DIGITAL TRANSFORMATION DRIVERS FOR INDONESIAN MSMES

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Abstract

Digital transformation is imperative for Micro, Small, and Medium Enterprises (MSMEs) to endure and thrive within the dynamic contemporary business environment. Despite the Indonesian government's digital transformation goals for MSMEs, the realization of this goal remains far. This study aims to identify the key factors influencing the digital transformation of Indonesian MSMEs. Drawing from extensive prior research, we investigate the impact of government support, community support, digital orientation, and digital capabilities on MSMEs' digital transformation, and its effect on financial performance. To achieve this, an online survey was disseminated, capturing responses from 324 participants, and the data was analyzed using the SmartPLS 4. This research found that government support, digital orientation, and digital capabilities significantly influence digital transformation. However, community support shows no significant impact. Furthermore, our research reveals a substantial positive correlation between digital transformation and improved financial performance in Indonesian MSMEs, highlighting the profound business benefits of embracing digitalization. These findings emphasize the need to strengthen internal factors as a critical driver for accelerating digital transformation in Indonesian MSMEs.

Keywords: Government Support, Community Support, Digital Orientation, Digital Capability, Financial Performance

INTRODUCTION

Micro, Small, and Medium Enterprises (MSMEs) hold an important role in the Indonesian economy, contributing significantly to job creation, entrepreneurship promotion, and Gross Domestic Product (GDP). According to the Coordinating Ministry for Economic Affairs (Limanseto, 2021) the country boasts 64,2 million MSMEs, contributing 61,07% to the GDP, amounting to 8.573,89 trillion rupiah. MSMEs also are known to employ 97% of the workforce and secure 60,4% of total investment. Additionally, they serve as catalysts for economic growth and development, particularly in rural areas, where they offer employment opportunities and stimulate local economic activity.

The COVID-19 pandemic brought significant challenges to Indonesian MSMEs, causing economic slowdown, supply chain disruptions, and declining consumer confidence. The UNDP Indonesia and LPEM FEB UI collaboration research in 2020 highlighted adverse effects: difficulty in sourcing raw materials (55%), distribution challenges (81%), decreased product demand (88%), income reduction (77%), profit decline (88%), and asset devaluation (53%). Social distancing policies worsen these issues, leading to income and demand reduction, with some MSMEs left without income (Lutfi et al., 2020). Supply chain problems inflated raw materials and production costs, compelling many MSMEs to pivot to online sales (Stewart et al., 2021). The percentage of MSMEs selling through digital platforms surged from 28% before COVID-19 to 44% during the pandemic (United Nations Development Programme Indonesia & Lembaga Penyelidikan Ekonomi dan Masyarakat Fakultas Ekonomi dan Bisnis Universitas Indonesia, 2020).

This transition, while beneficial, presented obstacles. Many MSMEs lacked networks for digital knowledge sharing and needed extensive training for online sales, especially older entrepreneurs unfamiliar with digital technology (Stewart et al., 2021; United Nations Development Programme Indonesia & Lembaga Penyelidikan Ekonomi dan Masyarakat Fakultas Ekonomi dan Bisnis Universitas Indonesia, 2020). Nevertheless, digitalization has shown many benefits. It connected MSMEs with customers, enhanced their competitive edge, and improved crisis response, ultimately bolstering business sustainability (Guo et al., 2020; Subriadi & Kusuma Wardhani, 2022; Teng et al., 2022).

The government strongly supported this transition, targeting 30 million MSMEs to join the digital ecosystem by 2024 (Wisnubroto, 2022). Several programs were launched to support this, such as Bank Indonesia's (the central bank) five MSME digitalization programs. However, the gap between the government's digital transformation target and realization remains, prompting this research. By June 2022, 19.5 million MSMEs, constituting 65% of the target, were already active on e-commerce platforms. By investigating factors influencing MSME digital transformation in Indonesia, this study seeks to provide recommendations for accelerating the achievement of digital transformation goals.

Existing research has identified critical factors influencing digital transformation in MSMEs. Ghobakhloo and Iranmanesh (2021) identified external support for digitalization, resource availability, and management competency for digital transformation as key factors. This research recognizes government support as a component of external support. Furthermore, Rupeika-Apoga et al. (2022) found that digital orientation and digital capability influence digital transformation and subsequently impact financial performance. This study seeks to expand on these findings in the Indonesian context, considering the general inclination of MSME owners to participate in business communities and organizations as a basis for incorporating community support into the research framework.

REVIEW OF LITERATURE

Many MSME owners state that achieving digital transformation is determined by government support, particularly in the financial domain, which encompasses direct assistance and tax incentives (Rupeika-Apoga et al., 2022). The government must continue its backing for innovation and the digital transformation endeavors of SMEs, particularly as a prevention measure against prolonged crises that may slow down SME investments in technology and innovation (Endrodi-Kovács & Stukovszky, 2022). The government's role in this area covers the establishment of digital platforms, promotion of mobile and digital payment systems, provision of digital training, and facilitation of a digital collaboration ecosystem (Chen et al., 2021).

In light of the insights derived from these studies, this research asserts the pivotal role of the government in fostering digital transformation within MSMEs. Consequently, we formulate the following hypothesis:

H1: Government support has a positive impact on digital transformation.

While existing research lacks a direct connection between community support and digital transformation, we opted to incorporate this factor into our investigation due to our observations. Our observations indicate a notable presence of business communities in Indonesia, and they appear to play a significant role in the advancement of MSMEs. These communities have emerged through grassroots initiatives and have also been facilitated by government and private institutions.

In Indonesia's context, MSME communities serve as channels for businesspeople to express their aspirations to the triple helix entities, (the government, large corporations, and universities) (Noya et al., 2023). Furthermore, these communities function as fountains of innovation and information while offering support to MSMEs in their entrepreneurial journey, whether at the inception stage or during the process of scaling up (Aina et al., 2018). Hence, we formulate the following hypothesis:

H2: Community support has a positive impact on digital transformation.

Rupeika-Apoga et al. (2022) explain that digital orientation indicates a business's heightened focus on the digital business landscape, encompassing the utilization of digital technology. In this context, the scope of digital technology can be interpreted as an array of digital tools and platforms that empower companies to achieve strategic growth (Kindermann et al., 2021). Beyond the technological dimension, digital orientation also encompasses the strategic initiatives pushing digital transformation and granting competitive advantages. Consequently, companies with a strong digital orientation are more inclined to take part in the path of digital transformation (Rupeika-Apoga, et al., 2022). Building upon the insights gathered from prior research, the hypothesis can be summarized as follows:

H3: Digital orientation has a positive impact on digital transformation.

In the context of Small and Medium Enterprises (SMEs), three central factors prove advantageous for digital transformation: investment in digital technology, enhancement of employee digital skills, and the formulation of digital transformation strategies. These

factors collectively contribute to the improvement of performance and the maintenance of long-term growth (Teng et al., 2022). Moreover, digital transformation within SMEs is driven by several elements involving managerial cognition, the cultivation of social capital, human resource development, capital investment, and the enhancement of organizational capacity (Anim-Yeboah et al., 2020). Consequently, we put the following hypotheses:

H4: Digital capability has a positive impact on digital transformation.

The relationship between the extent of digital transformation and profit-oriented financial performance exhibits a U-shaped correlation (Guo & Xu, 2021). In addition, a positive correlation has been established between digital transformation and financial performance (Teng et al., 2022). Rupeika-Apoga et al. (2022) have highlighted a disparity in the income generation probability between SMEs capable of independently managing digital transformation and those that lack such capability. Furthermore, digital transformation has been acknowledged for its positive influence on company performance, measured by criteria such as profitability, customer retention, return on investment, and sales growth in comparison to direct competitors, as well as the degree of organizational innovation (Osmundsen et al., 2018). Based on the insights obtained from these studies, we promote the following hypotheses:

H5: Digital transformation has a positive impact on financial performance.

Hence, the research empirical model (Figure 1) can be visualized as follows:

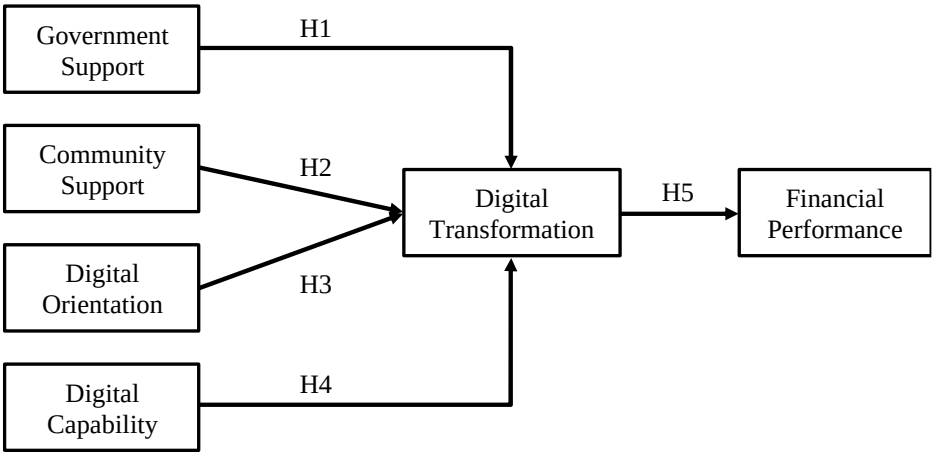

Figure 1.
Empirical Model

RESEARCH METHOD

In this study, a survey methodology was employed to gather primary data for subsequent empirical analysis. The targeted respondents were owners of Micro, Small, and Medium Enterprises (MSMEs) who were over 17 years of age and operated online shops on various digital platforms, which involved e-commerce, social media platforms such as Facebook, Instagram, and TikTok, as well as instant messaging applications like WhatsApp. The research focused on MSMEs in Indonesia, and the chosen sampling technique was nonprobability sampling using a voluntary sampling method.

To compile primary data, questionnaires were disseminated to MSME owners through social media channels, specifically Instagram, and instant messaging applications, such as WhatsApp. All constructs were quantified using Likert-type scales that featured a five-point response format spreading from “strongly disagree” to “strongly agree”. The selection criteria for the MSMEs included in the sample complied with the guidelines outlined in Government Regulation Number 7 of 2021, which defined the eligibility of businesses with a maximum annual sales threshold of IDR 50 billion. The data collection phase took place between July and September 2023, resulting in the collection of 324 usable surveys. Validity and reliability tests were initially conducted on measurement items. Out of 47 constructs, 15 failed the tests, leading to the inclusion of 32 constructs for the final data collection. Table 1 shows the measurement items used in the questionnaire.

Table 1.
Measurement Items

Questionnaire Items	Code	Source
In Indonesia, government policies consistently favor MSMEs	GS7	Zamberi Ahmad and Xavier (2012)
In my city, the support for MSMEs is a high priority for policy at the local government level	GS9	
In Indonesia, MSMEs can get most of the required permits and licenses in about a week	GS10	
In Indonesia, the amount of taxes is NOT a burden for MSMEs	GS11	
In Indonesia, taxes and other government regulations are applied to MSMEs in a predictable and consistent way	GS12	
In Indonesia, coping with government bureaucracy, regulations, and licensing requirements is not unduly difficult for MSMEs	GS13	
In Indonesia, science parks and business incubators provide effective support for MSMEs	GS14	
In Indonesia, there are an adequate number of government programs for MSMEs	GS15	
In Indonesia, government programs aimed at supporting MSMEs are effective	GS16	
My business associates in my community often share information about the reputation of raw material provider	CS1	Fachrunnisa et al. (2013)
My business associates in my community often share information about new business opportunities in the areas of our business	CS2	
My business associates in my community often share critical information for the advancement of our business	CS4	
My business associates in my community are ready to help if I get in trouble related to my business	CS5	
There is an information exchange business knowledge among my business associates in my community	CS6	
I am committed to using digital technologies in developing my product	DO1	Khin and Ho (2018)
My products have superior digital technology	DO2	
I always look out for opportunities to use digital technology in my business innovation	DO4	

Questionnaire Items	Code	Source
My business is responsive to seeing opportunities in the application of digital technology	DO8	Sultoni et al. (2022)
My business can adapt to developments in digital technology	DO9	
I am committed to being adaptive to developments in digital technology	DO13	
I have the skill to acquire important digital technologies	DC1	Khin and Ho (2008)
I have the skill to identify new digital opportunies	DC2	
I am able to respond to digital transformation	DC3	
I have the skill to master the state-of-the-art digital technologies	DC4	
I have the skill to develop innovative products using digital technology	DC5	
My company emphasizes the use of digital technology in its business activities	DT1	Fachrunnisa et al. (2020)
My company summarizes some of its business processes because it switches to the use of digital technology	DT2	
My company increases the mastery of digital technology in its business processes	DT3	
Digital transformation decreases operational cost	FP1	Olaru et al. (2014)
Digital transformation increases profit	FP2	
Digital transformation increases sales volume	FP3	
Digital transformation increases turnover	FP4	

RESULTS AND DISCUSSION

This study's respondents were predominantly women, with 232 women (71,6%) participating. This demographic alignment is consistent with data from the Ministry of Cooperatives and Small and Medium Enterprises in 2022, which reported that 64% of MSME participants in Indonesia are women (Office of Assistant to Deputy Cabinet Secretary for State Documents & Translation, 2023). Additionally, in the Indonesian context, MSMEs frequently serve as a way for families to increase their income. Consequently, when the primary breadwinner is typically male, women often engage in side businesses, leveraging the flexibility of online platforms.

Furthermore, a substantial majority of the study's respondents belonged to Generation Y, or millennials, consisting of 200 individuals (61,7%). This generation came of age during a period of rapid internet development and is known for its tendency to spend a significant portion of its time in the digital realm (Nasionalita & Nugroho, 2020). Thus, it is unsurprising that the survey, which targeted MSMEs engaged in online sales, attracted a substantial number of respondents from this generation.

Additionally, the study's respondents predominantly comprised micro-business owners, amounting to 285 individuals (88%). This demographic alignment is consistent with data from the Ministry of Cooperatives and SMEs, which indicates that micro-businesses, characterized by a maximum annual sales figure of IDR 2 billion, constituted a dominant force, encompassing 96,68% of the population (Sasongko, 2020). Conversely, a smaller proportion of respondents, totaling 66 individuals (20,4%), had received government assistance. This assistance included provisions such as business capital loans, technical guidance, and business support. More detailed characteristics of the respondents are shown in Table 2.

Table 2.

Sample Description

Demographic		n	%
Gender	Male	92	28.4
	Female	232	71.6
Generation	Baby Boomers (1946-1964)	5	1.5
	Gen X (1965-1980)	59	18.2
	Gen Y (1981-1996)	200	61.7
	Gen Z (1997-2012)	60	18.5
Residence (Island)	Sumatera	94	29
	Jawa	166	51.2
	Kalimantan	10	3.1
	Sulawesi	44	13,6
	Maluku	4	1.2
	Papua	2	0.6
	Bali and Nusa Tenggara	4	1.2
Educational Level	Elementary School	1	0.3
	Junior High School	9	2.8
	Senior High School	82	25.3
	Diploma	40	12.3
	Bachelor	169	52.2
	Post-graduate	23	7.1

Size	Micro	285	88
	Small	29	9
	Medium	10	3
Demographic		**n**	**%**
Industry	Food and Beverages	186	57.4
	Fashion	40	12.3
	Services	33	10.2
	Handicrafts	23	7.1
	Furniture and Appliances	11	3.4
	Agriculture and Livestock	11	3.4
	Multiple Categories	8	2.5
	Books and Reading Materials	6	1.9
	Cosmetics and Health	6	1.9
Government Assistance	Yes	66	20.4
	No	258	79.6
Member of Business Community	Yes	161	49.7
	No	163	50.3
Technical Guidance	Yes	157	48.5
	No	167	51.5

The data was subsequently analyzed using the SmartPLS 4 software. The structural model explained the relationships between distinct latent variables (constructs). Meanwhile, the measurement model described the relationships between the latent variables and the observed variables employed for measuring said latent variables. Figure 2 illustrates the proposed structural model, including constructs such as government support, community support, digital orientation, digital capability, digital transformation, and financial performance.

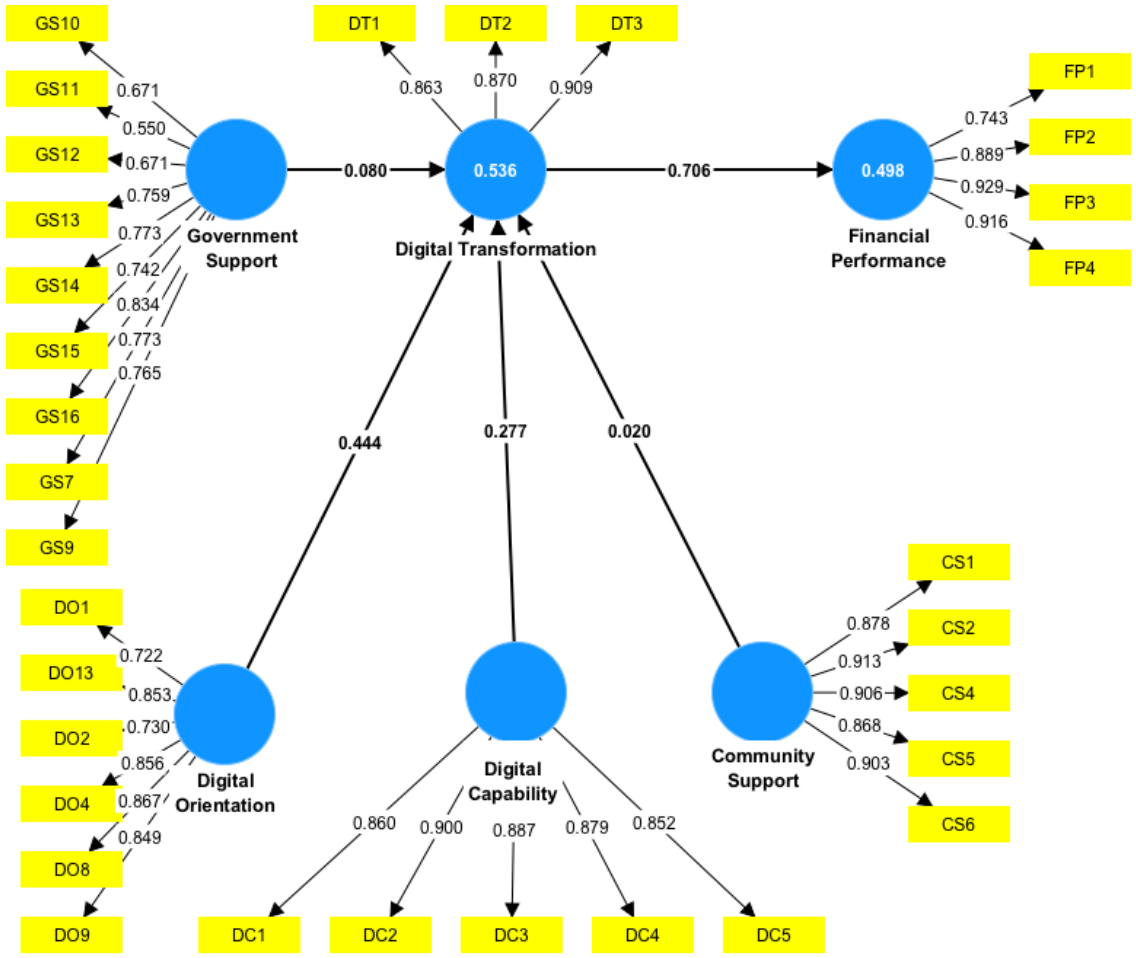

Figure 2.
SEM Model Showing Coefficients

Table 3 indicated that all measurements met the specified criteria, with composite reliability values exceeding 0.7, and average variance extracted values surpassing 0.5. Additionally, discriminant validity was assessed, revealing that the variables exhibited stronger correlations with their parent factors in comparison to variables outside of their respective parent constructs.

Table 3.
Reliability, Convergent, and Discriminant Validity (CR > 0.7, AVE >0.5)

	CR	AVE	GS	CS	DO	DC	DT	FP
GS	0.911	0.534	**0.731**					
CS	0.952	0.798	0.578	**0.894**				
DO	0.922	0.665	0.409	0.468	**0.815**			
DC	0.943	0.767	0.367	0.429	0.794	**0.876**		
DT	0.912	0.776	0.375	0.393	0.706	0.667	**0.881**	
FP	0.927	0.761	0.368	0.374	0.654	0.551	0.706	**0.872**

The model fit was assessed using the standardized root mean square residual (SRMR). A value less than 0.10, or even as low as 0.08 in a more conservative evaluation, is considered indicative of a good fit. In the case of this PLS-SEM model, the SRMR value equated to 0.069. The model satisfied all the requisite index conditions, suggesting that the SEM results were reliable. Table 4 presented the relationships among the variables within the proposed model, revealing the following: 1) Government support had a positive impact on digital transformation, substantiating H1; 2) Community support did not exhibit a positive effect on digital transformation, leading to the rejection of H2; 3) Digital orientation had a positive impact on digital transformation, validating H3; 4) Digital capability demonstrated a positive influence on digital transformation, confirming H4; and 5) Digital transformation was positively impacted financial performance, thus supporting H5.

Table 4.
Hypothesis Testing Results

Relationships	Coefficient	STDEV	p-Value	Hypothesis
DT ← GS	0.080	0.047	0.089*	H1 is supported
DT ← CS	0.020	0.050	0.687	H2 is not supported
DT ← DO	0.444	0.079	0.000**	H3 is supported
DT ← DC	0.277	0.080	0.001**	H4 is supported
FP ← DT	0.706	0.028	0.000**	H5 is supported

Note: (*) significant at 10%, (**), significant at 5%,

The Effect of Government Support on the Digital Transformation of MSMEs

The results obtained suggest that government support had a positive effect on digital transformation, thus confirming H1. This finding aligns with Ghobakhloo and Iranmanesh (2021), who asserted that external support for digitalization serves as an initial and critical step in ensuring the success of SME digital transformation. However, it is noteworthy that the impact of government support appeared to be comparatively weaker when contrasted with the other two variables. This is explainable by the fact that significant and prosperous digital platforms within any country are typically developed by private companies rather than government entities. Governments more often assume a regulatory role and can create policies to facilitate the interests of MSMEs. Moreover, they can act as enablers by implementing programs that offer multifaceted opportunities to MSMEs, such as resource access, training, and various other forms of assistance. One of the notable assistance programs extended to MSMEs by the Indonesian government is the UMKM Level Up (MSME Level Up) initiative under the Ministry of Communication and Information Technology. Furthermore, the government has introduced the *"Bangga Buatan Indonesia"* (Proud of Indonesian Made Product) movement, which involves collaboration with various e-commerce platforms to prioritize the promotion of locally-produced MSME goods.

The Effect of Community Support on the Digital Transformation of MSMEs

The research results revealed that community support did not show a significant impact on digital transformation, leading to the rejection of H2. Several factors may contribute to this outcome. First, some communities independently conduct their programs, while others operate with government funding, blurring the distinction between their support and government assistance. Second, since there has been no prior research exploring the direct relationship between these two variables, the measurement instrument employed may require refinement to enhance its representativeness.

Third, the selection of respondents can also influence these findings. It is plausible that insights would be more pertinent if respondents specifically tailored to the community's objectives were engaged. The type of community to which respondents belong can also play a role, as not all business communities share a common focus on digital transformation. Consequently, selecting a community that provides a curriculum and

programs designed to enhance its members' understanding of digital technology and its applications would likely yield more valuable insights.

The Effect of Digital Orientation on Digital Transformation of MSMEs

The analysis confirmed that digital orientation exhibited the most substantial positive effect on digital transformation, thus proving H3. This outcome aligns with a prior study, which proposed that companies with a strong digital orientation are more inclined to embrace digital transformation (Rupeika-Apoga et al., 2022). By cultivating a digital orientation and subsequently demonstrating agility in implementing new digital technologies, MSMEs can effectively maintain their market relevance, ensuring customer loyalty and the attraction of new clientele. A related study conducted by Ricci et al. (2021) yielded a similar result, revealing that SMEs' capacity to recognize diverse digital opportunities serves as a full mediator in the relationship between external knowledge search strategies (both in depth and breadth) and the extent of industry 4.0 technology adoption. This technology covers areas such as cybersecurity, information and digital technology, collaborative robotics, augmented reality, and virtual reality.

The Effect of Digital Capability on Digital Transformation of MSMEs

The results demonstrated that digital capability had a positive impact on digital transformation, thus confirming H4. This capability holds significant importance, particularly considering the perpetual evolution of technology that necessitates continuous study and adaptation for business growth. This finding is in line with the research conducted by Matarazzo et al. (2021), which underscores the critical role of the ability to sense and learn as catalysts for digital transformation. Within the context of SMEs, the primary factors conducive to digital transformation include investments in digital technology, enhancing employee digital skills, and formulating digital transformation strategies, as explained by Teng et al. (2022).

Furthermore, digital transformation among SMEs is encouraged by a various spectrum of elements, including managerial cognition, the cultivation of social capital, human resource development, capital investment, and the expansion of organizational capacity, as demonstrated in the study by Anim-Yeboah et al. (2020). Faizurrohman et al. (2021) also stated that digital business should be supported by knowledge of understanding the use of the Internet as a product communication tool. This study offers a complementary

perspective to the findings of Ghobakhloo and Iranmanesh (2021), emphasizing the necessity for MSMEs to possess capabilities in change management and strategic digitalization planning to attain proficiency across the information, digital, operational, and cyber domains.

The Effect of Digital Transformation on the Financial Performance of MSMEs

The analysis indicated that digital transformation exerted a significant positive impact on financial performance, thus confirming H5. This finding corroborates the research conducted by Teng et al. (2022), which revealed a positive correlation between digital transformation and financial performance. Digital transformation is further recognized for its affirmative influence on company performance, as measured by metrics such as profitability, customer retention, return on investment, and sales growth in comparison to direct competitors, in addition to fostering organizational innovation (Osmundsen et al., 2018).

This outcome aligns with prior research that emphasized the indirect influence of the ability to manage digital platforms on SME entrepreneurial performance, particularly in terms of sales growth, achieved through adept network management (Cenamor et al., 2019). This relationship is closely tied to the use of digital technology, which opens new sales channels, thereby increasing sales volume. The results of this study also resonate with the findings of Matarazzo et al. (2021), who found that digital instruments played a contributory role in innovating business models, establishing distribution channels, and devising novel methods to generate and deliver value to distinct customer segments.

CONCLUSION

Numerous scientific studies have affirmed that the beginning of digital transformation is not spontaneous but is triggered by various catalysts, with the most recent being the COVID-19 pandemic. However, following this, this research underscores the heightened significance of internal factors in driving digital transformation. Among these, digital orientation and digital capability emerge as the foremost influencers, followed by government support. Conversely, community support does not exhibit a significant influence.

The practical implications of this research are principally aimed at MSME managers and owners, as well as policymakers. Fostering digital orientation and digital capabilities is most effectively achieved through a responsive approach to identifying and harnessing digital opportunities. To enhance this, the researchers recommend that MSME owners cultivate a clear vision and mission regarding the incorporation of digital technology into their operations. Continuous learning and the maintenance of strong business networks are essential for increasing exposure to new opportunities.

Moreover, government and affiliated organizations should play a vital role in providing education on digital technology to supplement the knowledge and capabilities of MSME owners and managers. Additionally, this research unveils that, among the government support variables, the impact of licensing bureaucracy and the consistency of government regulations related to MSMEs is relatively weak. This highlights the necessity for the government to not only formulate sound regulations but also ensure their effective implementation in practice.

Nevertheless, it is crucial to acknowledge the limitations of this research. Firstly, this study did not necessitate respondents to be part of a community or receive government assistance, which could have enriched the insights. Future research may consider imposing these criteria to dig deeper into the subject. Furthermore, further research might focus on specific demographic groups, such as women, Generation Y, and micro-business owners, to yield more specialized insights into the factors shaping digital transformation within these segments. Additionally, future investigations can explore more into the effectiveness of distinct government programs in advancing digital transformation among MSMEs in Indonesia.

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