



DOI: <https://doi.org/10.38035/dijms.v6i4.4300>
<https://creativecommons.org/licenses/by/4.0/>

The Impact of Digital Transformation on the Business Sustainability of MSMEs in Denpasar City

Inten Pertiwi¹, Gede Puspa², Ni Komang Prasiani³, Dwi Sihwinarti⁴

¹Institut Desain dan Bisnis Bali, Bali, Indonesia, email. inten@idbbali.ac.id

²Institut Desain dan Bisnis Bali, Bali, Indonesia, email. gede.puspa@idbbali.ac.id

³Institut Desain dan Bisnis Bali, Bali, Indonesia, email. prasiani@idbbali.ac.id

⁴Institut Desain dan Bisnis Bali, Bali, Indonesia, email. dwi.sihwinarti@idbbali.ac.id

Corresponding Author: gede.puspa@idbbali.ac.id²

Abstract: Micro, Small, and Medium Enterprises (MSMEs) play a strategic role in Indonesia's economy; however, they face significant challenges in sustaining their businesses in the digital era. This study aims to analyze the impact of digital technology adoption and digital skills on the business sustainability of MSMEs in Denpasar City. A quantitative descriptive approach was employed, utilizing primary data collected through questionnaires from 100 respondents. The findings indicate that both digital technology adoption and digital skills have a positive and significant influence on MSME business sustainability. The implementation of digital technology has been proven to enhance operational efficiency, expand market reach, and strengthen competitiveness. However, challenges such as limited digital literacy, financial constraints, and uneven technological infrastructure remain significant obstacles. This study concludes that digital transformation, supported by well-planned strategies and stakeholder collaboration, can drive the sustainability of MSMEs in Denpasar City.

Keyword: Sustainability, Digital Technology Adoption, & Digital Skills

INTRODUCTION

Micro, Small, and Medium Enterprises (MSMEs) hold a strategic position as the backbone of both local and national economies. In Indonesia, this sector absorbs more than 97% of the local workforce, making it a key element in economic development (Judijanto et al., 2024). In addition to contributing significantly to Gross Domestic Product (GDP) and export activities, MSMEs serve as the primary drivers of inclusive economic growth (Khandelwal & Priya, 2024). As the main source of employment after the agricultural sector, MSMEs play a crucial role in supporting the socio-economic well-being of society (Khandelwal & Priya, 2024).

However, despite their vital role, MSMEs continue to face numerous challenges, particularly in terms of innovation and sustainability. In the digital era, MSMEs are confronted with new challenges such as shifts in consumer behavior and increasing global competition. Digital transformation has become an inevitable necessity for MSMEs to remain competitive

and relevant (Hariyanti & Kristanti, 2024). Nevertheless, several obstacles need to be addressed, including low digital literacy, limited access to technology, and data security concerns (Hariyanti & Kristanti, 2024). Additionally, financial constraints, a shortage of skilled labor, and uneven technological infrastructure pose significant challenges (Hendrawan et al., 2024).

Digital transformation is regarded as a strategic solution to support MSME sustainability. Through the utilization of digital technology, MSMEs can expand their market reach, improve operational efficiency, and facilitate more effective decision-making (Hariyanti & Kristanti, 2024). Digital transformation is not merely about adopting technology but also involves fundamental changes in business operations and mindset to create sustainable added value (Hendrawan et al., 2024). With adequate support and well-structured implementation strategies, MSMEs can overcome these challenges and seize the opportunities presented by digital technology to enhance business sustainability (Hendrawan et al., 2024).

The need for digital transformation has become even more pronounced during the COVID-19 pandemic. Many MSMEs were forced to shift their business strategies by adopting online marketing to survive the crisis (Kurniawati et al., 2021). However, a significant portion of MSMEs that still rely on conventional business models often struggle to adapt to these changes (Kurniawati et al., 2021). Therefore, commitment from various stakeholders, including the government and other key players, is necessary to support a more effective digital transformation process (Wahyono, 2024).

To support the sustainability of MSMEs, the integration of sustainable practices with digitalization is crucial (Judijanto et al., 2024). Digital literacy, access to technological infrastructure, and sound financial management have been proven to positively impact MSME business sustainability (Harnida et al., 2024). By implementing this approach, MSMEs can not only foster innovation but also reduce operational costs and enhance their reputation among consumers (Martínez-Peláez et al., 2023). Therefore, a well-planned and sustainable digital transformation is a key element in ensuring MSME business sustainability in the modern era (Martínez-Peláez et al., 2023).

Overall, MSMEs play a crucial role in Indonesia's economy. However, to survive and grow in the digital era, this sector must address these challenges with the right strategies, supported by collaboration among all stakeholders. Digital transformation offers significant opportunities for MSMEs to remain relevant, competitive, and achieve long-term sustainability.

METHOD

The approach used in this study is quantitative descriptive, where problem-solving is conducted using numerical data to determine and analyze the influence of Digital Technology Adoption (X1) and Digital Skills (X2) on MSME Business Sustainability in Denpasar City, measured through MSME Financial Performance (Y).

This study focuses on MSMEs in Denpasar City, considering that this region has a high concentration of businesses, making it a relevant representation for examining the dynamics of small and medium enterprises. The sample was selected using a non-probability sampling approach, which provides an equal opportunity for each member of the population to be selected, although it does not fully guarantee representation.

Primary data was obtained through questionnaires distributed to business owners in Denpasar City who met the research criteria. Out of 100 questionnaires distributed, the collected data was analyzed using linear regression processed through the Statistical Product and Service Solutions (SPSS) Version 25 software to test the research hypotheses.

The conceptual framework of this study is illustrated in the following diagram:

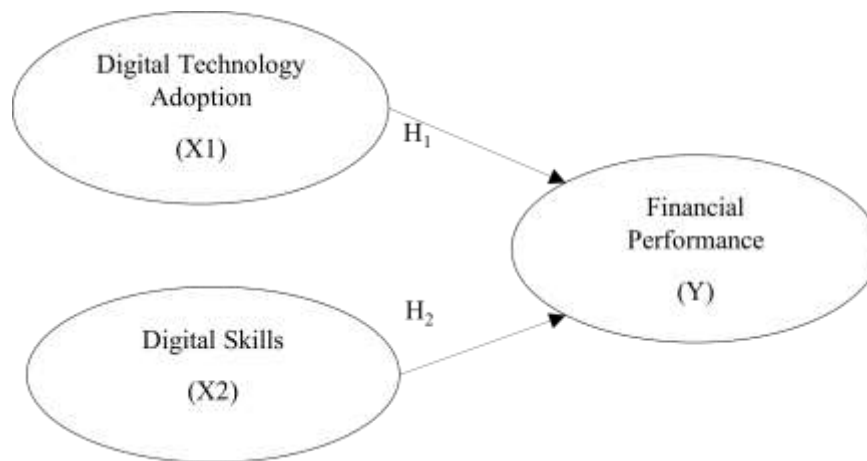


Figure 1. Conceptual Framework

RESULTS AND DISCUSSION

Research Instrument Testing

a. Validity Test

The validity test is conducted to measure how accurately a method evaluates a particular variable. The validity of an instrument can be determined by examining the correlation coefficient between individual item scores and the total score.

Table 1. Validity Test Results

Code	Correlation Value	Ex
X _{1.1}	0,886	Valid
X _{1.2}	0,872	Valid
X _{1.3}	0,971	Valid
X _{1.4}	0,971	Valid
X _{1.5}	0,971	Valid
X _{2.1}	0,597	Valid
X _{2.2}	0,957	Valid
X _{2.3}	0,642	Valid
X _{2.4}	0,550	Valid
X _{2.5}	0,643	Valid
Y ₁	0,945	Valid
Y ₂	0,747	Valid
Y ₃	0,652	Valid
Y ₄	0,830	Valid
Y ₅	0,817	Valid

Source: Processed Data (2025)

Table 1 shows that all item values in the research instrument can be considered valid, as indicated by the correlation coefficient values exceeding 0.3 (Ghozali, 2018).

b. Reliability Test

The reliability test is used to measure the consistency of an instrument. A reliable instrument is one that, when used multiple times to measure the same object, will produce consistent data.

Table 2. Reliability Test Results

Variabel	Cronbach's Alpha	Explanation
X1	0,963	Reliable
X2	0,917	Reliable
Y	0,862	Reliable

Source: Processed Data (2025)

Table 2 shows that the reliability test results indicate that all question items from the three examined variables (digital technology adoption, digital skills, and financial performance) exhibit a high level of reliability. This is evident from the Cronbach's Alpha (α) coefficient values, which are all above 0.60 (Ghozali, 2018). Therefore, it can be concluded that all variables in this study are reliable.

Classical Assumption Test

a. Normality Test

Table 1. Normality Test Results**One-Sample Kolmogorov-Smirnov Test**

		Unstandardized Residual
N		100
Normal Parameters ^{a,b}	Mean	.0000000
	Std. Deviation	1.56468630
Most Extreme Differences	Absolute	.073
	Positive	.035
	Negative	-.073
Test Statistic		.073
Asymp. Sig. (2-tailed)		.200 ^{c,d}

Source: Processed Data (2025)

Based on the Kolmogorov-Smirnov test, the Unstandardized Residual has an Asymp. Sig (2-tailed) value of 0.200, which is greater than 0.05. This indicates that the data is normally distributed.

b. Multicollinearity Test

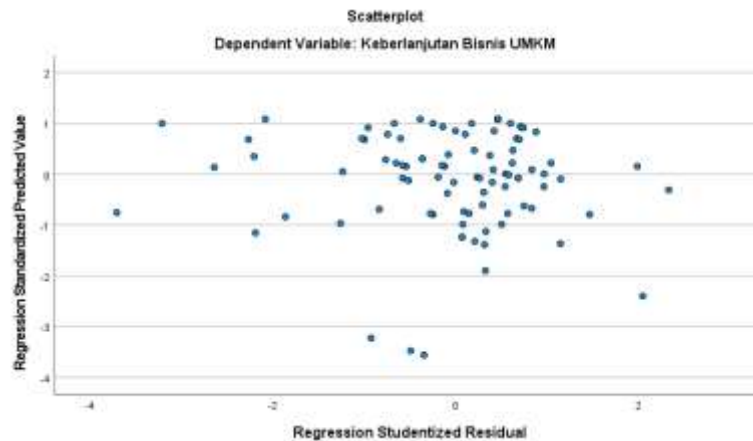
Based on Table 4, the results of the Variance Inflation Factor (VIF) test from the SPSS 25 output indicate that each independent variable has a VIF value of less than 10, with Digital Technology Adoption having a VIF of 4.194 and Digital Skills having a VIF of 5.420. Since all VIF values are below the threshold of 10, it can be concluded that there is no multicollinearity in this regression model.

Table 2. Multicollinearity Test Results

Model	Collinearity Statistics	
	Tolerance	VIF
1 (Constant)		
Digital Technology Adoption	.238	4.194
Digital Skills	.185	5.420

Source: Processed Data (2025)

c. Heteroscedasticity Test



Source: Processed Data (2025)

Figure 2. Heteroscedasticity Test Results

Based on Figure 2, the scatterplot shows that the data points are randomly distributed and spread both above and below zero on the Y-axis. This pattern indicates that there is no heteroscedasticity in the regression model used.

Simple Linear Regression Analysis

Simple linear regression analysis is used to determine the partial effect of the independent variables (digital technology adoption and digital skills) on the dependent variable (MSME business sustainability, measured through financial performance). The simple linear regression model is formulated as follows:

$$Y = a + bx$$

a. Effect of Digital Adoption on MSME Business Sustainability

Table 3 The Effect of Digital Adoption on MSME Business Sustainability Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	1.663	1.376		1.209	.230
Digital Technology Adoption	.882	.066	.803	13.361	.005

a. Dependent Variable: MSME Business Sustainability

Source: Processed Data (2025)

Based on Table 5, the simple linear regression equation for the relationship between Digital Technology Adoption and MSME Business Sustainability is formulated as follows:

$$Y = 1.663 + 0.882.X$$

The constant value of 1.663 indicates that if the digital technology adoption variable (X1) is equal to zero, the MSME business sustainability (Y) will be 1.663. Meanwhile, the regression coefficient (b) of the Digital Technology Adoption variable (X1) is 0.882, meaning that for each one-unit increase in X1, the MSME Business Sustainability (Y) increases by 0.882. Since the regression coefficient is positive, it can be concluded that the effect of digital technology adoption on MSME business sustainability is positive.

b. The Effect of Digital Skills on MSME Business Sustainability

Table 4. The Effect of Digital Skills on MSME Business Sustainability
Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.227	993.299		6.096	.000
	Digital Skills	0.988	649.955	.148	3.194	.029

a. Dependent Variable: MSME Business Sustainability

Source: Processed Data (2025)

Based on Table 6, the simple linear regression equation for the relationship between Digital Skills and MSME Business Sustainability is formulated as follows:

$$Y = 1.227 + 0.988X$$

The constant value of 1.227 indicates that if the digital skills variable (X₂) is equal to zero, the MSME business sustainability (Y) will be 1.227. Meanwhile, the regression coefficient (b) of the Digital Skills variable (X₂) is 0.988, meaning that for each one-unit increase in X₂, the MSME Business Sustainability (Y) increases by 0.988. Since the regression coefficient is positive, it can be concluded that the effect of digital skills on MSME business sustainability is positive.

T Test

The t-test is used to determine whether the independent variables, namely digital technology adoption and digital skills, have a significant partial effect on the dependent variable, MSME business sustainability. In this study, a total of 100 respondents were used, with a significance level of 0.05 and degrees of freedom (df) = N - K = 100 - 2 = 98. From the critical t-table, the t-value (t-table) is 2.626.

a. The Effect of Digital Adoption on MSME Business Sustainability

Based on Table 5, the calculated t-value (t-count) is 13.361, which is greater than the t-table value of 2.626. In the SPSS 25 program, the significance value is 0.005, which is less than 0.05. Based on these results, H₀ is rejected, and H_a is accepted, indicating that digital technology adoption has a significant effect on MSME business sustainability.

b. The Effect of Digital Skills on MSME Business Sustainability

Based on Table 6, the calculated t-value (t-count) is 3.194, which is greater than the t-table value of 2.626. In the SPSS 25 program, the significance value is 0.029, which is less than 0.05. Based on these results, H₀ is rejected, and H_a is accepted, indicating that digital skills have a significant effect on MSME business sustainability.

Discussion

Adopting digital technology is a crucial step for Micro, Small, and Medium Enterprises (MSMEs) to ensure business sustainability, enhance competitiveness, and expand their market share. However, the adoption process is often hindered by various challenges that reduce its effectiveness. One of the primary obstacles is the limited resources, including financial constraints and the technical skills required to implement and manage new technologies.

In addition, MSMEs face difficulties in accessing digital markets. A lack of understanding of online platforms, digital marketing strategies, and weak online presence often makes it difficult for MSMEs to attract consumers and compete with larger, more established

businesses in the digital marketplace. These barriers pose significant challenges for MSMEs seeking to expand their businesses through online platforms (Suwarni et al., 2019).

Another major challenge in digital technology adoption by MSMEs is data security. Concerns about data breaches, theft of sensitive information, and cyberattacks often discourage MSMEs from storing critical data digitally or utilizing cloud computing services (WSI, 2015). A lack of awareness regarding best practices in data security and limited resources to implement them make MSMEs vulnerable to digital threats.

To overcome these challenges, MSMEs must develop a comprehensive and sustainable strategy for digital technology adoption. This strategy should include adequate resource allocation, strengthening online presence, enhancing data security measures, and fostering a culture that supports technological innovation. By addressing these obstacles, MSMEs can increase their competitiveness and maximize the benefits of digital transformation.

A lack of understanding of the benefits and usage of digital technology is also a major challenge for MSMEs. Many business owners and managers are unaware of the importance of digital transformation or lack the necessary knowledge to implement technology effectively. This knowledge gap often leads to resistance to change, as many MSMEs are comfortable with traditional business methods that have been used for years. Without a clear understanding of how technology can benefit their businesses, MSMEs tend to hesitate in allocating resources and time for digital adoption.

Research has shown that limited knowledge of digital technology can be a serious barrier to MSME digital adoption (Made et al., 2024). Insufficient expertise in digital marketing, website management, social media, and marketplace utilization can restrict MSMEs' visibility to only local markets, thus limiting their business growth potential. Additionally, technical knowledge gaps among MSME employees present further challenges in implementing digital technology. Many employees lack basic digital skills necessary to operate software or digital systems. This limitation can hinder the digitalization process, as employees may require extensive training to use new technology effectively.

A lack of awareness about cybersecurity and data protection can also pose significant risks for MSMEs, as they may not have adequate systems or procedures to safeguard business and customer data. Information gaps further contribute to low awareness about the opportunities provided by digital technology. Many MSMEs lack access to information sources that could help them understand emerging technological trends and how to integrate them into their businesses. Available information is often fragmented and difficult to access, particularly for MSMEs in remote areas.

Moreover, research indicates that limited digital literacy can be a serious threat in today's digital transformation era (Lia, 2023). The inability to understand digital technology can hinder MSMEs from leveraging opportunities such as online marketing, digital financial management, and technology-based business models. Therefore, training and education programs sponsored by the government or non-governmental organizations can play a critical role in enhancing MSMEs' knowledge and awareness of digital technology. With better understanding, MSMEs can become more prepared and motivated to adopt digital technology, ultimately improving their competitiveness and business growth.

CONCLUSION

Based on the findings of this study, it can be concluded that digital technology adoption has a positive and significant impact on MSME business sustainability. The implementation of digital technology has been proven to enhance competitiveness, expand market reach, and optimize operational efficiency, particularly in an increasingly competitive global economy. Additionally, digital skills also have a positive and significant impact on MSME business sustainability in Denpasar. Improving digital skills among both employees and business owners enables them to better understand consumer needs and behavior through the utilization of

digital technology. Thus, the combination of digital technology adoption and the enhancement of digital skills becomes a key factor in driving MSME growth and sustainability in the digital era.

Based on the results of this study, several recommendations can be considered to improve MSME business sustainability in Denpasar City. First, MSME owners should ensure the availability of adequate resources, both financial and technical, to support optimal digital technology implementation. Second, a deeper understanding of digital markets, online marketing strategies, and data security should be improved so that MSMEs can compete effectively in the digital era. Third, forming partnerships with reliable digital service providers is a strategic step to obtain solutions tailored to MSME needs and characteristics. Finally, adopting a flexible and adaptive approach is crucial for MSMEs to quickly respond to technological changes and market dynamics, ensuring long-term business sustainability.

REFERENCE

- Hariyanti, S., & Kristanti, D. (2024). Digital Transformation in MSMEs: an Overview of Challenges and Opportunities in Adopting Digital Technology. *Jurnal Manajemen Bisnis, Akuntansi Dan Keuangan*, 3(1), 37–46. <https://doi.org/10.55927/jambak.v3i1.8766>
- Harnida, M., Vasudevan, A., Mardah, S., Fajriyati, I., Mayvita, P. A., Hunitie, M. F. A., & Mohammad, S. I. S. (2024). Micro, Small, and Medium-Sized Enterprises (MSMEs) Sustainability: The Strategic Role of Digitalization, Financial Literacy, and Technological Infrastructure. *Journal of Ecohumanism*, 3(6), 1248–1260. <https://doi.org/10.62754/joe.v3i6.4097>
- Hendrawan, S. A., Chatra, A., Iman, N., Hidayatullah, S., & Suprayitno, D. (2024). Digital Transformation in MSMEs: Challenges and Opportunities in Technology Management. *Jurnal Informasi Dan Teknologi*, 141–149. <https://doi.org/10.60083/jidt.v6i2.551>
- Judijanto, L., Utami, E. Y., Apriliani, D., & Rijal, S. (2024). A Holistic Review of MSME Entrepreneurship in Indonesia: The Role of Innovation, Sustainability, and the Impact of Digital Transformation (Vol. 5, Issue 1). <https://ijble.com/index.php/journal/index>
- Khandelwal, R., & Priya, A. (2024). DIGITAL TRANSFORMATION OF MSMEs: STRATEGY AND CHALLENGES. In *International Journal of Innovations & Research Analysis (IJIRA)* (Vol. 04, Issue 02).
- Kurniawati, E., Idris, & Osman, S. (2021). Digital transformation of MSMEs in Indonesia during the pandemic. *Entrepreneurship and Sustainability Issues*, 9(2), 316–331. [https://doi.org/10.9770/jesi.2021.9.2\(21\)](https://doi.org/10.9770/jesi.2021.9.2(21))
- Lia, N. (2023). The Impact of Digital Literacy on MSMEs' Adoption of Technology in the Digital Era. *Journal of Digital Economy*. <https://doi.org/10.54321/jde.v7i3.112>
- Made, I., Putra, O. D., Putu, I., Pradhana, D., Wijaya, Y. P., Arniti, N. K., Adi, P., & Putra, S. (2024). *Sosialisasi dan Edukasi Terkait Digitalisasi pada UMKM* (Vol. 7, Issue 3).
- Martínez-Peláez, R., Ochoa-Brust, A., Rivera, S., Félix, V. G., Ostos, R., Brito, H., Félix, R. A., & Mena, L. J. (2023). Role of Digital Transformation for Achieving Sustainability: Mediated Role of Stakeholders, Key Capabilities, and Technology. *Sustainability (Switzerland)*, 15(14). <https://doi.org/10.3390/su151411221>
- Suwarni, E., Sedyastuti, K., Haidar Mirza, A., Jendral Ahmad Yani No, J., & aSelatan, S. (2019). *PELUANG DAN HAMBATAN PENGEMBANGAN USAHA MIKRO PADA ERA EKONOMI DIGITAL*.
- Wahyono, T. (2024). Digital Transformation in MSMEs in Indonesia: The Importance of Commitment to Change. *International Journal of Social Service and Research*, 4(01), 378–384. <https://doi.org/10.46799/ijssr.v4i01.703>