





“The role of digital financial inclusion in improving financial literacy and financial well-being for business sustainability: Indonesian women’s export craft SMEs”

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THE ROLE OF DIGITAL FINANCIAL INCLUSION IN IMPROVING FINANCIAL LITERACY AND FINANCIAL WELL-BEING FOR BUSINESS SUSTAINABILITY: INDONESIAN WOMEN'S EXPORT CRAFT SMEs

Abstract

Women, as craft business owners, must possess knowledge about financial inclusion and financial stability because it has an impact on business sustainability. This paper aims to test the effect of financial literacy and financial well-being on business sustainability, with digital financial inclusion as a moderating variable. This paper uses 236 female export craft MSME actors in East Java Province. Structural equation modeling (SEM) was used to test the hypotheses. The findings show that financial literacy and financial well-being affect business sustainability. Financial knowledge of MSME actors, both knowledge of debt and bookkeeping with the ability to record finances, impact business sustainability. Financial well-being also contributes to business sustainability with healthy finances and a perception of financial adequacy and financial resources to manage the business. Financial well-being can mediate the influence of financial literacy on business sustainability, where increasing financial well-being is necessary because the role of financial literacy can improve the business sustainability of female MSME actors in East Java. Digital financial inclusion can moderate financial well-being's influence on business sustainability by using digital products and digital systems. The research findings can be taken into consideration by the government and used as material for policy studies on the importance of mastering digital financial inclusion in the sustainability of MSMEs.

Keywords

financial literacy, financial well-being, business
sustainability, digital financial inclusion, female MSME
actors

JEL Classification

M21, G40, G41, D22

INTRODUCTION

Women as export craft MSME actors have skills and knowledge in traditional craft techniques because, with creative hands, they can create beautiful craft works (Nurhasanah & Rochmawati, 2023). Some craft products made by women MSME actors in East Java include bamboo weaving, synthetic products, wood crafts processed into sandals, coconut shells, pandan leaves with bag products, leather crafts, and batik, all of which can penetrate the export market. The role of women in attaining business sustainability can bring uniqueness to business management, such as sensitivity to the market, creativity, and multitasking abilities. However, women may have poor understanding of digital financial inclusion applications and many female MSME actors do not fully understand the benefits of online applications (Maimuna et al., 2022) and are trapped in illegal loans that offer convenience (Wulandari & Paramita, 2023).

The role of financial literacy is to help in making financial decisions and increasing business sustainability (Aribawa, 2016). Rumini and Martadiani (2020) explained that increasing financial literacy can improve the sustainability of MSMEs. Dahmen and Rodríguez (2014) showed that financial literacy can increase business success and sustainability. The sustainability of MSMEs is partly due to financial well-being. Financial well-being is realized when someone can meet all needs, has money left over, can control finances, and feels financially secure, now and in the future (Muir et al., 2017). Safitri et al. (2022) revealed that the ability to manage finances well will create financial well-being and impact the sustainability of MSMEs, so financial well-being influences the sustainability of MSMEs. The relationship between financial well-being and the sustainability of MSMEs needs to be strengthened by digital financial inclusion. Allen et al. (2012), Kabakova and Plaksenkov (2018), Belayeth Hussain et al. (2019), and Adam et al. (2021) explain that financial inclusion can bring many welfare benefits to individuals.

The inability of MSME artisans to fulfill orders due to a lack of funds in export crafts is a threat to the sustainability of their business. Many crafters are trapped in illegal digital loans due to a lack of financial knowledge. The lack of knowledge of female export craft MSME actors is one of the causes of financial stability failure and has an impact on the sustainability of their business.

1. LITERATURE REVIEW AND HYPOTHESES

Many studies have assessed the factors influencing business sustainability in the MSME sector, such as financial literacy and well-being. The increasing sustainability of MSMEs is due to the role of financial literacy, which reflects the business's improvement and capabilities (Rumini & Martadiani, 2020). Financial literacy is a basic need for MSME actors (Dahmen & Rodríguez, 2014). Understanding financial literacy is essential for developing small and medium enterprises (Maulana & Suyono, 2023). Financial literacy is the ability to manage financial resources effectively, which requires sufficient financial knowledge, skills, attitudes and experience to achieve company goals, maximize profits and maintain the company's survival (Eniola & Entebang, 2015). If MSME actors have sound financial knowledge, they can manage, plan, and make decisions related to financial aspects and understand what is more important in business development so that business sustainability can be achieved (Herawati et al., 2018).

Dahmen and Rodríguez (2014) stated that financial literacy can increase business success and sustainability because of the flexibility of entrepreneurs who can access finance easily. Aribawa (2016) explained that with sound financial literacy, MSME actors could make proper management and financial decisions to increase business

sustainability. Rumini and Martadiani (2020) explained that increasing financial literacy can increase the sustainability of MSMEs. Hilmawati and Kusumaningtias (2021) stated that financial literacy is intricately linked to personal financial management, encompassing investment decisions, finance, and asset management, and significantly influences the enhancement of corporate sustainability.

Financial literacy is managing financial resources effectively, which requires sufficient financial knowledge, skills, attitudes, and experience to achieve company goals, maximize profits, and maintain the company's sustainability (Eniola & Entebang, 2015). A person can read, analyze, and make decisions related to finance by utilizing money effectively and efficiently to achieve financial well-being (Rai et al., 2019). Iramani and Lutfi (2021) stated that financial well-being can be achieved when someone with good financial literacy makes healthy financial decisions. Individuals that are financially prepared will attain superior financial well-being (Kamakia et al., 2017). Financial literacy significantly impacts financial well-being in Pakistan (Younas & Farooq, 2019). Yuesti et al. (2020) established that the improvement of financial well-being was due to the impact of household financial literacy in Denpasar, Bali. A positive link exists between financial literacy and the financial well-being of MSME stakeholders in Gorontalo Province (Adam et al., 2021). Osman et al. (2018) established a significant

association among financial literacy, financial stress, and the financial well-being of students in Labuan. Yuesti et al. (2020) showed that financial literacy influences financial well-being in the Sidakarya village community Indonesia. Agyei et al. (2019) demonstrated that the financial literacy of MSME owners significantly influences financial well-being in Ghana.

The sustainability of MSMEs is partly due to financial well-being. Joo (2008) stated that economic well-being is a financially healthy state. Sabri et al. (2012) noted that financial well-being is a state of financial health, happiness, and freedom from worry based on the subject's assessment of a person's economic situation. Business continuity refers to the sustained operational state of an enterprise, encompassing ongoing activities such as growth, development, and strategies aimed at preserving operational stability, ultimately contributing to the organization's persistence and viability (Mas-Verdú et al., 2015).

Vlaev and Elliott (2014) assert that financial well-being is contingent upon individual financial management, wherein the individual exercises control over their financial matters to effectively manage their resources. Chatterjee et al. (2019) stated that income, savings, debt, and accumulation of wealth to economic status are measures that are usually used for objective financial well-being, so the creation of business sustainability is based on financial stability. The creation of financial well-being will have an impact on increasing business sustainability. Atkinson and Messy (2011) and Dijkhuizen et al. (2018) stated that entrepreneurs must maintain and improve welfare to achieve positive long-term business results.

Mahendru (2021) defines financial well-being as an individual's ability to meet current financial obligations and financial planning to achieve financial freedom. Zakaria et al. (2014) revealed a significant relationship between well-being and business sustainability in the service sector. For SMEs, the need for financial support to resolve debt problems can be further reduced, so SMEs that are free from financial problems can increase their sustainability because they can reduce concerns about financial problems (Xiao et al., 2022).

Financial well-being describes an individual's ability to manage daily and monthly finances and financial freedom to make choices to achieve financial goals (Grinstein-Weiss & Bufe, 2019). According to Shim et al. (2010) and Netemeyer et al. (2018), financial well-being is significantly related to business success. The relationship between financial well-being and the sustainability of MSMEs needs to be strengthened by digital financial inclusion because digital financial inclusion provides easier access for MSMEs to obtain financial services. Digital financial services are an effective policy that gives opportunities to drive indicators and inclusion factors in the finances of MSME actors (Safitri et al., 2022). Difficulty accessing financial services means that SMEs have to rely on limited savings for investment and on profits to continue their business (Allen et al., 2012). Financial inclusion can trigger welfare for MSME actors (Ozili, 2020). Kabakova and Plaksenkov (2018), Belayeth Hussain et al. (2019), and Adam et al. (2021) concluded that financial inclusion with accessibility, availability, utilization, and welfare affects financial well-being.

This study aims to analyze the influence of financial literacy on business sustainability, either directly or indirectly, through financial well-being as mediation and the inclusion of digital finance as moderation. The research framework and hypotheses are shown in Figure 1. Based on the objectives outlined, the following hypotheses are proposed:

H1: Financial literacy has a positive influence on the sustainability of women's SMEs in the export craft sector.

H2: Financial literacy has a positive influence on the financial well-being of female SME actors in the export craft sector.

H3: Financial literacy has a positive influence business sustainability through financial well-being of women's SMEs in the export craft sector.

H4: Financial well-being mediates the influence of financial literacy on business sustainability of women's SMEs in the export craft sector.

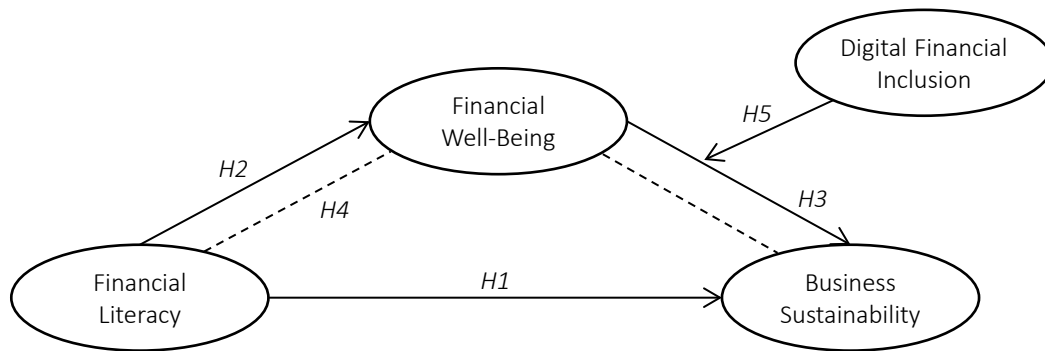


Figure 1. Research framework and hypotheses

H5: Digital financial inclusion moderates the relationship between financial well-being and business sustainability of women’s SMEs in the export craft sector.

Table 1 shows the population and sample based on the research area.

2. METHOD

This study utilized a sample of 236 SMEs drawn from a population of 607, employing the Raosoft sample size calculator method. The sample was extracted from the export craft sector and categorized into five cities: Malang Regency, Lamongan Regency, Madura Regency, Banyuwangi Regency, and Magetan Regency. This sector and region were selected based on representatives from the East Java Regional Coordinating Agency of Indonesia.

This study uses a proportional sampling method to determine the relative magnitude of each regency or city, with a 5% error rate. The unit of analysis used was the owners and members of the East Java Export Craft SME Association. The collection was carried out from May to July 2024 using a Likert scale measurement. This study focuses on four variables: financial literacy, financial well-being, business sustainability, and digital financial inclusion.

The formulation of the questionnaire for the questions asked is based on the results of previ-

Table 1. Population and sample distribution

No.	Regional Coordination Agency	Region	Population Size	Number of Samples
1	Madiun	Magetan Regency	127	49
2	Jember	Banyuwangi Regency	146	57
3	Malang	Malang Regency	105	41
4	Pamekasan	Bangkalan Regency	106	42
5	Bojonegoro	Lamongan Regency	123	47
Total			607	236

Table 2. Research instrument measurement

Variables	Code	Indicator	Questionnaire Items	Source
Financial Literacy (FL)	FL1	Debt Literacy	Choose a loan product that suits business Use credit according to the purpose of the credit application	Mutegi et al. (2015); Van Rooij et al. (2011); Ratnawati et al. (2022)
	FL2	Bookkeeping Literacy	Recording income and expenses Understanding financial records	
	FL3	Financial Planning Literacy	Making initial financial planning in doing business Record financial planning to ensure it is right on target	
	FL4	Savings Literacy	Have a savings account to support business operations Understanding savings as the remaining income	
	FL5	Risk Literacy	Understanding the risks of inventory ownership Risks in making credit purchases	

Table 2 (cont.). Research instrument measurement

Variables	Code	Indicator	Questionnaire Items	Source
Financial Well-Being (FWB)	FWB1	Current Financial Condition	Have a healthy financial condition Feel comfortable facing the current financial situation	Adam et al. (2021); Sabri et al. (2012); Renaldo et al. (2020); Sumani and Roziq (2020)
	FWB2	Money saved	Have savings that are used for the future Save for unexpected business needs	
	FWB3	Financial Management Skills	Have the ability to earn income to achieve goals Have the ability to overcome and control financial problems	
	FWB4	Financial Adequacy	Have a perception of the financial adequacy of business Have financial resources to manage a business	
Business Sustainability (BS)	BS1	Operating revenues	Business income increases every year Business income can cover business expenses	Safitri et al. (2022); Ibrahim et al. (2012)
	BS2	Business Growth	There is business growth every year Business growth is always stable	
	BS3	Product Quality	The quality of the products produced is good Product quality can compete with other products	
	BS4	Competitiveness	Able to have competitiveness in its products and business Able to have competitiveness in promotion and distribution	
	BS5	Business Environment Conditions	A supportive environment for obtaining raw materials The business environment supports coordination with fellow SMEs	
Digital Financial Inclusion (DFI)	DFI1	Availability of Access to financial products	Understanding access to digital products Understanding access to digital financial services products	Maulana and Suyono (2023); Masithah et al. (2023)
	DFI2	Use of financial products and services	Using digital banking loan service products Using digital banking financial products for business activities	
	DFI3	Quality of financial products and services	Understanding the quality of official OJK digital financial services products The quality of digital financial services is easy to use	

ous research and adjusted to the conditions of MSME actors for the variables and indicators studied. Table 2 presents the measurement instrument with a description of the variables and indicators.

This study employed structural equation modeling (SEM) to determine the direct effects of financial literacy and financial well-being on business sustainability. Financial well-being acts as a mediating variable between financial literacy and business sustainability (indirect effect), with the Sobel test utilized to evaluate mediation. The variable of digital financial inclusion moderates the effect of financial well-being on business sustainability.

3. RESULTS

3.1. Confirmatory factor analysis

The outcomes of dimension or indicator measurements, variables capable of constituting latent variables using confirmatory factor analysis (CFA)

as determinants of financial literacy indicators, financial well-being, company sustainability, and digital financial inclusion, are predicated on factor loading values. Table 3 presents a summary of the CFA exam findings for the indications that constitute the variables.

Based on Table 3, all of these indicators are essential to shaping financial literacy. Still, the indicator that makes the most significant contribution to financial literacy is financial planning literacy, with a loading factor of 0.752. In contrast, the one with the lowest contribution is risk literacy, with a loading factor value of 0.525. The strongest indicator influencing the financial well-being variable is money saved, with a loading factor of 0.525. At the same time, financial management skills are the weakest, with a loading factor value of 0.657. Business sustainability is formed with the most potent indicator, namely product quality, with a loading factor value of 0.729, and the weakest indicator that forms business sustainability is the condition of the business environment, with a

Table 3. Factor loading (λ) of variables and indicators

Variables and Indicators		FL
Financial Literacy (FL)	→ Debt Literacy	0.661
Financial Literacy (FL)	→ Bookkeeping Literacy	0.710
Financial Literacy (FL)	→ Financial Planning Literacy	0.752
Financial Literacy (FL)	→ Savings Literacy	0.576
Financial Literacy (FL)	→ Risk Literacy	0.525
Financial Well-Being (FWB)	→ Current Financial Condition	0.737
Financial Well-Being (FWB)	→ Money saved	0.764
Financial Well-Being (FWB)	→ Financial Management Skills	0.657
Financial Well-Being (FWB)	→ Financial Adequacy	0.746
Business Sustainability (BS)	→ Operating revenues	0.692
Business Sustainability (BS)	→ Business Growth	0.721
Business Sustainability (BS)	→ Product Quality	0.729
Business Sustainability (BS)	→ Competitiveness	0.577
Business Sustainability (BS)	→ Business Environment Conditions	0.530
Digital Financial Inclusion (DFI)	→ Availability of Access to financial products	0.734
Digital Financial Inclusion (DFI)	→ Use of financial products and services	0.727
Digital Financial Inclusion (DFI)	→ Quality of financial products and services	0.774

loading factor value of 0.530. The digital financial inclusion variable is formed with three indicators. Still, the indicator that makes the most substantial contribution is the quality of financial products and services, with a loading factor value of 0.774. The most minor contribution indicator is the use of financial products and services, with a loading factor value of 0.727.

3.2. Hypotheses testing

Model fit testing is employed to verify that the constructed structural model accurately elucidates the direction of influence and does not introduce

bias. The test is employed to ascertain if empirical facts substantiate the hypothesis model. Figure 2 presents the comprehensive findings of the SEM analysis, indicating that the model is appropriate and viable for interpretation, facilitating further discussion through the evaluation of goodness of fit indices.

Based on Figure 2, the evaluation of the proposed model shows that evaluating the model against the construct as a whole produces a value according to the cut-off value, so the model is categorized as suitable for hypothesis testing. Table 4 shows direct influences between variables.

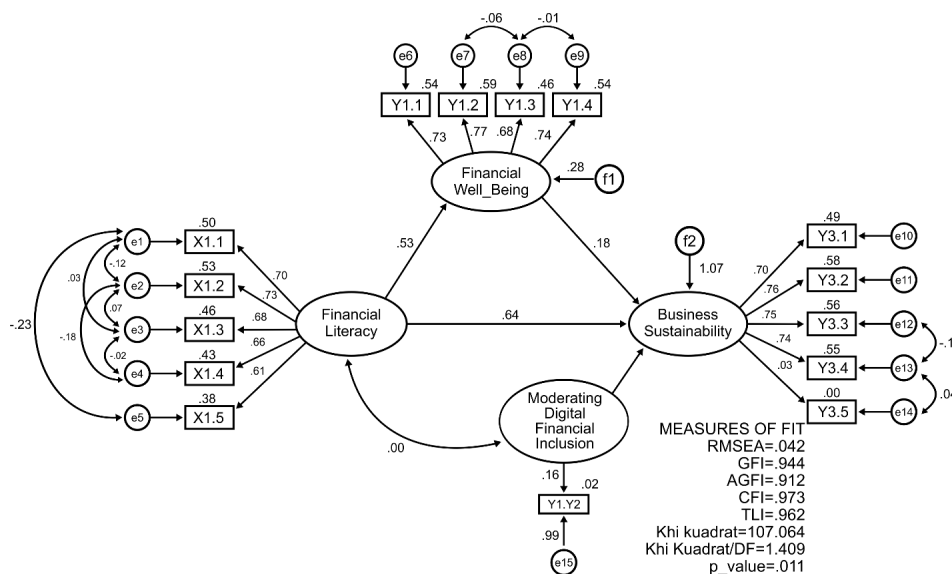


Figure 2. Path analysis of SEM results

Table 4. Standardized structural estimates of the structural model (direct relationship)

(Direct Relationship)			Hypothesis (H)	Path Coefficient	p-value	Note
Financial literacy	→	Business Sustainability	H1	0.645	0.049*	Accepted
Financial literacy	→	Financial Well-Being	H2	0.533	0.000*	Accepted
Financial Well Being	→	Business Sustainability	H3	0.180	0.026*	Accepted

Note: * significance level of 5 percent.

According to Table 4, the influence of financial literacy on firm sustainability yielded a path coefficient of 0.181 with a significance level of 0.049, validating hypothesis one. The findings demonstrate that financial literacy directly influences the viability of handmade MSMEs in East Java, Indonesia. The testing results on the impact of financial literacy on financial well-being yielded a path coefficient of 0.533 with a significance level of 0.000, indicating acceptance of hypothesis two. The results demonstrate that financial knowledge directly influences financial well-being. The influence of financial well-being on business sustainability yielded a path coefficient of 0.180 with a significance level of 0.026; so, hypothesis three is accepted. The findings demonstrate that financial literacy directly influences the business sustainability of export craft MSMEs in East Java, Indonesia. Meanwhile, the mediation relationship using the Sobel test is explained in Table 5.

Table 5 explains the effect of financial literacy on business sustainability mediated by financial well-being, which obtained a significance value of 0.038, which means that hypothesis four is accepted. These results indicate that financial well-being can mediate the effect of financial literacy on business sustainability. The impact of financial well-being on business sustainability moderated by digital financial inclusion obtained a significance value of 0.049, indicating that hypothesis five is accepted and that digital financial inclusion can moderate the effect of financial well-being on business sustainability.

4. DISCUSSION

Understanding financial literacy and digital financial inclusion can improve female export craft MSMEs' business sustainability and financial stability in East Java, Indonesia. This study found that high financial literacy can improve the sustainability of female export craft MSMEs but also affect financial stability. Understanding financial literacy by female export craft MSMEs with them in recording and managing finances well so that they can play a role in business sustainability. These results support the opinion that financial literacy possessed by MSMEs, along with knowledge of bookkeeping with financial records, financial planning, having a savings account, and understanding credit purchases, can improve the sustainability of their business (Dahmen & Rodríguez, 2014). The study's results on the role of financial literacy can improve the financial well-being of female export craft MSMEs, with their financial stability manifested in the ownership of financial savings and the ability to overcome financial problems for their business. This study's results align with Yuesti et al. (2020) and Younas and Farooq (2019) that understanding good financial literacy can improve financial well-being. In this study, the status of respondents with female characteristics with business ownership is closely related to their ability to master financial management as capital to achieve financial stability and business sustainability.

This study found that the financial well-being of female MSMEs export craft actors is a condition where MSME actors can mainly meet financial obligations

Table 5. Mediation and moderation relationships between variables

(Indirect Relationship)				Hypothesis H	p-value	Note	
Financial literacy	→	Mediating Financial Well-being	→	Business Sustainability	H4	0.038*	Accepted
Financial Well-being	→	Moderating Digital Financial Inclusion	→	Business Sustainability	H5	0.049*	Accepted

Note: * significance level of 5 percent.

both now and in the future; they can overcome financial problems to achieve business sustainability. The results of this study support research conducted by Dijkhuizen et al. (2018), which states that financial well-being affects business sustainability, with stable MSMEs finances enabling them to continue their business by increasing business growth and product quality. Likewise, Safitri et al. (2022) found that MSME actors with financial well-being can continue their business well. Financial well-being is created with good financial literacy and owned by female MSMEs export craft actors in East Java, Indonesia, impacting business sustainability.

The results of this study also state that financial well-being can mediate the influence of financial literacy on business sustainability. The increase in financial well-being occurs because MSMEs actors have high financial literacy and can manage finances well; for example, they obtain loans to increase business activities and record finances to achieve financial well-being. The increase in financial well-being is due to the role of financial literacy being able to increase the sustainability of the business of East Java female export craft MSMEs actors with increasing income so that they can cover their business expenses, maintain the quality of the products sold, can diversify products with the uniqueness of each region and products have good competitiveness, promotion and distribution. The results of this study strengthen the statement of Chatterjee et al. (2019), who stated that income, savings, debt, and accumulation of wealth to economic status are measures that are usually used for objective financial well-being so that the

creation of business sustainability is based on the achievement of financial stability.

The study results state that digital financial inclusion is an essential factor for the success of women's export craft MSMEs businesses. Digital financial services allow all financial activities to be carried out electronically through digital platforms for business activities and sustainability. This proves that digital financial inclusion can moderate the influence of financial well-being on the sustainability of women's export craft MSMEs businesses in East Java. They have utilized several digital service products with the ability to access and understand financial products and other banking products for the operational efficiency of their businesses. Digital financial inclusion with accessibility, availability, and utilization can contribute to the financial well-being of female export craft MSMEs actors so that they can manage their business finances and their groups, both current finances, set aside income for savings, solve financial problems and have financial resources for their businesses. The results of this study support research conducted by Ozili (2020) which found that digital financial inclusion can affect financial well-being. This is because mastery of digital finance makes it easier to transact with the availability of easy access to financial products. This finding continues the research conducted by Belayeth Hussain et al. (2019). Digital financial inclusion affects the financial well-being of MSMEs in Bangladesh. The results of this study indicate that financial well-being can affect business sustainability, which is strengthened by the role of digital financial inclusion.

CONCLUSION

This study aimed to determine factors affecting business sustainability targeting female owners of MSMEs in Indonesia. First, financial literacy and financial well-being have a positive relationship with the sustainability of MSMEs in the craft sector. In other words, increasing the financial literacy of MSMEs and financial well-being can improve business sustainability with increased revenue and business income and better competitiveness. Second, financial well-being can mediate the influence of financial literacy on business sustainability. This means that financial well-being is created with financial literacy knowledge possessed by MSME actors and business sustainability with increasing business income every year, product quality that continues to increase, and competition. Third, financial inclusion can moderate financial well-being toward business sustainability; this shows that an understanding of access to digital banking products and services can create financial well-being that impacts business sustainability. These results strengthen the argument that the sustainability of women MSME actors requires financial literacy, a good understanding of digital financial inclusion, and understanding and mastering access to financial products.

This study has several limitations. First, the data collection is based on training observations conducted on digital financial inclusion. Second, this study does not involve government regulations on digital policies that improve economic sustainability, especially digital financial inclusion policies. Future studies can work on these research gaps.

AUTHOR CONTRIBUTIONS

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Writing – original draft: Ratnawati, M. Taufiq Noor Rokhman.

Writing – review & editing: M. Taufiq Noor Rokhman, Ayu Agus Tya Ningsih.

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