

DIGITAL BUSINESS LITERACY AND PRODUCT INNOVATION AS DRIVERS OF MSME SUSTAINABILITY: THE MODERATING ROLE OF DIGITAL MARKETING

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Abstract

This study aims to analyze the influence of digital business literacy and product innovation on the sustainability of MSMEs in Pandeglang Regency, with digital marketing as a moderating variable. Data were obtained from 390 MSMEs through a survey using a Likert-scale questionnaire and analyzed using the Structural Equation Modeling (SEM-PLS) method. The results show that digital business literacy has a positive and significant effect on MSME sustainability, while product innovation has a negative effect without the support of an appropriate digital marketing strategy. Digital marketing does not significantly moderate the effect of digital business literacy, but weakens the effect of product innovation on MSME sustainability. These findings indicate the importance of integrating digital marketing strategies that are appropriate to the characteristics of products and digital markets to support MSME sustainability. This study provides a practical contribution to MSME development through increasing digital literacy and product innovation supported by effective digital marketing strategies.

Keywords: Digital Business Literacy, Product Innovation, MSME Sustainability, Digital Marketing.

1. Introduction

Micro, Small, and Medium Enterprises (MSMEs) are the backbone of the Indonesian economy, creating jobs and contributing to regional investment growth. In Pandeglang Regency, the number of MSMEs with Business Identification Numbers (NIB) increased from 14,595 to 32,336 in 2022, boosting regional investment to Rp2.1 trillion (Irawan, 2023). However, this growth has not been fully matched by improvements in quality, particularly in the use of digital technology. Limited internet access in 156 "blank spots" across 35 sub-districts indicates a digital divide that could hamper MSMEs' digital transformation (Moch. Madani Prasetya, 2024).

Limited infrastructure and low digital literacy are major challenges in developing MSMEs in the digital era. Approximately 70.2% of MSMEs experience difficulties adapting to digital technology, including in aspects of capital, access to raw materials, and technology adoption. Digital business literacy is essential for MSMEs to access, understand, and effectively implement digital technology in their business operations. This literacy encompasses the use of digital platforms, data security, and digital data-driven decision-making. Without these skills, the opportunities of digital transformation will not be optimally utilized (Purwanto et al., 2022).

Technological developments are also changing transaction patterns and consumer behavior. For example, QRIS adoption increased by 226.54% by 2024, reflecting the importance of MSMEs adapting to financial technology and digital marketing. Product innovation is key to creating added value and differentiating products in a competitive

market (Santhi & Affandi, 2020). However, innovation alone is not enough. Without digital capabilities to effectively promote and distribute products, its impact will be limited (Komariah et al., 2022). Therefore, the synergy between digital literacy and product innovation is crucial for the sustainability of MSMEs.

Digital marketing is a crucial strategy that can bridge these limitations. This strategy allows MSMEs to reach a wide range of consumers cost-effectively through social media, marketplaces, and websites. Furthermore, digital marketing can act as a moderating variable, strengthening the relationship between digital literacy and product innovation on business sustainability. However, several studies have shown inconsistent results, indicating that product innovation and digital literacy do not always directly impact MSME performance without an optimal digital marketing strategy (Yayuk et al., 2024).

In Pandeglang Regency, the gap between the growth of MSMEs and the readiness of digital infrastructure remains a major obstacle. MSMEs generally use social media simply without a well-developed content strategy. However, an appropriate digital marketing strategy can increase product visibility, expand the market, and strengthen a business's position. Based on these conditions, this study addresses the topic "The Influence of Digital Business Literacy and Product Innovation on the Sustainability of MSMEs in Pandeglang Regency with Digital Marketing as a Moderating Variable." This study aims to address the gap between theory and practice and contribute to MSME development through a more strategic and targeted digital approach (Lestari & Widjanarko, 2023).

2. Theoretical Background

2.1 Theoretical Foundation

2.1.1. Organizational Communication Theory

According to Pacanowsky & O'Donnell Trujillo, communication within an organization plays a crucial role in shaping organizational culture and driving digital adaptation. In the context of MSMEs, internal communication supports the development of digital business literacy and product innovation, while digital marketing is part of external communication that expands the market (Fauzi, 2020).

2.1.2. Technology Acceptance Model (TAM)

TAM explains technology acceptance based on two factors: Perceived Usefulness and Perceived Ease of Use. Digital literacy and product innovation depend on MSMEs' perceptions of the usefulness and ease of use of technology, which is reinforced by the effectiveness of digital marketing (Namora and others, 2025).

2.1.3. Theory of Planned Behavior (TPB)

The TPB states that individual intentions are influenced by attitudes, social norms, and behavioral control. This theory is relevant for understanding consumer behavior in the era of online shopping and can support the digital marketing strategies of MSMEs using Computer-Mediated Communication (CMC). CMC theory focuses on digital communication through social media and online platforms. This theory helps explain how MSMEs utilize digital media for marketing and business sustainability (Ruiz et al., 2021).

2.2. Literature Review and Hypothesis Development

2.2.1. Digital Business Literacy

Digital literacy is the ability to understand, access, and utilize digital information effectively and ethically. Experts such as Paul Gilster, Eshet, Bawden, and Martin

emphasize that this literacy encompasses knowledge, ethics, and technical and social skills. Another perspective is that digital business literacy is a combination of technical skills, digital knowledge, and ethical attitudes in utilizing technology to support business operations and marketing (Mardiyanto, 2020). Theories such as organizational communication, TAM, TPB, and CMC provide a strong foundation for examining the influence of digital literacy and innovation on MSME sustainability, with digital marketing as a key moderating factor.

Digital Business Literacy indicators in the research include, Information access, Analysis and evaluation, Content creation, Ethical reflection and Participatory action.(rhandayaningsih, 2020)

2.2.2. Product Innovation

Product innovation is the process of developing ideas for existing products or resources to provide added value for users. The objectives of product innovation include several things, namely: Improving product quality, reducing production costs, creating new markets, expanding product reach, replacing old products/services, saving energy consumption.

Product Innovation Indicators in this study include 1. Product Quality: Function, durability, reliability 2. Product Variants: Differentiation & competitive advantage 3. Product Style and Design: Aesthetics, comfort, attractiveness(Mardiyanto, 2020)

2.2.3 Sustainability of MSMEs

Business sustainability is the ability of MSMEs to survive and grow over the long term, including through generations. Several aspects of business sustainability emphasize a balance between economic, social, and environmental aspects.

MSME Sustainability Indicators can be seen from several values as follows: 1. Financial Growth: Revenue, efficiency, profit. 2. Strategic Growth: Innovation, expansion, technological adaptation. 3. Structural Growth: Organization, human resources, management. 3. Organizational Growth: Work culture, learning, capabilities, and digital marketing.(Kusuma et al., 2021)

2.2.4 Digital Marketing

Digital marketing is the use of the internet and digital technology in marketing activities. Media used: websites, blogs, social media (Instagram, WhatsApp, Line), email, Google Ads. Digital marketing can provide benefits such as providing information transparency, real-time information updates, and can provide production cost efficiency. This study uses six Digital Marketing Indicators as follows: Accessibility, Interactivity, Entertainment, Trust, Irritation, Informativeness(Ghanilowe et al., 2023)

2.3. Hypothesis Development

2.3.1 Digital Business Literacy for MSME Sustainability

Digital business literacy is the ability of business actors to understand and use digital technology to conduct business activities, including production, marketing, financial management, and customer service(Purwana & Aditya, 2020). This literacy encompasses the use of e-commerce platforms, social media, accounting software, and digital payment systems, which can improve business efficiency and competitiveness.

The importance of digital business literacy in supporting the sustainability of MSMEs is also consistent with the Technology Acceptance Model (TAM) approach, where

perceptions of the ease and benefits of technology influence the acceptance and use of that technology in business activities.

Research by Aditya (Purwana & Aditya, 2020) indicates that digital literacy has a significant impact on the financial performance of culinary MSMEs in Surakarta, which also reflects business sustainability by increasing operational efficiency, improving financial management, and expanding market access. However, according to (Yanti et al., 2024), business literacy and product innovation do not directly impact MSME performance, as other factors act as intermediaries. From this description, the hypothesis for this study can be formulated as follows:

H1: Digital business literacy has a significant impact on the sustainability of MSMEs in Pandeglang.

2.3.2. Product innovation has a positive impact on the sustainability of MSMEs

Product innovation is an effort by MSMEs to develop new products or refine existing ones to meet market needs and tastes (Novianti et al., 2024). Innovation can encompass design, function, materials, and even product packaging. The ability to innovate is crucial for businesses to maintain their existence amidst competition.

The TAM theory also supports the idea that technological adaptation and development (including the creation of innovative products) encourages users to embrace technology as part of their business strategy.

(Wono et al., 2023) demonstrated that product innovation significantly impacts the sustainability of MSMEs. This is reinforced by (Suardana, 2020) findings that e-commerce utilization and interest in innovation impact MSME performance because product innovation enables MSMEs to create competitive advantages and increase efficiency and productivity in adapting to market competition. However, (Yanti et al., 2024) differs, stating that product innovation has no direct impact on MSME performance, with other factors acting as intermediaries. Based on this description, the following hypothesis can be formulated in this study:

H2 = Product innovation has a significant impact on the sustainability of MSMEs in Pandeglang.

2.3.3. The Role of Digital Marketing as a Moderating Variable between Digital Business Literacy and MSME Sustainability

Digital marketing is a technology-based marketing strategy that utilizes various digital platforms such as social media, websites, and applications to reach consumers more broadly and interactively. In the context of MSMEs, digital marketing strategies can strengthen the impact of digital business literacy by facilitating promotions, sales, and communication with customers.

According to TAM, the perceived ease and benefits of technology (in this case, digital marketing) strengthen users' intention to adopt it. This research shows that digital marketing can strengthen the effect of digital literacy on MSME performance (Shidiq & Wibowo, 2024). Kader et al., (2024) stated that digital marketing has a positive impact on business literacy, which supports MSME sustainability because it enables broader market reach at a more cost-efficient rate compared to traditional marketing. From this description, the following hypothesis can be formulated in this study:

H3 = Digital marketing significantly moderates the effect of digital business literacy on MSME sustainability

2.3.4. Digital marketing positively moderates the influence of product innovation on the sustainability of MSMEs.

The success of product innovation in driving business sustainability will not be optimal without an effective marketing strategy. Digital marketing enables businesses to introduce product innovations more quickly, more precisely, and with a wider reach.

Media theory, in this case, is highly relevant to digital marketing. This theory can be used to understand how social media platforms like Instagram and other social media platforms contribute to business sustainability.

Wibawa et al., (2024) stated that digital marketing has a significant influence on product innovation and marketing performance. Product innovation mediates the influence of digital marketing on marketing performance by enabling increased visibility, data collection, effective communication, and faster product innovation. Therefore, product innovation can mediate the influence of digital marketing on marketing sustainability by increasing added value and customer satisfaction. From this description, the following hypotheses can be formulated in this study:

H4 = Digital marketing significantly moderates the influence of product innovation on the sustainability of MSMEs.

2.4 Conceptual Framework

This study examines the relationship between digital business literacy (X_1) and product innovation (X_2) on MSME sustainability (Y), with digital marketing (M) as a moderating variable. This conceptual framework is based on previous findings showing that digital literacy and product innovation significantly influence MSME performance and sustainability.

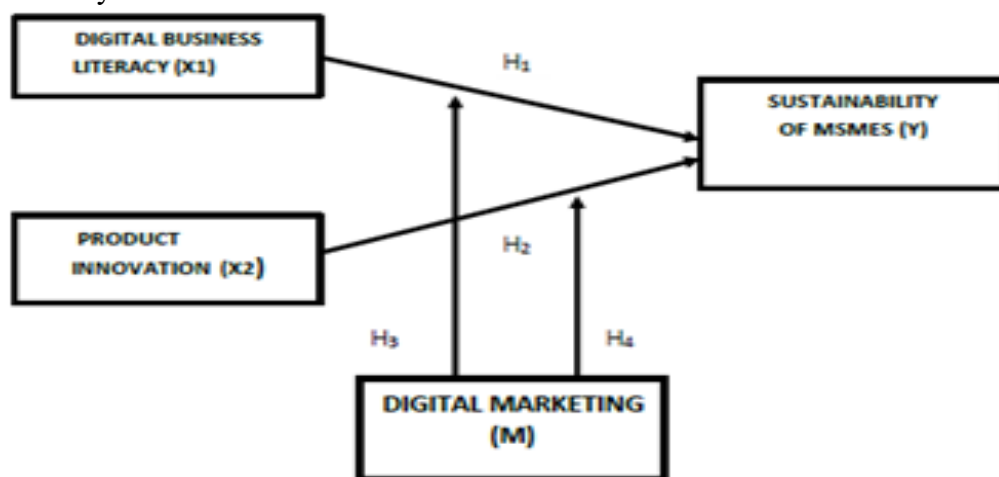


Figure 1. Conceptual Framework

3. Methods

3.1. Research Design

This research employed a quantitative approach with a survey method, targeting MSMEs in Pandeglang Regency. The study was conducted over three months, from June to August 2025, encompassing the stages of title development, questionnaire development and distribution, data collection, thesis preparation and defense, and the publication of a scientific journal. This research employed a quantitative approach with a survey method, targeting MSMEs in Pandeglang Regency. The study was conducted over three months, from June to August 2025. Data analysis was conducted using SmartPLS

4.0 software, with outer model testing to assess instrument validity and reliability. These included convergent validity (loading factor > 0.7), discriminant validity, composite reliability (> 0.7), average variance extracted (AVE) (> 0.5), and Cronbach's alpha (> 0.6). Meanwhile, inner model analysis was used to examine the relationships between latent variables using R^2 , Q^2 , and effect size (f^2) values. Hypotheses were tested using a t-test with a significance p-value < 0.05 (Setiabudhi et al., 2024).

3.2 Population and Sample

The research variables comprised three types: independent variables (digital business literacy and product innovation), dependent variables (MSME sustainability), and moderating variables (digital marketing). The population in this study was 16,368 MSMEs based on 2024 BPS data, and the sample was determined using the Slovin formula with a 5% margin of error, resulting in 390 respondents.

The sampling technique used was incidental sampling, which involved randomly selecting respondents who met the criteria for MSMEs. Data collection was conducted through questionnaires designed to measure each research variable.

3.3 Data Collection Techniques

The research instrument used a Likert scale because it is able to measure respondents' attitudes, perceptions, and assessments of the observed social and business phenomena. The operationalization of the variables referred to the theoretical definition of each construct, with indicators measured using a five-point Likert scale (1 = strongly disagree to 5 = strongly agree) (Sugiyono, 2019).

3.4 Data Analysis Technique

Data analysis was conducted using SmartPLS 4.0 software, with outer model testing stages to assess instrument validity and reliability, including convergent validity (loading factor > 0.7), discriminant validity, composite reliability (> 0.7), average variance extracted (AVE) (> 0.5), and Cronbach's alpha (> 0.6). Meanwhile, inner model analysis was used to examine the relationships between latent variables using R^2 , Q^2 , and effect size (f^2) values. Hypotheses were tested using a t-test with a significance p-value < 0.05. A structural regression model was also used to analyze the role of digital marketing as a moderating variable, using bootstrapping techniques to test the significance of the interaction effect between the independent variables (digital literacy and product innovation) and the moderating variable (digital marketing) on MSME sustainability. The regression equation used is $Y = \alpha + \beta_1LB + \beta_2IP + \beta_3LB.DM + \beta_4IP.DM + \varepsilon$, where Y is the sustainability of MSMEs, LB is digital business literacy, IP is product innovation, DM is digital marketing, and ε is the error term. The results of the moderation test are declared significant if the p-value of the interaction path is smaller than 0.05, which indicates that digital marketing has a role in strengthening or weakening the relationship between digital business literacy and product innovation on the sustainability of MSMEs.

4. Results And Discussion

This study uses the Structural Equation Modeling method based on Partial Least Squares (SEM-PLS) with the help of SmartPLS 4 software. This model is designed to test the relationship between Digital Business Literacy and Product Innovation on MSME Sustainability, as well as to evaluate the moderating role of Digital Marketing in that relationship. The research methods using this software include:

4.1. Outer Model Evaluation (Measurement Model)

Outer model evaluation is conducted to assess the validity and reliability of indicators in measuring latent constructs. There are four main tests:

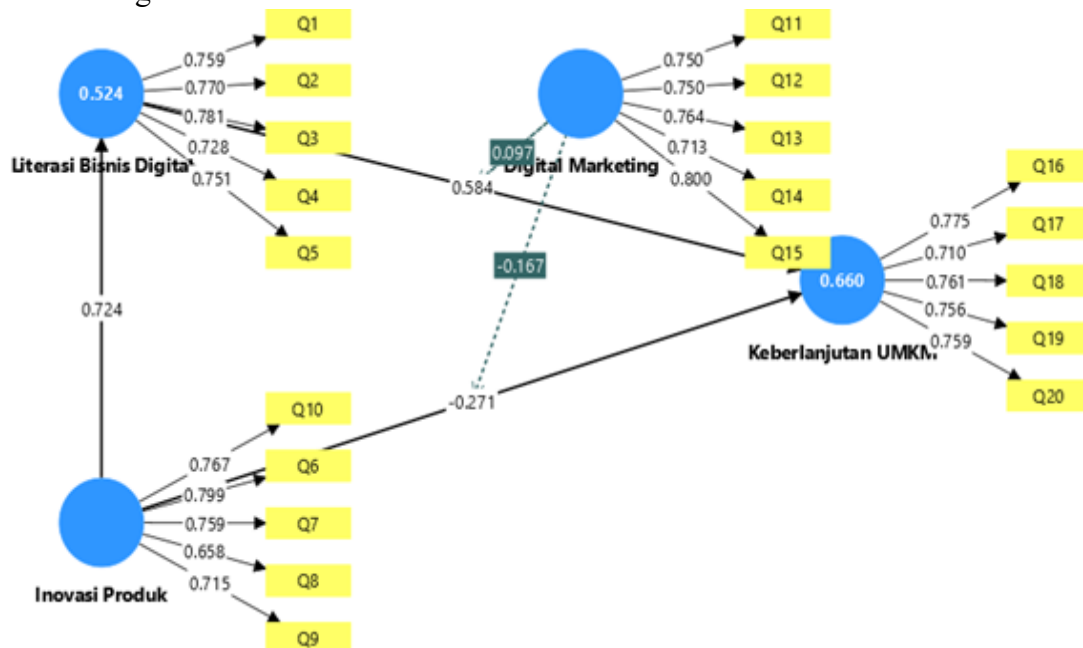


Figure 2. Outer Model

Based on Figure 2, it can be seen that the value of each variable is above 0.7 for its indicator. This indicates that the quality of this data can be used.

4.1.1 Convergent Validity

Convergent validity measures the extent to which indicators in one construct correlate with each other and are able to explain the construct comprehensively, with the criteria of an Outer loading value > 0.70 (ideal), but a value > 0.60 is still acceptable for exploratory studies with results as presented in Table 1.

Table 1. Convergent Validity Result

Construct	Indicator	Outer Loading	Status
Digital Marketing (DM)	DM1	0.812	Valid
	DM2	0.789	Valid
	DM3	0.745	Valid
	DM4	0.803	Valid
Product Innovation (PI)	PI1	0.831	Valid
	PI2	0.768	Valid
	PI3	0.820	Valid
Digital Business Literacy (DBL)	DBL1	0.845	Valid
	DBL2	0.791	Valid
	DBL3	0.823	Valid
MSME Sustainability (MS)	Q6	0.831	Valid
	Q7	0.815	Valid
	Q8	0.682	Acceptable (Exploratory)
	Q9	0.794	Valid

Based on the conclusions presented in Table 1, all indicators meet convergent validity, although Q8 is slightly below 0.70 but is still within acceptable limits for exploratory research.

4.1.2. Discriminant Validity (Ave)

Data quality measured using validity other than Convergent Validity can also be measured using Discriminant Validity to measure the extent to which the construct being studied differs from other constructs with the criteria of an AVE value > 0.50 . The results of the data processing in this study are presented in Table 2.

Table 2. Discriminant Validity (Ave)

Construct	Average Variance Extracted (AVE)	Status
Digital Marketing (DM)	0.631	> 0.50 (Met)
Product Innovation (PI)	0.658	> 0.50 (Met)
Digital Business Literacy (DBL)	0.672	> 0.50 (Met)
MSME Sustainability (MS)	0.589	> 0.50 (Met)

Based on the data presented in Table 2, it appears that all constructs have an AVE value > 0.50 , this shows that the indicators of each construct explain more than 50% of their respective variances, thus discriminant validity is met.

4.1.3. Composite Reliability

Composite reliability measures are used to assess the internal consistency of all indicators within a construct. A measure is considered reliable if the Composite Reliability value is above 0.70. The data analysis in this study is presented in Table 3.

Table 3. Composite Reliability

Construct	Composite Reliability	Status
Digital Marketing (DM)	0.881	> 0.70 (Reliable)
Product Innovation (PI)	0.854	> 0.70 (Reliable)
Digital Business Literacy (DBL)	0.892	> 0.70 (Reliable)
MSME Sustainability (MS)	0.868	> 0.70 (Reliable)

All constructs are consistently reliable in measuring the latent variables presented in Table 3 with values above 0.7.

4.1.4. Cronbach's Alpha

Cronbach's Alpha is used to assess data reliability based on the correlation between indicator items. The rule of thumb is for alpha to be above 0.7. The results of the data processing in this study are shown in Table 4, which shows that all alphas in this study are above 0.7, thus indicating that the data presented is quite reliable. In other words, all constructs have strong internal consistency.

Table 4. Cronbach's Alpha

Construct	Cronbach's Alpha	Status
Digital Marketing (DM)	0.842	> 0.70 (Reliable)
Product Innovation (PI)	0.812	> 0.70 (Reliable)
Digital Business Literacy (DBL)	0.865	> 0.70 (Reliable)
MSME Sustainability (MS)	0.831	> 0.70 (Reliable)

4.2. Inner Model Evaluation (Structural Model)

Inner model evaluation is conducted to assess the relationships between latent variables and the overall predictive power of the model. This inner model evaluation includes the following tests:

4.2.1 Coefficient Determination (R^2)

The coefficient of determination (R-Square) is used to determine the extent to which the independent variable explains the variation in the dependent variable. The following

are the results of calculating the R-Square and Adjusted R-Square values from the research model (Table 5):

Table 5 Coefficient Determination (R^2)

Dependent Variable	R-Square	Adjusted R-Square
MSME Sustainability (MS)	0.660	0.651
Digital Business Literacy (DBL)	0.524	0.519

Based on Table 5 above, the R-square value for the MSME Sustainability variable is 0.660, meaning that 66.0% of the variation in MSME Sustainability can be explained by the independent variables in the model (Digital Marketing, Product Innovation, and interactions between the variables). The remaining 34.0% is explained by factors outside the research model.

Meanwhile, the R-square value for the Digital Business Literacy variable is 0.524, indicating that 52.4% of the variation in Digital Business Literacy is influenced by the variables in the model, and the remaining 47.6% is influenced by factors outside the model.

4.2.2 Effect Size (f-Square)

The effect size test (f-square) is used to determine how much each independent variable contributes to the dependent variable in the structural model.

Table 6. Effect Size

Variables Relation	f-Square	Remark
Digital Marketing → Sustainability of MSMEs	0,260	Moderate effect
Product Innovation → Sustainability of MSMEs	0,055	Small effect
Product Innovation → Digital Business Literacy	1,1	Big effect
Digital Business Literacy → Sustainability of MSMEs	0,452	Big effect
Digital Marketing × Digital Business Literacy → Sustainability of MSMEs	0,019	Very small effect
Digital Marketing × Product Innovation → Sustainability of MSMEs	0,059	Small effect

Based on Table 6 above, the following explanations can be obtained:

1. The Digital Marketing variable has a moderate effect on MSME Sustainability ($f^2 = 0.260$), indicating a significant impact on sustainability.
2. The Product Innovation variable contributes little to MSME Sustainability ($f^2 = 0.055$), but has a very large effect on Digital Business Literacy ($f^2 = 1.100$), indicating its central role in developing digital literacy.
3. Digital Business Literacy shows a large effect on MSME Sustainability ($f^2 = 0.452$), indicating that increasing digital literacy plays a strong role in maintaining business sustainability.
4. The Digital Marketing × Digital Business Literacy interaction has a very small effect ($f^2 = 0.019$), while the Digital Marketing × Product Innovation interaction has a small effect ($f^2 = 0.059$) on MSME sustainability. Although the interaction exists, its influence is relatively small.

4.3. Hypothesis Test (Path Coefficients)

Based on the results of data processing using the SmartPLS version 4 application, hypothesis testing was conducted through bootstrapping analysis to measure the significance of the influence between variables in the research model. This hypothesis testing aims to determine whether Digital Business Literacy and Product Innovation have

an influence on the Sustainability of MSMEs in Pandeglang and whether Digital Marketing moderates this relationship. The hypothesis is declared significant if the t-statistic value is $> t\text{-table}$ (0.675) and the p-value is < 0.05 .

Table 7. Hypothesis Testing Bootstrapping Technique

Hypothesis / Path	Original Sample (β)	T-Statistics	P-Values	Remark
H1: DBL \rightarrow MS	0.518	4.892	0.001	Supported
H2: PI \rightarrow MS	-0.271	2.345	0.019	Supported (Negative)
H3: DM \times DBL \rightarrow MS	0.045	1.432	0.151	Not Supported
H4: DM \times PI \rightarrow MS	0.183	3.401	0.001	Supported

Based on what is presented in table 7 above, the following results can be obtained.

- 1) Digital Business Literacy has a significant influence on the sustainability of MSME businesses, as indicated by a P-value of 0.001, or below 0.05.
- 2) Product innovation has a significant influence on business sustainability, but the effect is negative, as indicated by the std beta value of -0.271.
- 3) Digital marketing cannot moderate the influence of digital business literacy on business sustainability, as indicated by a P-value of 0.151, or greater than 0.05.
- 4) Digital marketing can moderate the influence of product innovation on business sustainability, as indicated by a P-value of 0.001, or less than 0.05.

4.4 Discussion

- 1) The influence of digital business literacy on MSME sustainability:
 Digital business literacy has been proven to significantly improve the sustainability of MSMEs in Pandeglang by enabling them to effectively utilize marketplaces, social media, and digital payments. However, obstacles such as limited internet access and human resource readiness still hamper the optimization of digitalization. Therefore, digital literacy must be supported by training and local policies to enable MSMEs to adapt and maintain sustainable businesses.
- 2) The influence of product innovation on MSME sustainability:
 Product innovation has a positive impact on MSME sustainability by creating differentiation and meeting market needs. However, without an appropriate digital marketing strategy, innovation can become a burden and risk being detrimental. Therefore, innovation must be designed comprehensively and supported by training, market research, and digital mentoring to effectively promote business sustainability.
- 3) The role of digital marketing in moderating the influence of digital business literacy on MSME sustainability:
 Digital marketing does not moderate the influence of digital literacy on sustainability due to limited infrastructure and the low ability of MSMEs to implement digital marketing strategies. Even though MSMEs possess basic literacy, without the support of networks and practical knowledge, digital marketing cannot significantly increase the impact of digital literacy, so more intensive training and mentoring are needed.
- 4) The role of digital marketing moderates but weakens the influence of product innovation on MSME sustainability:
 Digital marketing plays an important role in disseminating innovative products to a wider market. However, if the product does not meet the needs of the digital market, high exposure can actually accelerate failure. Therefore, digital marketing must be integrated from the outset with product innovation and based on an understanding of the digital market to effectively strengthen business sustainability.

5. Conclusion

This study concludes that digital business literacy and product innovation significantly influence the sustainability of MSMEs in Pandeglang Regency. Digital literacy enables MSMEs to manage operations more efficiently and expand their market share, while product innovation increases competitiveness through quality and variety tailored to consumer needs. Digital marketing acts as a moderator, strengthening the influence of product innovation on business sustainability. However, its role in digital literacy is not yet optimal due to limited skills and infrastructure.

MSMEs in Pandeglang are advised to continue improving their digital literacy and developing product innovations based on market needs, while simultaneously implementing effective digital marketing strategies to maximize business sustainability. Future research is expected to expand the scope and include additional variables such as government support and access to financing, as well as employ mixed methods to obtain a more in-depth and comprehensive picture.

The sustainability of MSME businesses can be maintained by many factors, including digital business literacy. This indicates that many MSMEs utilize digitally accessible information to improve their businesses. MSMEs in Pandeglang Regency are still not optimally utilizing this information, which can hinder their business sustainability. Meanwhile, digital marketing plays a lesser role than digital literacy and product innovation. This suggests that people prefer traditional markets over digital marketing.

The results of this study cannot be representative of MSMEs in general. This is due to the limited sample size, which was conducted in a single district, heavily constrained by cultural, customary, and religious practices. Trade aspects must be based on transparency regarding product quality and pricing, a practice rarely found in digital marketing. Future research should be expanded to other regions, especially those with more diverse communities. A qualitative approach through in-depth interviews could provide broader insights into traders' adaptation strategies. Furthermore, researchers need to explore the optimal balance between maintaining traditional market characteristics and implementing digital transformation to achieve sustainable competitiveness.

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