The Effects of Business Digitalization and Knowledge Management Practices on Business Performance

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ABSTRACT

The relentless advance of digitalization has transformed the business landscape, offering new opportunities and challenges for enterprises across industries. This study explores the intricate interplay between business digitalization, knowledge management practices, and business performance, with a specific focus on Micro, Small, and Medium Enterprises (MSMEs). By analyzing data from a diverse group of entrepreneurs and organizations, this research sheds light on the critical factors driving success in the digital age. The study's findings reveal that digitalization is not merely a buzzword but a tangible force shaping the destiny of businesses. It highlights the positive and significant impact of digitalization on knowledge management practices within MSMEs. Moreover, it underscores the mediating role of knowledge management in the relationship between digitalization and business performance, emphasizing the importance of holistic approaches to these domains. Key dimensions of digital capability, including basic digital capabilities, digital operation capabilities, and digital integration capabilities, are identified as significant drivers of business performance. Additionally, business model innovation emerges as a potent catalyst, propelled by digital capabilities, for enhancing organizational outcomes. The study underscores the importance of business leaders adopting digital strategies, fostering a culture of continuous learning, and leveraging social media platforms for market engagement. Furthermore, the study provides a nuanced understanding of the demographic and organizational profiles of MSMEs, shedding light on factors such as gender diversity, educational backgrounds, firm size, and age. These factors are shown to influence the adoption and impact of digitalization and knowledge management practices. In conclusion, this research underscores the transformative power of digitalization and knowledge management in shaping the performance of MSMEs. It offers actionable insights for business leaders, policymakers, and researchers, emphasizing the need for proactive engagement with digital technologies and the cultivation of knowledge-centric organizational cultures. As the digital landscape continues to evolve, this study contributes valuable perspectives to navigate the complexities of the digital age.

1. INTRODUCTION

In today's rapidly evolving business landscape, digitalization and effective knowledge management have emerged as two crucial pillars that significantly impact the performance and success of organizations. The convergence of technological advancements and the increasing importance of knowledge capital has reshaped the way businesses operate and compete. This has led to a growing body of research and interest in understanding the profound effects that business digitalization and knowledge management practices have on overall business performance. Digitalization refers to the process of integrating digital technologies into various aspects of a business, including operations, customer engagement, data analytics, and more. This transformation enables companies to streamline their processes, enhance efficiency, and gain a competitive edge in an increasingly digital marketplace. Whether it's adopting cloud computing, utilizing data analytics, or implementing automation, businesses are constantly seeking ways to harness the power of technology to optimize their operations and improve their bottom line. On the other hand, knowledge management practices focus on capturing, organizing, and leveraging the intellectual capital within an organization. This includes the documentation of tacit knowledge, sharing best practices, fostering a culture of learning, and utilizing tools and platforms to facilitate knowledge sharing among employees. Effective knowledge management not only enhances an organization's ability to innovate but also improves decision-making, problem-solving, and overall productivity. The interplay between digitalization and knowledge management is intricate. Digital technologies serve as enablers for knowledge management, making it easier to capture, store, and disseminate knowledge across the organization. Simultaneously, effective knowledge management is critical for harnessing the full potential of digitalization, as employees need the necessary

knowledge and skills to effectively utilize digital tools and navigate the complexities of the digital age. This research explores how the synergy between business digitalization and knowledge management practices influences various aspects of business performance. It examines the impact on areas such as operational efficiency, customer satisfaction, innovation, competitiveness, and financial outcomes. By understanding the intricate relationship between these two dimensions, organizations can develop strategies to optimize their digitalization efforts and knowledge management practices, ultimately driving improved business performance in a rapidly evolving and highly competitive global marketplace.

2. REVIEW OF LITERATURE

Research on the link between business digitalization, knowledge management, and MSME performance is scarce, especially in Indonesia[1]. This study examines how digitalization and knowledge management affect MSMEs. It found that digitalization positively impacts knowledge management and business performance, with knowledge management partially mediating the digitalization-performance relationship. This underscores the need for Indonesian MSMEs to explore digitalization's benefits and for entrepreneurs to embrace digital strategies and knowledge management. These practical insights are based on the study's theoretical findings that knowledge management enhances digital business and boosts performance.

This paper explores the impact of digitalization on knowledge-intensive business services (KIBS) in the service sector[2]. It focuses on how KIBS use information systems and considers manager age, gender, and company size as influencing factors. The study uses fuzzy-set qualitative comparative analysis (fsQCA) to analyze how these variables affect KIBS' future financial performance. The findings indicate that enhancing social network updates, using them for corporate purposes, having extensive digital tools training, and having older managers can improve company performance.

Digitalization has become a key driver of business innovation, enabling companies to create value through technologies like cloud computing and artificial intelligence[3]. This study examines how digitalization impacts business performance through the lens of business innovation. Using a regression model, it explores the relationship between digital capabilities, business model innovation, and company performance among 1663 listed A-share companies in the software and IT service sectors. The results indicate that digital capabilities can be categorized into three dimensions and positively affect enterprise performance. Business model innovation also positively influences company performance and is driven by digital capabilities.

Furthermore, business model innovation enhances the positive impact of digital capabilities on performance. In light of these findings, the study suggests that governments should promote digital skills development, create supportive regulations, facilitate innovation funding, encourage partnerships between businesses and tech providers, and foster collaboration among businesses. These actions are seen as essential for integrating digitalization into the business innovation model and improving overall business performance.

This study focuses on the practical impact of these technologies, such as big data, cyber-physical systems, the internet of things, and interoperability, on Small and Medium-sized Enterprises (SMEs) in Pakistan[4]. Using a questionnaire distributed in various cities, the research found that big data, cyber-physical systems, and interoperability positively influence business performance, while the impact of the internet of things is insignificant. Given the limited research in this area, the study provides new insights and a framework for future research. It also offers guidance for managers considering investments in technological infrastructure and assists policymakers in developing strategies to enhance human capital and absorptive capacity.

Research in knowledge management is evolving and complex, reflecting its interdisciplinary nature[5]. It encompasses activities like knowledge creation, acquisition, and analysis, closely tied to digital technologies. This study emphasizes the significance of technological infrastructure in knowledge management, challenging previous views. It highlights the need to explore connections between knowledge management, big data, artificial intelligence, smart technologies, and innovation, which are underrepresented in existing literature. Digital infrastructure forms the bridge between artificial and human intelligence, raising questions about their impact on decision-making and organizational behavior that require deeper investigation.
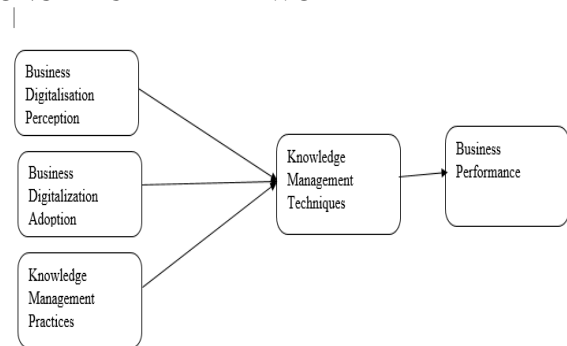
3. CONCEPTUAL FRAMEWORK

Figure 1: Conceptual Framework
Figure 1 above shows the Conceptual Framework of Business Performance

3.1 Research Question

1. How do business owners perceive digitalization, and what is its impact on their organization's performance?
2. What is the influence of business digitalization, and what insights can be gained from studying this process?
3. What challenges and perceptions exist regarding the role of knowledge management, whether intentional or inadvertent, in Micro, Small, and Medium Enterprises (MSMEs)?

3.2 Research Objectives

1. To study the business owners' perceptions of digitalization and its influence on the performance of their organisation.
2. To Study the influence of business digitalization is necessary to obtain insight into the process.
3. To study the challenges and perceptions regarding the role of knowledge management (be it undertaken knowingly or not) in MSMEs.

4. RESEARCH METHODOLOGY

Research Design

The research employs a quantitative approach to study the relationships between business digitalization, knowledge management practices, and business performance.

Sampling

- The research aims to include a diverse sample of entrepreneurs representing different demographic and geographic backgrounds to ensure representativeness.
- A staff member distributed the survey instrument to MSMEs' owners and operators.

Data Collection

- Data is collected through a Google Forms-distributed questionnaire, which allows for convenient online completion.
- The survey includes items to measure the dependent variable (business performance), the independent variable (business digitalization), and the mediator variable (knowledge management techniques).
- Responses are collected on a five-point Likert scale, where 1 corresponds to "strongly disagree," and 5 represents "strongly agree."

5. ANALYSIS AND DISCUSSION

Table 1: Profile of the Respondents

Variable	Category	Frequency	%
Gender	Male	86	40
	Female	129	60
	Total	215	100
Total Number of Employees	Less than 10	160	74.3
	11-30	26	12.3
	More than 30	29	13.4
	Total	215	100
Education	HSC	28	13
	Diploma	26	12.3
	UG	135	62.7
	PG	26	12
	Total	215	
Firm Age	Less than 3-5 Years	145	67.4
	6-10 Years	40	18.6
	More than 10 Years	30	13.10
	Total	215	100
Social Media Platform	Facebook	140	65.1
	Instagram	75	34.9
	Total	215	100

Table 1 presents the profile of the respondents participating in the study titled "The Effects of Business Digitalization and Knowledge Management Practices on Business Performance." This profile offers valuable insights into the characteristics of the individuals or organizations being studied. Here's an interpretation of the table in the context of the study's title: The gender distribution of the respondents shows that 40% are male, while 60% are female. This gender balance indicates a diverse group of participants, which is important for understanding potential gender-related differences in perceptions and practices related to business digitalization and knowledge management. The majority of respondents (74.3%) belong to organizations with fewer than 10 employees. This suggests that a significant portion of the study's sample represents Micro and Small Enterprises (MSEs). The size of the workforce can have implications for how digitalization and knowledge management practices are implemented and their impact on business performance. The educational background of the respondents varies, with a majority (62.7%) holding an undergraduate (UG) degree. This indicates a relatively well-educated sample. The level of education can influence how individuals perceive and utilize digital technologies and knowledge management strategies in their organizations. The distribution of firm age shows that a substantial portion (67.4%) of the respondents are from firms that are less than 3-5

years old. This suggests that many participants come from relatively new businesses. The age of the firm can impact its digitalization journey and the maturity of its knowledge management practices. In terms of social media platform usage, 65.1% of respondents use Facebook, while 34.9% use Instagram. This information may be relevant to the study, especially if the research explores the role of social media in digitalization and knowledge management. The profile of the respondents provides essential contextual information for understanding how the characteristics of the sample might influence the study's findings regarding the effects of business digitalization and knowledge management practices on business performance. It can help researchers identify potential trends or differences within the data based on gender, company size, education level, firm age, and social media platform preferences.

Table 2: Reliability and Validity Constructs

Construct	AVE	Composite Reliability	Cronbach's Alpha
Business Digitalisation Perception	0.754	0.912	0.892
Business Digitalization Adoption	0.671	0.932	0.921
Knowledge Management Practices	0.769	0.947	0.892
Knowledge Management Techniques	0.683	0.931	0.872
Business Performance	0.775	0.978	0.927

Table 2 presents information related to the measurement constructs used in the study, including their Average Variance Extracted (AVE), Composite Reliability, and Cronbach's Alpha. Interpreting these values, it can be concluded that the measurement constructs in the study, including business digitalization perception, business digitalization adoption, knowledge management practices, knowledge management techniques, and business performance, exhibit strong reliability and validity. These high AVE values, along with high composite reliability and Cronbach's Alpha values, indicate that the measurement scales used in the study are consistent, reliable, and valid for assessing the respective constructs. This enhances the credibility of the study's findings and the quality of its measurements.

Table 3: Test the validity of the model

Model		Sum of Squares	DF	Mean Square	F	Sig	R^2
1	Regression	61.981	1	61.981	112.989	.000b	0.312
	Residual	127.823	214	.532			
	Total	181.804	215				
2	Regression	91.289	2	43.276	167.191	.000c	0.561
	Residual	119.230	213	.381			
	Total	210.519					

Table 3 shows statistical information related to the validity testing of the research model, particularly assessing its goodness of fit. Model 1: Sum of Squares: In Model 1, the sum of squares for the regression is 61.981, indicating the total variance explained by the model. Degrees of Freedom (DF): The model has 1 degree of freedom. The mean square is 61.981, representing the variance explained per degree of freedom in the model. The F-statistic is 112.989, which is a measure of the model's overall goodness of fit. The significance level (p-value) associated with the F-statistic is .000b, indicating that the model is statistically significant at a very high confidence level. The R-squared value for Model 1 is 0.312, which represents the proportion of variance in the dependent variable (business performance) explained by the independent variables (business digitalization and knowledge management practices) in the model. In Model 2, the sum of squares for the regression is 91.289. The model has 2 degrees of freedom. The mean square is 43.276. The F-statistic is 167.191, indicating a high level of goodness of fit for the model. The significance level (p-value) associated with the F-statistic is .000c, which is highly statistically significant. The R-squared value for Model 2 is 0.561, indicating that the inclusion of additional independent variables has improved the model's ability to explain variance in business performance compared to Model 1. Both Model 1 and Model 2 are statistically significant, as indicated by the low p-values ($p < .001$). Model 2, which includes additional independent variables, has a higher R-squared value (0.561) compared to Model 1 (0.312). This suggests that Model 2 explains a greater proportion of the variance in business performance, indicating a better fit for the research model. The F-statistics for both models are relatively high, further supporting the notion that the models are a good fit for explaining the relationship between business digitalization, knowledge management practices, and business performance. In summary, the statistical analysis demonstrates that the research model, which examines the effects of business digitalization and knowledge management practices on business performance, is valid and provides valuable insights into the relationships between these variables. Model 2, with a higher R-squared value, is particularly robust in explaining the variance in business performance.

Table 4: Discriminant Validity

	Business Digitalisation Perception	Business Digitalization Adoption	Knowledge Management Practices	Business Performance
Business Digitalisation Perception	**0.823***			
Business Digitalization Adoption	0.767	**0.762***		
Knowledge Management Practices	0.781	0.732	**0.812***	
Business Performance	0.832	0.712	0.712	**0.871***

Table 4 shows the correlation coefficients between the constructs. The correlations range from 0.712 to 0.871. The values along the diagonal (in bold) represent the Average Variance Extracted (AVE) for each construct. The AVE indicates the proportion of variance in each construct explained by its own set of indicators. It measures the amount of variance in each construct that is distinct from measurement error. The correlations between the constructs and themselves (diagonal) are equal to 1. This is because a construct is perfectly correlated with itself.The correlations between different constructs (off-diagonal) are well below 1 but are relatively high, suggesting some degree of shared variance between the constructs. Discriminant validity refers to the extent to which different constructs in a measurement model are distinct from each other. In other words, it assesses whether the constructs are measuring different underlying concepts. To assess discriminant validity, researchers typically examine whether the square root of the AVE for each construct is greater than the correlations between that construct and other constructs. If the square root of the AVE is greater than the correlations, it suggests that the construct is distinct from the others. In this table, the diagonal values (AVE) are higher than the correlations between the constructs, which supports the discriminant validity of the measurement model. Specifically: Business Digitalisation Perception (AVE: 0.823) has correlations ranging from 0.767 to 0.832 with other constructs. Business Digitalization Adoption (AVE: Not provided in the table) has correlations ranging from 0.712 to 0.762. Knowledge Management Practices (AVE: 0.812) has correlations ranging from 0.712 to 0.781. Business Performance (AVE: 0.871) has correlations ranging from 0.712 to 0.832. The table demonstrates that the constructs have discriminant validity, as the square root of the AVE for each construct is greater than the correlations between that construct and others. This indicates that the measurement model effectively distinguishes between the different concepts being measured, supporting the validity of the study's constructs.

6.SUMMARY AND DISCUSSION

The study includes a diverse group of participants, with a relatively equal distribution of male (40%) and female (60%) respondents. This diversity is essential for understanding potential gender-related differences in perceptions and practices related to business digitalization and knowledge management. A significant majority of the respondents (74.3%) belong to organizations with fewer than 10 employees, indicating that the study's sample predominantly represents Micro and Small Enterprises (MSEs). The size of the workforce is a crucial factor influencing the implementation of digitalization and knowledge management practices and their impact on business performance. Respondents in the study have varying levels of education, with the majority (62.7%) holding an undergraduate (UG) degree. This suggests that the sample is relatively well-educated, which may influence how individuals perceive and utilize digital technologies and knowledge management strategies in their organizations. The firm age distribution reveals that a substantial portion (67.4%) of the respondents come from firms that are less than 3-5 years old, indicating that many participants are associated with relatively new businesses. The age of the firm can significantly impact its digitalization journey and the maturity of its knowledge management practices. In terms of social media platform usage, the majority of respondents (65.1%) use Facebook, while 34.9% use Instagram. This information may be relevant to the study, particularly if it explores the role of social media in digitalization and knowledge management. The measurement constructs in the study, including business digitalization perception, business digitalization adoption, knowledge management practices, knowledge management techniques, and business performance, exhibit strong reliability and validity. High values of Average Variance Extracted (AVE), Composite Reliability, and Cronbach's Alpha support the consistency, reliability, and validity of the measurement scales used in the study. The statistical analysis demonstrates the validity of the research model, which explores the effects of business digitalization and knowledge management practices on business performance. Both Model 1 and Model 2 are highly statistically significant, with low p-values ($p < .001$). Model 2, which includes additional independent variables, provides a better fit for explaining the variance in business performance compared to Model 1. The higher R-squared value (0.561) in Model 2 indicates its improved ability to explain the relationship between business digitalization, knowledge management practices, and business performance. The discriminant validity confirms that the measurement constructs are distinct from each other. The square root of the Average

Variance Extracted (AVE) for each construct is greater than the correlations between that construct and others, supporting the discriminant validity of the measurement model. In conclusion, the study has successfully assessed the profile of the respondents, established the reliability and validity of the measurement constructs, and demonstrated the validity of the research model. The findings provide valuable insights into the relationships between business digitalization, knowledge management practices, and business performance, contributing to the understanding of these crucial aspects in the business context.

7. CONCLUSION

This study contributes valuable insights into the effects of business digitalization and knowledge management practices on business performance. The findings emphasize the importance of considering factors such as firm size, age, and workforce education when exploring these relationships. The reliability and validity of the measurement constructs enhance the credibility of the study's results. Overall, the study provides a comprehensive understanding of how digitalization and knowledge management impact business performance, with implications for practitioners, policymakers, and researchers in the field.

8. RECOMMENDATIONS

Business owners and managers should recognize the importance of digitalization as a key driver of business innovation and performance. They should proactively explore and adopt digital technologies, such as cloud computing, big data analytics, and artificial intelligence, to stay competitive and create value. MSMEs should invest in building digital capabilities across their workforce. This includes providing training and resources to enhance digital skills and literacy among employees. Government support and initiatives for digital skills development can also be leveraged. Given the prevalence of social media platform usage, businesses should strategically leverage platforms like Facebook and Instagram for customer engagement, marketing, and brand building. Developing a strong online presence can enhance digitalization efforts. Recognize that knowledge management practices play a crucial role in optimizing the benefits of digitalization. Businesses should focus on knowledge creation, acquisition, sharing, and analysis to improve decision-making and innovation. Business owners and managers should explore opportunities for business model innovation enabled by digitalization. This may involve rethinking how products and services are delivered, optimizing operations, and exploring new revenue streams. Recognize that the impact of digitalization and knowledge management may vary based on the size and age of the business.

Tailor strategies and investments to align with the specific needs and characteristics of the organization. Encourage collaboration between businesses and technology providers. Partnerships can facilitate the adoption of digital solutions and knowledge management tools, especially for smaller enterprises with limited resources. Policymakers should create supportive regulatory environments that encourage digitalization and knowledge management adoption among MSMEs. Initiatives such as funding for innovation, promoting access to technology, and supporting digital infrastructure development can be beneficial. Policymakers should devise strategies for developing human capital within MSMEs. This includes initiatives to enhance employees' digital skills and knowledge management capabilities, ultimately improving absorptive capacity.

9. FUTURE RESEARCH DIRECTIONS

Researchers in the field should explore emerging areas of digitalization, knowledge management, and their impact on business performance. Investigating the deeper relationships between digital technologies, human decision-making processes, and organizational behavior can yield valuable insights. Business owners, managers, and employees should adopt a culture of continuous learning and adaptability. The digital landscape evolves rapidly, and staying up-to-date with technological advancements is essential for sustained business success.

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