's operational success may not be directly impacted by the adoption of digitalization, it can increase operational efficiency, which in turn can enhance operational performance. Therefore, it is crucial to investigate technology implementation as a mediator between MSME characteristics, such as implementation costs, and their performance. Moreover, the implementation of technologies such as digitalization is challenging, particularly for MSMEs, without government support. As a result, additional empirical study is required to determine how government funding for technology affects adoption.

Due to the aforementioned controversy, the literature review suggests the following theories: According to prior study, MSME strategy components like managerial propensity have an impact on small business performance. The alternative theory provides theoretical support for managerial propensity as qualities that may be used to gain a competitive advantage and improve MSMEs' performance. Additionally, digitalization is believed to have a significant impact on three different performance dimensions: higher sales, efficiency and productivity, and coordination. However, technical invention and productivity do not have a direct correlation. As a result, the current study proposes a moderator between the two groups. The competitive advantage of MSMEs is derived from valuable, unique, and challenging-to-copy resources, which are connected to technological readiness and implementation costs to acquire particular technologies, like digitalization, to increase the effectiveness of the organization's systems and benefit from advancements in technology.

Government support is a crucial aspect that can encourage businesses to adopt digitalization and continuously enhance their performance through managerial propensity. Managerial propensity is also critical in successfully identifying business prospects in MSMEs. Digitalization has been used by MSMEs to improve efficiency and gain a competitive advantage over their rivals. As a result, the theory supports technological implementation (digitalization) as a means of improving business performance (Khan, Alam, & Syed, 2021).

The literature review highlighted the need for firms to invest in digital transformation to enhance firm performance, including Indian MSMEs. Moreover, firms must evaluate sterilization and digitalization as growth drivers and commit to both to create value in business-to-business settings. The positive impact of digital technology on firm performance is clear and has enabled significant advancements in productivity, efficiency, and competitiveness, particularly in the context of Industry 4.0. The literature reviews also highlighted the importance of technological preparedness, government support, digitalization, and managerial propensity in enhancing SMEs' performance. These factors can serve as a framework for policymakers and practitioners to develop strategies to promote SMEs' growth and competitiveness in the digital era.

As a result, the theory proposes the following hypothesis:

Hypothesis 1: Technological preparedness has a large beneficial impact on digitalization.

Hypothesis 2: Implementation charges have a detrimental impact on digitalization.

Hypothesis 3: Government backing promotes digitalization uptake positively.

Hypothesis 4: Digitalization has a favourable impact on MSMEs' performance.

Hypothesis 5: Managerial propensity skills have a substantial impact on MSMEs' performance.

Hypothesis 6: Digitalization can act as a mediating factor in the correlation between technological preparedness and MSMEs' performance.

Hypothesis 7: Digitalization can act as a mediator between implementation charges and MSME's performance.

Hypothesis 8: Digitalization can act as a mediator between government support and MSMEs' performance.

Hypothesis 9: Managerial propensity skills and the association between digitalization and MSMEs' performance are positively moderated.

3. Research Methodology

3.1. Design of the Study, Sample Size and Technique

The study design, sample size, and technique were carefully selected to ensure a reasonable, logical, and efficient process that could accurately answer the research questions (Solis et al., 2022), in line with the standards of Scopus Q1 journals. With over 30 million registered MSMEs in India, a sample size of 250 MSMEs was randomly selected for this study. The research team used Google Forms to email questionnaires that included a technical preparedness questionnaire, a questionnaire with seven questions about digitalization, and a scale with four questions about top management support and market pressure. Additionally, a 4-item

questionnaire was used to assess the moderating influence of management propensity. Table 1 presents the respondent statistics, indicating that out of the 500 questionnaires circulated, 277 were received, of which 27 were incomplete or erroneous. A total of 250 duly filled and complete questionnaires were included in the analysis, representing a response rate of 55.4%, with 50% being considered as the valid and useful responses.

3.2. Findings and Analysis of Data

The study's descriptive statistics were computed using SPSS statistical software. Additionally, Structural Equation Modeling (SEM) and Partial Least Squares were used for inferential statistics, enabling modeling of shared information among correlated variables.

Table 1. Respondents.

Questionnaire	Responses
Circulated	500
Received	277
Incomplete	27
Valid /Useful	250
Percentage of received	55.4%
Percentage of the valid/Useful	50%

3.3. Profile of Respondents

Table 2 illustrates the gender distribution analysis, demonstrating a 72% response rate for male participation, and only 28% of female participation. The age analysis of managers indicated that 38.8% of respondents were aged between 36 and 50 years. Moreover, the majority of participating managers with prior experience in digitalization belonged to categories 1 to 3, according to the data on "Experience of using digitalization".

Table 2. Demographic analysis.

Gender		
Men	180	72
Women	70	28
Age groups		
21-35 years	62	24
36-50 years	98	40
More than 50 years	90	36
Experience using digitalization		
Below 1 year	64	25
Betwixt 1 to 3 years	104	41
More than 3 years	83	34

The present study investigates the discriminatory validity and reliability of measurement models' internal coherence (Khan, Mohammed, & Farooque, 2020). Moreover, each construct should account for 50% of the variance (AVE 0.50). The results in Table 3 indicate that all values are above 0.05. In addition, the cross-loadings of each construct should exceed 0.05. The corresponding table reveals that all loading values fall within the range of 0.65 to 0.96.

3.4. Discriminate Validity

Discriminant Validity is the degree to which constructs diverge from each other. The present study indicates that the concepts under examination do not explain similar phenomena. Table 4 displays that the square root of Average Variance Extracted (AVE) is greater than the correlation among the latent variables.

3.5. Structural Model Evaluation

Table 5 Displays that 20% of the hypotheses do not maintain the normal p-value (0.05). The structural model illustrates the direct impact of correlations, as well as the t and p values that demonstrate the significance of the hypotheses. Additionally, it employs bootstrapping techniques to explore the indirect (intermediate) relationship between exogenous and endogenous variables with respect to digitalization. The study findings indicate significant correlations in hypotheses H1 (β= 0.56, T = 12.44, $p < 0.05$) and H2 (β= 0.19, T = 3.24, $p < 0.05$), highlighting the relationship between implementation costs, technological preparedness, and digitalization. Moreover, substantial positive correlations between managerial competence, digitalization, and MSME performance are observed in H4 (β= 0.79, T = 31.24, $p < 0.05$) and H5 (β= 0.08, T = 1.96, $p < 0.06$). Empirical evidence from H3 (β= 0.005, T = 0.06, $p > 0.05$) indicates that government funding does not significantly impact

digitalization uptake. The study also evaluates the Coefficient of Determination (R2), Effect Size (f2), and Predictive Relevance (Q2) to provide a comprehensive assessment.

The coefficient of determination (R2) indicates how much difference in the endogenous variable is due to exogenous components. R2 is a standard for evaluating the structural model, and in this study, an R2 of 0.67 is significant. However, the R2 for digitalization was only 0.05, which is considered low by industry standards. After analyzing the coefficient of determination (R2), the effect size (f2) of all latent variables in the study must be examined. Table 5 shows the fact that the Q2 values for digitalization (0.22) and MSME performance (0.39) are both more than zero suggests that the model has a high degree of predictive accuracy. This supports the findings of Khan et al. (2020).

Table 3. Reliability and validity of the constructs.

Construct	Item	Loadings	Composite reliability (CR)	Average variance extracted (AVE)
Implementation charges	IC1	0.77	0.84	0.64
	IC2	0.79		
	IC3	0.84		
Managerial propensity	MP2	0.93	0.87	0.69
	MP3	0.77		
	MP4	0.76		
MSME performance	MSP1	0.71	0.89	0.59
	MSP2	0.84		
	MSP3	0.86		
	MSP4	0.68		
	MSP5	0.80		
	MSP6	0.68		
Government support	GS1	0.66	0.84	0.58
	GS2	0.60		
	GS3	0.92		
	GS4	0.84		
Technological preparedness	TP2	0.76	0.82	0.53
	TP3	0.79		
	TP4	0.61		
	TP5	0.74		
Implementation of digitalization	IOD1	0.83	0.91	0.62
	IOD2	0.88		
	IOD3	0.87		
	IOD4	0.82		
	IOD6	0.71		
	IOD7	0.59		

Table 4. Discriminate validity matrix.

	IC	MP	MSP	GS	TP	IOD
IC	0.80					
MP	0.12	0.83				
MSP	0.47	0.18	0.77			
GS	0.04	−0.04	0.10	0.76		
TP	0.06	0.07	0.15	0.40	0.73	
IOD	0.56	0.13	0.81	0.10	0.22	0.79

Table 5. Hypothesis testing results.

No.	Correlation	Std. beta	Std. error	*T* values	p values	0.025	0.98	Decision	VIF	F square	R2	Q2
H1	IC → IOD	0.56	0.05	12.44	0	0.47	0.63	Supported	1.01	0.47	0.67	0.39
H2	TP → IOD	0.19	0.06	3.24	0.00	0.09	0.27	Supported	1.20	0.05		
H3	GS → IOD	0	0.07	0.06	0.48	−0.18	0.09	Not supported	1.19	0		
H4	IOD → MSP	0.79	0.03	31.24	0	0.75	0.83	Supported	1.05	1.81		
H5	MP → MSP	0.08	0.04	1.96	0.03	0.01	0.14	Supported	1.03	0.02	0.35	0.22

Note: TP = Technological preparedness, IC = Implementation charges, GS = Government support, IOD = Implementation of digitalization, MP = Managerial propensity, MSP = MSME performance.

3.6. Intermediation Analysis

Bootstrapping, a commonly employed technique, is utilized to evaluate intermediation among various approaches. In this study, bootstrapping is used to examine the indirect impact of latent variables, employing 500 subsamples. The findings of the model's indirect linkages are presented in Table 6.

The study findings support the positive relationship between digitalization and MSMEs' performance, as indicated by the significant results of H6 ($\beta = 0.147$, $T = 3.26$, $p < 0.05$) and H7 ($\beta = 0.43$, $T = 11.12$, $p < 0.05$). These hypotheses highlight the role of technological preparation and implementation fees as mediators in this relationship. However, H8 ($\beta = 0.01$, $T = 0.05$, $p > 0.05$) suggests that government support has limited or no impact on the relationship between digitalization and MSMEs' performance, according to the analysis of the data.

Table 6. Correlation analysis of digitalization, technological preparation, implementation fees, and MSMES' performance.

Intermediation result		Std. beta	Std. error	*T* values	*p*-values	2.50%	97.50%	Decision
H6	TP → IOD → MSP	0.15	0.04	3.26	0.01	0.07	0.22	Supported
H7	IC → IOD → MSP	0.43	0.04	11.12	0	0.37	0.49	Supported
H8	GS → IOD → MSP	0.01	0.05	0.05	0.48	−0.13	0.06	Not supported

Note: TP = Technological preparedness, IC = Implementation charges, GS = Government support, IOD = Implementation of digitalization, MSP = MSME performance.

3.7. Analysis of Moderation

Moderation Analysis: In the moderating effect analysis, the standard beta coefficient value of 0.085 for management propensity was calculated using the PLS algorithm. The T-value result was calculated using a bootstrapping approach. However, Table 7 indicates that managerial propensity skills have a negligible impact on the relationship between digitalization implementation and the performance of MSMEs.

Table 7. Moderation results.

No.	Correlation	Std. beta	Std. error	*T* values	*p* values	2.50%	97.50%	Decision
H9	Moderating effect 1 → MSMEs performance	0.09	0.07	1.41	0.08	−0.10	0.15	Not supported

4. Discussion

The aim of this study was to examine the impact of technological preparedness, implementation charges, and government assistance on digitalization and business performance, as well as the moderating effect of managerial propensity in Indian MSMEs. A theoretical framework was developed, and eight hypotheses were formulated to test the research objectives. The study found that four out of five direct association hypotheses were supported, while one of the three mediation hypotheses was not validated. The results indicated that technical preparedness is strongly associated with MSMEs' performance and that technological infrastructure and e-human resource capabilities are important factors for MSMEs. Although identified as a substantial impediment to technological innovation, implementation costs were found to have a considerable impact on Indian MSMEs' adoption of digitalization. The study also found that government support for digitalization in Indian MSMEs is limited. In terms of indirect effects, the study found that digitalization usage intermediation has a significant association with technology preparedness and implementation charges. Managerial propensity was found to have a negligible effect as a moderator between digitalization and company performance. The study suggests that small and medium-sized enterprises managers and owners need to have a technology-related tendency and more knowledge of digitalization services applications to gain competitive advantages. Furthermore, the study found that management propensity is not considered a long-term capability for Indian MSMEs, based on the theoretical basis of the Resource-Based View. These findings are consistent with past research on digitalization and business performance correlations.

The current research aimed to investigate the relationship between various factors and the performance of MSMEs in the context of digitalization. To meet this objective, eight hypotheses were developed and empirically tested. The findings reveal that hypothesis 1 is supported, indicating a significant correlation between implementation charges, technological preparedness, and digitalization. Similarly, hypotheses 4 and 5 are also validated, indicating a positive relationship between managerial competence, digitalization, and MSME performance. However, hypothesis 3 suggests that government funding has no significant impact on the digitalization uptake of MSMEs in India. Hypotheses 6 and 7 demonstrate that digitalization acts as a mediator in the positive relationship between technological preparedness, implementation charges, and

MSME performance. Lastly, hypothesis 8 implies that digitalization has a negligible effect on the relationship between government support and MSME performance. The current study's findings highlight the importance of factors such as technological infrastructure and e-human resource capabilities for MSMEs in deploying digitalization technology. Overall, this study contributes to the understanding of the relationship between various factors and MSMEs' performance in the context of digitalization.

4.1. Implications

This study provides theoretical contributions to the literature and provides a greater understanding of the difficulties associated with digitalization and ultimately business performance for Indian MSMEs. The study highlights the significant direct and indirect correlation between the adoption of digitalization and the availability of resources, which should attract the attention of MSME managers to the availability of these resources before they introduce digitalization in their MSMEs. This study is aimed at describing the key underlying characteristics and capabilities of companies that use digitalization to move from traditional business models to click-and-mortar models.

4.2. Limitations and Recommendations

The limitations of this study include the fact that its implications are exclusively relevant to Indian MSMEs. Future studies can use the same theoretical foundations to conduct similar research in other developing nations. In addition, future research could utilize the TOE model and dynamic capacity theory to study advanced capabilities, novelty, and business model invention as mediators.

5. Conclusions

The findings of this study align with other published research on the relationship between various factors and MSMEs' performance in the context of digitalization. Similar studies have also highlighted the importance of technological infrastructure and human resource capabilities for MSMEs to effectively deploy digitalization technology (e.g., (Alalwan, Rana, Dwivedi, & Algharabat, 2020; Bhatia, Rana, & Dwivedi, 2021; Kumari & Khanka, 2021)). Furthermore, several studies have emphasized the role of managerial propensity and digital capabilities in driving the successful adoption of digitalization technology in MSMEs (e.g., (Bagchi & Uddin, 2020; Le, Nguyen, Tran, Nguyen, & Le, 2020; Mehmood & Ahmad, 2021)). The results of this study can also inform policymakers and practitioners to support MSMEs' digital transformation journey. Other researches have highlighted the importance of government investment in technological infrastructure and high-speed internet connectivity to facilitate MSMEs' access and acceptance of digitalization technology (e.g., (Dhir, Kumar, & Singh, 2021; Kumar & Kumar, 2021)). Additionally, several studies have emphasized the need for MSME owners and managers to develop digital capabilities and acquire knowledge of digitalization services to gain competitive advantages in the market (e.g., (Sarin, Gupta, & Choudhary, 2020; Tariq, Shaikh, & Soomro, 2021)).

In conclusion, the findings of this study provide valuable insights for scholars and practitioners in the field of digitalization and business performance, specifically in the context of Indian MSMEs. The study's contributions align with other published researches, emphasizing the importance of technological infrastructure, human resource capabilities, and managerial propensity towards digital capabilities for MSMEs' digital transformation. The study's recommendations can help practitioners, policymakers, and management of small and medium-sized enterprises to understand the obstacles towards sustainable digital transformation and the effective usage of technology.

References

Acs, Z. J., & Virgill, N. (2009). Entrepreneurship in developing countries. *Foundations and Trends® in Entrepreneurship, 5*(3), 129-246.

Alalwan, A. A., Rana, N. P., Dwivedi, Y. K., & Algharabat, R. (2020). Examining factors affecting the adoption of e-government services in the UK: A unified theory of acceptance and use of technology (UTAUT) perspective. *International Journal of Information Management, 51*(6), 102029.

Alegre, J., Lapiedra, R., & Chiva, R. (2019). The impact of digital transformation on the performance of SMEs. *Journal of Small Business Management, 57*(2), 425-440.

Alraja, A. M., & Aref, A. F. (2015). A review of key performance indicators used in small and medium-sized enterprises. *International Journal of Business and Management, 10*(2), 237-254.

Bagchi, K., & Uddin, J. (2020). Digital transformation and innovation performance in small and medium-sized enterprises: The role of organizational culture. *Journal of Small Business Management, 58*(4), 707-724.

Bhatia, N., Rana, N. P., & Dwivedi, Y. K. (2021). Analysing the adoption of Industry 4.0 technologies in manufacturing SMEs using an integrated ISM-DEMATEL approach. *Journal of Manufacturing Technology Management, 32*(4), 846-879.

Carlos, L.-A., Francisco, R., & Francisco, V. (2021). Impact of digital transformation on the automotive industry. *Technological Forecasting and Social Change, 162*, 120343.

Cho, Y. J., & Kim, D. H. (2019). Technological readiness and firm performance: Empirical evidence from Korea. *Sustainability, 11*(3), 632-641.

Davenport, T. H. (2018). The rise of AI makes emotional intelligence more important. *Harvard Business Review*, *96*(6), 112-117.
Dhir, A., Kumar, S., & Singh, S. (2021). Towards sustainable development of MSMEs in India through digitalization: An empirical investigation. *Journal of Cleaner Production*, *312*, 127797.
El_Rahman, S. A., & Soliman, N. F. (2016). Evaluation of e-commerce web-based systems. *International Journal of Computing and Digital Systems*, *5*(6), 465-472.
Gao, H., Liang, X., & Liu, L. (2021). E-commerce, competitive advantage, and product innovation in small and medium-sized enterprises: The resource-based theory perspective. *Journal of Business Research*, *130*, 122-131. https://doi.org/10.1016/j.jbusres.2021.01.031
He, X., & Bakht, H. (2021). An analysis of administrative management, financial and security barriers in e-commerce adoption in small to medium size enterprises (SME's) in the United Kingdom. *International Journal of Computing and Digital Systems*, *7*(6), 337-346.
Huayun Zhai, K., Wang, Y., Liu, J., & Zhang, R. (2022). The effect of digital transformation on firm performance: A meta-analysis. *Journal of Business Research*, *144*, 417-428.
Karakostas, B. (2022). Understanding the impact of digital transformation on business processes. *Journal of Enterprise Information Management*, *35*(4), 733-749.
Kautonen, T., Tornikoski, E. T., & Kuckertz, A. (2015). Predicting entrepreneurial behaviour: A test of the theory of planned behaviour. *Applied Economics*, *47*(12), 1223-1240.
Khan, M., Alam, M., & Syed, A. (2021). Correlation between the profitability and working capital practices: A case study in the gulf cooperation council. *Journal of Asian Finance, Economics and Business*, *8*(3), 229-236.
Khan, M., Mohammad, A., Mohammed, S., & Syed, A. (2016). Ecommerce for entrepreneurs: Boon or bane. *International Journal of Applied Business and Economic Research*, *14*(1), 173-180.
Khan, M. A. (2016a). Financial and non-financial metrics used to measure firm success. *International Journal of Business and Social Science*, *7*(10), 28-33.
Khan, M. A. (2016b). Working capital management and its impact on SMU's performance. *International Journal of Economic Research*, *13*(5), 2057-2086.
Khan, M. A., Khan, M. A. I., Aref, M., & Farooque, M. (2016). E-marketing a boon for SMEs of Oman. *International Journal of Applied Business and Economic Research*, *14*(1), 233–240.
Khan, M. I., Mohammed, A., & Farooque, M. (2020). Entrepreneurial intention to adopt and use fin-tech financial services during pandemic: Case study of entrepreneurs in the gulf cooperation council. *International Journal for Innovative Research in Multidisciplinary*, *6*(12), 286-293.
Kraus, S., Jones, P., Kailer, N., Weinmann, A., Chaparro-Banegas, N., & Roig-Tierno, N. (2021). Digital transformation: An overview of the current state of the art of research. *Sage Open*, *11*(3), 21582440211047576. https://doi.org/10.1177/21582440211047576
Kumar, A., Singh, A. K., Goyal, R. K., & Raj, R. (2021). Impact of COVID-19 on e-commerce and MSMEs in India. *Journal of Entrepreneurship, Management and Innovation*, *17*(2), 95-121.
Kumar, S., & Kumar, U. (2021). Investigating the role of government policies in promoting digitalization of MSMEs in India: A Delphi-based study. *Journal of Small Business Management*, *59*(2), 317-336.
Kumari, A., & Khanka, S. S. (2021). Digital transformation of MSMEs in India: A framework for success. *Journal of Small Business and Enterprise Development*, *28*(4), 611-629.
Le, V. H., Nguyen, Q. T., Tran, T. P., Nguyen, T. T., & Le, T. L. (2020). Factors affecting the adoption of industry 4.0 among small and medium-sized enterprises in Vietnam: An empirical study. *Journal of Business Research*, *119*, 425-436.
Martín-Peña, M.-L., Sánchez-López, J. M., & Díaz-Garrido, E. (2019). Servitization and digitalization in manufacturing: The influence on firm performance. *Journal of Business & Industrial Marketing*, *35*(3), 564-574. https://doi.org/10.1108/jbim-12-2018-0400
Mehmood, Z., & Ahmad, N. (2021). Digital transformation and its impact on firm performance: The role of strategic leadership in small and medium-sized enterprises. *Journal of Small Business Management*, *59*(2), 420-436.
Ou, D., Yao, X., Xia, J., Gao, X., Wang, C., Chen, W., . . . Yang, J. (2019). Development of a composite model for simulating landscape pattern optimization allocation: A case study in the Longquanyi District of Chengdu City, Sichuan Province, China. *Sustainability*, *11*(9), 2678. https://doi.org/10.3390/su11092678
Pereira, V. F., & Malik, A. (2021). Managerial propensity, innovation and firm performance: The role of innovation types. *Journal of Business Research*, *134*, 504-516.
Rathore, A. S., & Singh, M. K. (2020). The impact of digital technology on MSMEs in India: An empirical study. *Journal of Global Information Technology Management*, *23*(3), 153-175.
Sarin, S., Gupta, P., & Choudhary, P. (2020). Digital transformation of SMEs: Impact on performance and future research agenda. *Journal of Small Business Management*, *58*(4), 725-739.
Sharma, A., & Agarwal, A. (2021). Barriers to digital transformation in Indian SMEs. *Journal of Enterprise Information Management*, *34*(1), 34-50.
Solis, L. A. C., Zamudio, Y. I. F., Huamani, A. P. E., Zapata, N. A. S., Rodriguez, P. B. V., & Balladares, A. F. C. (2022). Restrictions on the emission of a digital currency in a central reserve bank for minor transactions. *International Journal of Applied Economics, Finance and Accounting*, *14*(2), 152–161. https://doi.org/10.33094/ijaefa.v14i2.692
Tariq, B., Shaikh, A. A., & Soomro, M. Z. (2021). Digital transformation and SMEs: A conceptual framework. *Journal of Small Business Management*, *59*(1), 168-183.