Development of MSMEs: The Relationship Between Digital Literacy and Digital Transformation

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ABSTRACT

In the digital era, both individual and organizational activities have undergone significant changes due to advancements in digital technology. Micro, Small, and Medium Enterprises (MSMEs), as providers of products or services, must keep pace with these developments to offer the best services to customers. Digital transformation has become imperative for MSMEs to adapt to the current digital era, facilitating the development and creation of new processes, systems, and business models to drive competitiveness and skill development. The ability to leverage digital resources presents a challenge for MSMEs in digital transformation, making digital literacy a critical factor in optimizing the use of digital resources. This research explores the relationship between digital literacy and digital transformation among MSME business actors. The research employs a quantitative methodology. Respondents are MSMEs selected through purposive sampling. The research subjects consisted of 65 MSME business actors with MSME characteristics within the Bangka Belitung Islands province and had a number of workers ranging from 1-99 people. Data collection methods use Likert scales, and data analysis is performed using correlation tests. The results show a correlation coefficient (r_{xy}) of 0.839 with a significance value of 0.000 ($p < 0.01$). The coefficient of determination (R^2) is 0.704, indicating that digital literacy contributes 70.4% to digital transformation. This study reveals a positive relationship between digital literacy and digital transformation among MSME business actors in the Bangka Belitung Islands Province. The research provides broader insights for MSME actors in Indonesia to enhance digital literacy and digital transformation to navigate market changes and advancements better.

Keywords: digital literacy, digital transformation, MSMEs

Introduction

The advancing digital era demands rapid individual adaptability in facing technological changes and continuously evolving markets. Especially during the COVID-19 pandemic crisis, even in Indonesia, a VUCA (Volatility, Uncertainty, Complexity, Ambiguity) situation occurred, requiring human resource preparedness to adapt to the disruptive era with increasing disturbances due to changes (Surya & Yuniasanti, 2023). Every individual activity is influenced by technology, demanding each individual, including MSME business actors, to adapt. According to Law Number 20 of 2008, a company classified as an MSME is a small company owned and managed by an individual or owned by a small group of people with certain wealth and income (Hanim & Noorman, 2018).

Profound changes in consumer behavior and digital technological advancements have fundamentally altered the business landscape. Bruner explains that in social constructivism,

individuals actively build knowledge through experience and interaction with others (Rannikmäe et al., 2020). The relationship and interaction of MSMEs with customers build new knowledge for MSME business actors to think critically and find ways to adapt to new conditions. Therefore, MSMEs need to consider digital transformation as a strategy. Digital transformation involves the use of digital technology and changes in organizational thinking and working methods. According to Westerman et al. (2011), digital transformation is a change from several combined effects of innovation and digital technology involving individuals, strategy, structure, processes, and business models to improve business performance. Digital transformation assists MSME business actors in improving their capabilities, skills, and readiness to make changes by utilizing digital technology to adapt to the digital market. Digital transformation in MSMEs enhances product processes, operations, competitive advantage, and market reach (Solechan et al., 2023).

Data from the Central Bureau of Statistics survey shows that many businesses will not engage in e-commerce in 2022. As many as 27,83% of businesses cited a lack of knowledge or skills. In one of the provinces in Indonesia, the Bangka Belitung Islands province, survey results show that the percentage of e-commerce with expert-level technology utilization is only 3,22%, while most are at the primary level at 72,57% (Badan Pusat Statistik, 2023). Previous survey results that many MSME business actors still need a deep understanding and knowledge of digital technology utilization. This condition becomes an obstacle to digital transformation.

Knowledge and understanding of digital technology are crucial in digital transformation. Low digital literacy among MSME business actors can lead to difficulties in adopting digital technology, reducing the chances of successful digital transformation. Digital literacy requires MSME business actors to have a deeper understanding and knowledge of utilizing digital technology. Consequently, MSME business actors will be better equipped to comprehend and utilize various digital resources available. Kane et al. (2015) state that more than digital technology, digital transformation requires digital skills, strategy, culture, and talent development.

Gilster defines digital literacy as the ability to understand, think critically, and use digital technology, especially the internet, to evaluate, interpret, and understand various formats (Lankshear & Knobel, 2016). The ability and knowledge to adopt and utilize digital resources will facilitate MSME business actors in executing digital transformation to develop and create new processes, systems, and business models, enhancing adaptation in the digital era.

Digital literacy is essential in digital transformation, particularly for MSMEs' success in adopting technology. Understanding the relationship between digital literacy and digital transformation can help MSME business actors develop strategies and improve business performance. Digital transformation involves applying technology to create new business models and requires awareness to enhance digital literacy, which drives organizational performance (Berliandaldo et al., 2021). Therefore, the relationship between digital literacy and digital transformation significantly impacts MSME business actors in building new knowledge, critical thinking, courage, and improved understanding in adapting to changes.

Based on the background, the purpose of this research is to determine the relationship between digital literacy and digital transformation among MSME business actors.

Methods

The research method used is quantitative. The data collection method used is the Likert scale with a correlation test data analysis method. The sampling technique employs purposivesampling. According to Sugiyono (2013), purposive sampling is a technique for determining samples with specific considerations, namely considering predetermined sample criteria. The characteristics of respondents in this research are MSMEs within the scope of the Bangka Belitung Islands province with 1 to 99 employees. The number of subjects obtained in this research is 65 MSME business owners.

The instruments used in this research are the digital literacy and digital transformation scales. The researcher adapted the digital literacy scale from Rezi Laras Ayu Mutiah (2022). The digital literacy scale consists of 16 items. The digital literacy scale obtained item discrimination coefficients ranging from 0.384 to 0.725 and a reliability test result of 0.894. The digital transformation scale was adapted from Nurcholisa Putri Sapta (2022). The digital transformation scale consists of 8 items. The digital transformation scale obtained total item discrimination coefficients ranging from 0.319 to 0.595 and a reliability test result of 0.786.

Results

The description of the subject data can be seen in the table below:

Table 1. Description of Subject Data

No	Description	Remark	Total	Percentage
1	Business Area	Pangkalpinang	30	46,2%
		Bangka	25	38,5%
		Bangka Belitung	7	10,8%
		Sungailiat	2	3,1%
		Kebintik	1	1,5%
2	Number of Workers	Micro 1-4	35	53,8%
		Samll 5-19	24	36,9%
		Medium 20-99	6	9,2%

Based on the descriptive data table of the research subjects above, 65 subjects match the characteristics of the research subjects: the business area and the number of employees. The business areas consist of Pangkalpinang with 30 respondents (46.2%), Bangka with 25 respondents (38.5%), Bangka Belitung with seven respondents (10.8%), Sungailiat with two respondents (3.1%), and Kebintik with one respondent (1.5%). The number of employees consists of micro-enterprises with 1-4 employees, comprising 35 respondents (53.8%); small enterprises with 5-19 employees, comprising 24 respondents (36.9%); and medium enterprises with 20-99 employees, comprising six respondents (9.2%).

The data description consists of two types of data: hypothetical data and empirical data. The results, which are data analysis results, explain the research findings.

Table 2. Research Data Description

Variable	N	Hypothetical Data				Empirical Data			
		Min	Max	Mean	SD	Min	Max	Mean	SD
Digital Literacy	65	16	64	40	8	35	64	50,82	7,790
Digital Transformation	65	8	32	20	4	14	32	24,38	4,425

The digital literacy scale produced a minimum empirical score of 35 and a minimum hypothetical score of 16. The maximum empirical score was 64, and the maximum hypothetical score was 64. The empirical mean was 50.82, and the hypothetical mean was 40.The empirical standard deviation was 7.790, and the hypothetical standard deviation was 8. The digital transformation scale produced a minimum empirical score of 14 and a minimum hypothetical score of 8. The maximum empirical score was 32, and the maximum hypothetical score was 32. The empirical mean was 24.38, and the hypothetical mean was 20.The empirical standard deviation was 4.425, and the hypothetical standard deviation was 4.

Table 3. Categorization of Digital Literacy

Category	Guideline	Score	N	Percentage
High	$X \geq M + SD$	$X \geq 48$	46	70,8%
Medium	$M - SD \leq X < M + SD$	$32 \leq X < 48$	19	29,2%
Low	X< M- SD	$X < 32$	0	0%
	Total		**65**	**100%**

Table 4. Categorization of Digital Transformation

Category	Guideline	Score	N	Percentage
High	$X \geq M + SD$	$X \geq 24$	40	61,5%
Medium	$M - SD \leq X < M + SD$	$16 \leq X < 24$	23	35,4%
Low	X< M- SD	$X < 16$	2	3,1%
	Total		**65**	**100%**

The researcher categorized the data based on the hypothetical data's mean scores and standard deviations, classified into three categories, as shown in Tables 2 and 3. It was foundthat digital literacy comprised a high category with 70.8% (46 respondents) and a medium category with 29.2% (19 respondents). There were no respondents in the low category, which is 0% (0 respondents). Therefore, the digital literacy of MSME business actors in the Bangka Belitung province is high. Digital transformation consists of a high category with 61.5% (40 respondents), a medium category with 35.4% (23 respondents), and a low category with 3.1%(2 respondents).

Thus, digital transformation among MSME business actors in the Bangka Belitung province is at a high level.

The normality test results for the digital literacy variable yielded a Kolmogorov-Smirnov significance value of 0.075 ($p > 0.05$), and the digital transformation variable yielded a Kolmogorov-Smirnov significance value of 0.200 ($p > 0.05$). Based on these Kolmogorov-Smirnov significance values, the digital literacy and digital transformation variables are generally distributed according to the normality test rules. The linearity test results for the digital literacy variable with the digital transformation variable yielded an F value of 135.664 with a significance of linearity of 0.000 ($p < 0.05$). According to the linearity test rules, the two variables have a linear relationship. Based on the hypothesis test results using Pearson's product-moment correlation analysis, the correlation coefficient (r_{xy}) was 0.839 with a significance value of 0.000 ($p < 0.01$). These results show that a relationship exists between digital literacy and digital transformation among MSME business actors in the Bangka Belitung province. Thus, the hypothesis proposed in this research can be accepted. This positive relationship indicates that the higher the digital literacy possessed by MSME business actors, the higher the success of MSMEs in digital transformation. Conversely, the lower the digital literacy of MSME business actors, the lower the success of MSMEs in digital transformation. The data analysis results showed a determination coefficient (R^2) value of 0.704, indicating that the digital literacy variable contributes 70.4% to the digital transformation variable, while other factors influence the remaining 29.6%.

Discussions

The correlation analysis results showed a (r_{xy}) value of 0.839 with a significance value of 0.000 ($p < 0.01$), indicating a positive relationship between digital literacy and digital transformation among MSME business actors. These results align with the hypothesis that the higher the digital literacy of MSME business actors, the higher the success of MSMEs in carrying out digital transformation. Conversely, the lower the digital literacy of MSME business actors, the lower the success of MSMEs in digital transformation. This means that the hypothesis in this research is accepted, showing that digital literacy is an essential factor influencing MSME business actors in carrying out digital transformation in their businesses.

This research aligns with Berliandaldo et al. (2021) who state that digital transformation involves applying technology to create new business models and requires awareness to enhance digital literacy to drive organizational performance. The digital transformation era without digital literacy poses a significant challenge for MSMEs.

Most MSMEs in the Bangka Belitung Islands Province exhibit high levels of digital literacy and digital transformation, at 70.8% (46 respondents) and 61.5% (40 respondents), respectively. This indicates a disparity with the initial data issues observed. The initial data from the Bangka Belitung Islands province showed that the percentage of e-commerce with technology utilization in the expert category could have been higher. However, the study results indicate that the majority of digital transformation in MSMEs in the Bangka Belitung Islands province falls into the high category, and digital literacy in MSMEs in the Bangka Belitung Islands province is also predominantly at a high level. This discrepancy in research data

can occur due to other factors. Fajar (2021) found that demographic background, social class, and regional characteristics influence individual information and communication technology utilization. This is consistent with the study by Salemink et al. (2017), which stated that within a country, urban and rural areas have different qualities of infrastructure, local culture, and skills.

The demographic data of the subjects show that most respondents have businesses in the Pangkalpinang area, the capital and administrative center of the Bangka Belitung Islands province. This could explain the difference in research data. The difference in regions, such as villages and cities, will undoubtedly affect each individual's response to digital development because each area has characteristics that will influence individual behavior. Bruner explains that knowledge is acquired through active interaction with the environment, where not only does the environment change but so does the individual (Kurniawan, 2021). Rakhmawan(2022) stated that the number of non-digital MSMEs in rural areas is higher than in urban areas, indicating that digitalization in rural areas can still be improved.

The government must support MSME progress in implementing digital transformation across all regions. Policies and community empowerment in rural areas need more attention. Additionally, infrastructure should be further developed. The lack of infrastructure in rural areas limits MSME business actors' ability to execute digital transformation. This is consistent with Salemink et al. (2017), who highlighted rural development in the digital era, where rural areas need more attention from urban areas regarding infrastructure, government support, local culture, and user empowerment to enable individuals to handle digital changes quickly.

This research found that digital literacy contributes 70.4% to digital transformation. This means that digital literacy is the most important factor determining success in digital transformation. MSME business actors with digital literacy capabilities are more capable and successful in digital transformation in their businesses. Kane et al. (2015) state that digital technology alone is insufficient for digital transformation; it requires digital skills, strategy, culture, and talent development.

The significant contribution of digital literacy to the success of digital transformation in MSMEs means that MSME business actors must pay more attention to and improve their digital literacy skills. Thus, MSME business actors can more easily implement changes in business such as collaboration, improvement of operational processes, competitiveness, worker skills, and business culture. A well-executed digital transformation has a positive impact on MSMEs. An organization must recognize the importance of digital transformation and how to leverage digital capabilities to create and drive organizational performance (Nwankpa & Roumani, 2016).

This research has limitations, including the need for more theoretical sources related to digital literacy and digital transformation in psychology and limited access to respondents willing to participate. Recommendations for this study include increasing the number of respondents to obtain more information. Additionally, a more detailed development of instrument items is suggested to improve measurement accuracy and the information obtained.

Conclusion

There is a significant positive relationship between digital literacy and digital transformation in MSME business actors. With good digital literacy allows MSME business actors to more effectively and optimally adopt and utilize available digital resources. This fosters courage, skills, operational efficiency, and an organizational culture that supports the successful achievement of digital transformation.

Digital literacy and digital transformation among MSME business actors in the Bangka Belitung Islands Province are predominantly high because most are in urban areas. The difference in the availability of digital resources between urban and rural areas limits MSMEs' implementation of digital transformation.

Digital literacy contributes 70.4% to digital transformation. MSME business actors should focus more on enhancing their digital literacy skills to execute digital transformation better and positively impact their businesses.

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