

## THE EFFECT OF FINANCIAL LITERACY, BUSINESS DURATION AND EDUCATION LEVEL ON FINANCIAL SUSTAINABILITY OF MSMES

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### ABSTRACT

This study aims to analyze how financial literacy business duration and background education affects the financial sustainability of msme in Batam. Researcher used a quantitative approach with a survey method through questionnaires distributed to 384 msme owners as a sample, which were selected using purposive sampling technique. The analysis employed Partial Least Squares Structural Equation Modeling (PLS-SEM) to examine the validity, reliability and relationships among the variables. Based on survey data from 384 MSME owners in Batam, results show that financial literacy has a significant positive impact indicating that owners with strong understanding of financial principles are better equipped to maintain and enhance the financial health of the business. Moreover, business duration also contributes positively suggesting that experience over time contributes to financial resilience, while education levels are surprisingly associated with slightly lower financial sustainability, implying that formal education may not directly translate into practical skills needed for msme sustainability. This study concludes that financial literacy is the most dominant factor influencing financial sustainability, while business duration and education contribute to a lesser extent.

Keywords : Financial Literacy; Financial Sustainability; MSMEs Business; Business Duration; Educational Background

### ABSTRAK

Penelitian ini bertujuan untuk menganalisis bagaimana literasi keuangan, durasi usaha, dan latar belakang pendidikan memengaruhi keberlanjutan keuangan UMKM di Batam. Peneliti menggunakan pendekatan kuantitatif dengan metode survei melalui kuesioner yang dibagikan kepada 384 pemilik UMKM sebagai sampel, yang dipilih menggunakan teknik purposive sampling. Analisis ini menggunakan Partial Least Squares Structural Equation Modeling (PLS-SEM) untuk meneliti validitas, reliabilitas, dan hubungan antar variabel. Berdasarkan data survei dari 384 pemilik UMKM di Batam, hasil menunjukkan bahwa literasi keuangan memiliki dampak positif yang signifikan, yang menunjukkan bahwa pemilik dengan pemahaman yang baik tentang prinsip-prinsip keuangan lebih mampu untuk mempertahankan dan meningkatkan kesehatan keuangan bisnis. Selain itu, durasi usaha juga berkontribusi positif yang menunjukkan bahwa pengalaman dari waktu ke waktu berkontribusi terhadap ketahanan keuangan, sementara tingkat pendidikan justru dikaitkan dengan keberlanjutan keuangan yang sedikit lebih rendah, yang mengisyaratkan bahwa pendidikan formal mungkin tidak langsung diterjemahkan menjadi keterampilan praktis yang dibutuhkan untuk keberlanjutan UMKM. Studi ini menyimpulkan bahwa literasi keuangan adalah faktor paling dominan yang memengaruhi keberlanjutan keuangan, sementara durasi usaha dan pendidikan berkontribusi dalam tingkat yang lebih kecil.

Kata Kunci : Literasi Keuangan; Keberlanjutan Keuangan; Usaha Umkm; Durasi Bisnis; Latar Belakang Pendidikan

## INTRODUCTION

Micro, small and medium enterprises are very important for the Indonesian economy. MSMEs play a very important role such as absorbing a large number of workers, reducing the unemployment rate, contributing to Indonesia's GDP and MSMEs have a role that can contribute more to the Indonesian economy. Based on data from the Ministry of Cooperatives and KUM, the growth of KUR of 16.25% in 2020 or around 8.16% in 2021 shows that MSMEs in Indonesia are experiencing challenges, such as needing capital for business development (Cirprandy Riopaldo Tambunan, 2023). The sustainability of MSMEs has a great influence on the economy of a country, both in developed and developing countries (Aulia, 2023). MSMEs face various challenges that can hinder the sustainability of a business, limited finances, lack of support for adequate facilities that hinder an MSME from continuing to grow, increase productivity, and competitiveness and innovate. For MSMEs to be able to maintain their business, an MSME must meet quality, technology, and price standards that are competitive, innovative, and marketed internationally. especially in the current era (Machin, Muhammad Reza Aulia, Joni Hendra, Elvina Safitri, & Bawono, 2023). Financial Sustainability is an important aspect for MSMEs businesses. With the existence of financial sustainability, businesses can survive all problems such as pandemic, supply shock, climate change to internal financial problems. In addition, it can reduce revenue, reduce profits and cause difficulties in accessing raw materials and financial obligations. MSMEs contribute around 61.49% of Indonesia's GDP and are able to absorb around 97% of the workforce (Iman Harymawan, Andini Tri Indahsari, & Fajar Kristanto Gautama Putra, 2022).

Based on previous research conducted by the National Survey of Financial Literacy and Inclusion (SNLIK) 2022, only about 50% of the Indonesian population has a good understanding of financial literacy, with a lower percentage among micro-entrepreneurs, indicating that the country's financial literacy index is 49.68 percent (Azikin, Goso, Sahrir, & Hamid, 2023). Based on study from (Tubastuvi, Ramadani, Rachmawati, & Rahmawati, 2022), financial decision-making improves with increased financial knowledge, because people with high financial literacy are better able to manage their assets and best investments, enabling them to meet their financial objectives and generate profits. A high level of financial literacy will be correlated with successful financial planning. Individuals with low level of financial literacy will have hard time managing their finances. They will be perplexed about the use of money and how to handle their finances in their old age (Budiman & Marvina, 2021).

For MSMEs, this lack of financial knowledge often becomes the biggest obstacle to obtaining formal funding, managing finances, and expanding their business. In addition, MSMEs often face challenges that affect the long-term sustainability of their companies.

Financial literacy not only involves financial products but also involves how an SME manages their own finances. Lack of financial literacy can lead to financial instability in personal finance. A better financial planning approach is largely dependent on financial knowledge making it more accurate to financial judgements and putting them into practical terms that requires financial literacy, financial literacy also plays a role in the achievement of well-being finance (Yuwono, Susanna, Ramadhani, Sasmita, & Sihotang, 2023). Lack of financial awareness makes entrepreneurs save and invest poorly, which keeps the majority of MSMEs from growing and adding to a country's infrastructure (Batam, 2024). A high level of financial literacy can make financial decisions so that it can strengthen individual financial literacy to achieve financial goals. (Dewi, Febrian, Effendi, Anwar, & Nidar, 2020). Poor MSME work results can be caused by a lack of financial literacy. Research shows that MSMEs that apply financial knowledge to entrepreneurial ventures will have the opportunity to grow because important financial planning can be planned properly to reduce recording errors (Ariyati, Agustina, & Miliani T, 2021).

Business duration is an important aspect, because business duration can also improve financial performance so that business owners earn income by advancing the economy and the longer the business is established, the more knowledge and experience. (Fatchu Ukhriyawat et al., 2024) The duration of the MSME business starts from the time the business is established until an unlimited time. The duration of the MSMEs business also reflects that these MSMEs can compete and can survive (Harti & Prayogo, 2024). According to (Azikin et al., 2023), business duration can also affect a person's knowledge in the field of business and financial management. The longer the business is established, the more experience and the better it is in managing its finances.

Education is the main communication tool and the basis for maintaining a capability mindset. This concept encompasses a 'Synthetic Approach' beyond technical knowledge and basic understanding. The sustainability mindset also encourages us to break out of the clutter of conventional management disciplines by emphasizing management ethics, entrepreneurship, environmental studies, systems thinking and self-awareness. Higher education is seen as a game changer in the development of sustainability-related issues (Žalėnienė & Pereira, 2021).

Better educated business owners can handle economic uncertainty, adapt to market conditions and utilize financial tools to their advantage. Applying this knowledge can increase their stability, drive growth and build resilience in ever-evolving circumstances (Urefe, Odonkor, Chiekezie, & Agu, 2024).

There are several barriers that often prevent MSMEs from growing, and one of these is the insufficient financial literacy of these businesses. Without a basic understanding of financial

concepts, people are ill-equipped to make financial management decisions. People need to be financially informed in order to make prudent financial decisions. Overall, there are several reasons why financial literacy is crucial. In the increasingly complicated world of finance, fundamental knowledge is becoming more and more crucial (Klapper & Lusardi, 2019). Although it might be challenging to achieve, financial literacy is essential for entrepreneurs to manage a business. Because they know how crucial financial literacy is to their businesses' success and reputation, entrepreneurs have therefore made a significant effort to acquire it. According to research, financial literacy improves an organization's performance in terms of revenue growth, cost reduction, and operational expense financing availability. Therefore, a lot of people believe that small businesses' ability to manage money is crucial to their success. The more financially knowledgeable an entrepreneur is, the more successful their financial management is going to be (Meressa, 2023).

Financial literacy helps entrepreneurs use a variety of products to make wise decision and empowers them about finance. People with greater financial literacy are better to be able to save money, assess interest rates, diversify risks and tolerate risks (Anshika & Singla, 2022). The knowledge base view states that one of the intangible resources influencing the sustainability of small businesses is financial literacy. Knowledge-based resources are thought to have a greater influence on growth than physical resources when it comes to pursuing an entrepreneurial approach and elucidating how businesses can develop and preserve advantages and capabilities that provide a competitive edge. Combining these resources, however, maintains a competitive edge over time. Because it influences decision-making, including access to financial services, financial literacy is widely recognised as a key component in determining the viability of small businesses. Given that a lack of financial knowledge can lead to poor financial decisions, the recent advancements in small business finance have made entrepreneurial financial literacy a vital survival skill. According to one viewpoint, small businesses may find it difficult to secure formal financing due to owner-managers' low level of financial literacy, which may also make it more difficult for them to produce accurate and superior financial reports (Meressa, 2023). According to (Maushufi & Wilasittha, 2024), financial literacy is an important basis for MSMEs entrepreneurs, because with financial literacy business owners can evaluate objectively and optimize expenses or increase income and adjust strategies to achieve good results. Financial Literacy also builds a solid foundation of financial literacy and management providing significant advantages for growth. Small business owners often have poor levels of financial literacy, and those that operate in rural and isolated areas have even lower levels. Age, education, and gender also cause differences. Therefore, we draw

the conclusion that additional work has to be done to raise small business owners' financial literacy (Brimble et al., 2024).

According to data from Bank Indonesia in 2021, Islamic banking finance for MSMEs increased steadily as the country's economy recovered. MSME lending reached IDR 75.07 trillion in October 2021, an 8.98% year-over-year (yoy) increase. Different financing distribution policies to MSMEs impacted by the COVID-19 epidemic are the driving forces behind this funding (Tjahja, 2022). The financial literacy index of Indonesians is 49.68%, with MSMEs having the lowest literacy, according to data from the Financial Services Authority (OJK) in 2022. Low financial literacy can make it difficult for MSME enterprises to obtain formal funding and manage their finances effectively. Furthermore, MSMEs frequently encounter challenges that affect their long-term company continuity (OJK, 2022).

This research is development research from Niz Hadiyan Nik Azman research with the entitled article is *The Interconnectivity Between Financial Literacy and Financial Sustainability: Evidence from Muslim Micro-Entrepreneurs in Malaysia*. This article entitled the Effect of Financial Literacy, duration of business, education background on financial sustainability in Batam. This research making the financial literacy, year of business operating, Owner education level as independent variable. Meanwhile Financial sustainability is dependent variable. This study focuses on how financial literacy owner education level and year of business owner operating will impact financial sustainability.

## LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

### **The influence of financial literacy on financial sustainability**

Everyone should be financially literate in order to prevent financial problems. Financially literate owners are better equipped to manage any circumstance and demonstrate prudent financial behaviour, particularly in the face of financial challenges. Financial literacy is the ability to apply knowledge and understanding of financial concepts and risks to make effective decisions across a range of financial contexts, to improve individuals' and society's financial well-being, and to enable participation in economic life. (Khawar & Sarwar, 2021). Financial literacy is the ability to manage money through prudent financial planning and decision-making as well as the understanding of the foundations of finance. Small business owners and managers must make complex financial decisions to run their companies due to the intricacies of corporate finance. For this reason, financial literacy ought to be seen as an essential competency. This research showed that only a small percentage of individuals in the majority of countries comprehend the fundamentals of finance, and financial literacy is extremely poor (Hossain, Ibrahim, & Uddin, 2020). Financial literacy enable MSME owners to make a better financial decisions, such as cash flow management, budgeting, and investment,

according to a study by (Klapper & Lusardi, 2019) . shows that financial literacy is positively correlated with the financial performance of small businesses, including revenue growth and access to financing.

H1. Financial literacy has a positive impact on financial sustainability on MSMEs Business.

### **The influence of duration of business on Financial Sustainability**

The duration of the business affects the success of a business, so the longer a business runs, the more experience it has than a business that has not been running for a long time (Hutapea, Lumbangaol, Hasugian, & Siahaan, 2024). An organization's capacity to absorb and apply new knowledge may deteriorate with time. In other words, "knowledge saturation" is reached. If it had been able to create the room or capacity to take in and use more knowledge for the good of the company, growth would have taken place. Even though there are quicker ways to succeed in the short term, SMES that focus on strategic learning and knowledge orientation will survive and expand over time. It is anticipated that older firms would eventually produce the ideal levels of knowledge, even though they might not see substantial organisational or structural expansion (Dhliwayo, 2021). Corporate literacy is a critical component of corporate management, according to empirical studies. Stronger money management abilities are correlated with more financial literacy. (Togun, Ogunrinade, Olalekan, & Jooda, 2022). MSEM's must be adept at financial planning in order to meet their financial goals. Without financial preparation, the goal of money will be hampered, thus it's critical that people take charge of financial planning as soon as feasible. Financial management errors can have serious repercussions and be difficult to fix in the future. People can achieve their financial objectives and aspirations if they use short-, medium-, and long-term financial planning techniques in a clear, accurate, and focused way to reduce potential hazards (Buchdadi, Sholeha, Ahmad, & Mukson, 2020). Researchers found that a firm's performance is positively impacted by corporate leaders who have a greater understanding of the use of financial models (Tumba, Onodugo, Akpan, & Babarinde, 2022). This illustrates how business owners gain a deeper comprehension of the financial management process over extended operations. Over time, business owners improve their capacity to make sound financial decisions, which ultimately makes their company more resilient and sustainable. Based on research (Azikin et al., 2023), the length of time the business has been running affects financial literacy, because the length of time the business has been established, the business owner gets a lot of experience but not necessarily a maximum understanding of finance.

H2. Duration of Business has a positive impact on financial sustainability.

### **The influence of education background of business owners on Financial Sustainability**

The level of education of business owners is very influential on financial literacy and financial sustainability. MSMEs' performance through financial management and planning. Make the most of your Based on research from (Ansir, Isyana, Pongoliu, & Hamin, 2022), the higher the level of education possessed by the business owner, the knowledge of financial literacy and sustainability is also significant and also the business owner will also use this financial literacy wisely. Business owners' financial literacy can enhance time and money while enhancing the quality of the provided goods or services. Additionally, literacy helps business owners obtain Business actors need to understand finance and have other skills. Researchers have found that the performance of MSMEs is positively impacted by the financial literacy of business owners. (Martono & Febriyanti, 2023).

### **H3. Business Owner Education has a positive impact on Financial Sustainability**

#### **RESEARCH METHOD**

Method is a method of work that can be used to obtain something. While the research method can be interpreted as a work procedure in the research process, both in searching for data or disclosing existing phenomena (Zulkarnaen, W., et al., 2020).

#### **Data collection techniques**

This study employs a quantitative research design with a cross-sectional approach, where data were collected at a single point in time. This design is appropriate because the objective of the study is explanatory and associational, aiming to test the extent to which financial literacy, business duration, and education level influence MSME financial sustainability. A theoretical framework was developed prior to analysis to clarify the expected relationships between variables. The study population consists of MSME owners in Batam City. Due to the absence of a complete population list and the need to ensure that respondents meet specific criteria, the research applies purposive sampling. The inclusion criteria are as follows:

1. The respondent must be the business owner
2. The business must operate at least for one year
3. The respondent must be responsible for financial decision.

Eligible Respondents were reached through MSME communities, local business associations and entrepreneurship groups. A total of 384 respondents participated in this study. This number was calculated using Cochran's formula for large populations with a 95% confidence level and a 5% margin of error. This resulting minimum sample requirement is 384, making it statistically adequate for PLS-SEM analysis. The research instrument used in this study was a structured questionnaire distributed via Google Forms. All variables were measured using a five-point Likert scale (1 = strongly disagree, 5 = strongly agree). Data were collected from July to August 2024 through an online questionnaire. To reduce bias, Google Forms was

configured to accept only one response per email account, preventing duplicate submissions. Respondents were screened using eligibility questions to confirm their role and business status.

The research adheres to ethical guidelines. Prior to participation, respondents received an informed consent statement explaining the research purpose, voluntary nature of participation, and confidentiality of their responses. No sensitive personal data were collected, and all information was used exclusively for academic purposes. The data analysis technique were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS 4. This technique is suitable for predictive modeling and does not require multivariate normality. The analysis included:

1. Validity testing

- Convergent validity: outer loading  $\geq 0.70$ ; AVE  $\geq 0.50$
- Discriminant validity: Fornell-Larcker and HTMT criteria  $< 0.90$

2. Reliability testing

- Cronbach's Alpha  $\geq 0.70$
- Composite Reliability  $\geq 0.70$

3. Structural model assessment

- Collinearity (VIF  $< 5$ )
- Coefficient of determination ( $R^2$  and Adjusted  $R^2$ )
- Effect size ( $F^2$ )

## RESULTS AND DISCUSSION

### Respondent Demographic Test

Based on the respondent characteristics table, the majority of business owners are men with a percentage of 52.34%, while women are 47.66%. This shows that men have more businesses than women. In terms of the age of MSME business owners, the age group under 20 years old is 15.63%, while the age group of 21-30 years dominates with 53.65%. Furthermore, the age group of 31-40 years is 18.49%, then the group over the age of 40 is 12.76%. This shows that the age group of 21 – 30 years dominates with the age group that owns MSME businesses. Furthermore, for educational groups for MSME business owners. In the aspect of education, the majority of respondents have an education level above College or University as much as 49.47%, then elementary school as much as 6.77%, then junior high school as much as 4.43%, then high school as much as 39.84%.

Only a few have this level of education. The majority of MSME business owners are dominated by business owners who finished from university. In the length of business, the majority is dominated by business owners whose business time is under 5 years with as much as 61.98%, then followed by 5-10 years as much as 21.88%, and the last one over 10 years with as much as

16.15%. The majority of MSME business owners have undergone 1-5 years of the MSME business.

Look Table 2 contains questionnaire of personal data, financial literacy and financial sustainability. Financial literacy and sustainability measured using specific question and the data sources are based on previous studies

Look Table 3. depicts that the result of convergent validity test of financial literacy and financial sustainability within year of business operate and educational background owner. Which indicate that the loading factor exceeds 0.70. Moreover, the Average variance extracted also surpasses 0.50, confirm that the collected data are valid. A good outer loading must exceed 0.70, because it has a strong correlation with the construct. In addition, AVE must higher than 0.50, because it indicates the construct can be explained 50% of the indicator. Which suggest a good convergent validity

Table 4. illustrates that the test results of composite reliability and cronbach's alpha consistently exceeds 0.70. It shows strong consistency and well construct measurement scale with high dependability. Each variable has a strong basis in accuracy and consistency of the data analysis.

The Fornell-Larcker discriminant validity shows that each construct in the model, such as financial literacy (0.850), financial sustainability (0.898), length of business (1.000) and education background (1.000). It illustrates that the model is a good discriminant validity, which means that the construct is reliable and they do not correlate with each other.

The results of the discriminant validity depict all of the values of variable are below  $< 0.90$ . Which means it indicate good discriminant validity.

According to (Joseph F Hair, Risher, Sarstedt, & Ringle, 2019) research, VIF is used to evaluate formative collinearity. If the value of the variance inflation factor is high (at 5 or higher), then it can be said that the number shows a problem with the predictor collinearity. However, it can also occur if the collinearity number is lower than 3. Ideally, the VIF value should be close to 3 and lower. A VIF 1.000 illustrates that it has no multicollinearity. The other variable values ranging from 1.917 to 3.707 it shows that multicollinearity doesn't concern in this study. On the other hand, there are 2 slightly higher VIF, which is 3.707 and 3.546 which are manageable.

According to (Joe F. Hair, Sarstedt, Hopkins, & Kuppelwieser, 2014) research, it shows that  $R^2$  is a predicting measure in the model, showing the extent to which exogenous variables explain endogenous variables, with higher values indicating that the prediction is better. Generally,  $R^2$  values are categorized as substantial ( $\geq 0.75$ ), moderate ( $\approx 0.50$ ), or weak ( $\approx 0.25$ ). The data depicts that financial sustainability, has 0.346 which it accounts 34.6 percent of the

variance.

The effect  $F^2$  test is used to determine its impact on financial literacy, length of business and education background. The variable of financial literacy shows a large effect, indicating a strong influence on financial literacy. On the other hand, length of business and education background has much smaller  $f^2$  values of 0.028 and 0.019 respectively, indicates that the effects are weak and relatively minor compared to financial literacy. In conclusion, financial literacy plays a dominant role in this model, meanwhile length of business and education background contribute very little to explaining the variance in the dependent variable.

## **Analysis and Discussion**

### **The effect of Financial Literacy on Financial Sustainability**

It shows the financial literacy has a positive significant impact of financial sustainability. This suggests that MSMEs owners who has a high understanding of financial principles such as budgeting, investing and cash flow management are more likely to improve or maintain the financial health of their business, it also aligns with the previous study from (Klapper & Lusardi, 2019). Financially literate MSMEs owners are able to navigate crises, allocate resources effectively and plan for long term stability. Moreover, (Meressa, 2023) states that the ability of MSMEs business owner able to manage their money is crucial for the long term stability. Similarly, (Hossain et al., 2020) asserts that financial literacy is seen as a necessary skill, because the complexities of corporate finance and it requires for the owner to make difficult financial decision to operate their business.

### **The effect of Length of Business on Financial Sustainability**

Similarly, length of business also demonstrates a significant positive. Although with a smaller impact compared to financial literacy. Which means the length of business impact the financial sustainability. This also aligns with the previous studies by (Azikin et al., 2023), Over time, experienced business owners are more likely to have faced and adapt various situations over market dynamics and it makes them more financially resilience over time. According to (Dhliwayo, 2021), over time MSMEs owner who prioritize knowledge orientation and learning will endure and grow. In addition, MSMEs owner may gain deeper comprehension of financial management during extended operations. Over time, owner of business gradually increases their financial decisions, which eventually lead to strengthens and sustains of their own businesses (Tumba et al., 2022).

### **The effect of Education Background on Financial Sustainability**

Conversely, the results reveal that educational background has a negative impact towards the financial sustainability, this contradicts with the literature from (Žalėnienė & Pereira, 2021), who asserts that higher education is important for the development of

sustainability .One possible explanation that MSMEs owner who has higher education may focus more on theory rather than practical financial management skills in a MSMEs business. It also aligns with the study from (Urefe et al., 2024) who highlight that educated business owners are able to handle economic uncertainty, adapt to market and utilize financial tools for their advantage that could lead to increase stability, growth and resilience . But it must be accompanied practical training. According to (Brimble et al., 2024) MSMEs owner often have poor levels of financial literacy, and those that operate in rural and isolated areas have even lower levels. It also worth taking business specific training more valuable than a formal education and need additional work to raise small business owners' financial literacy. Especially where financial decision is more highly important than a formal education.

### **Conclusion**

This study investigates the effect of financial literacy, business duration and education background on the financial sustainability of MSMEs in Batam. This finding shows that financial literacy significantly positive influences financial sustainability, it shows that financial literacy is more theory implications that indicates people who have higher understanding of financial principles such as budgeting, investment and cash flow management are more capable of maintaining and improving their business health.

In addition, the duration of business also shows a significant but with a smaller positive effect on financial sustainability. It suggests that duration of business is more to theory implications. It suggests that over time, owners may gain valuable experience that contribute to strengthens and sustains of their own business. However, the experience does not always translate to perfect financial management, which still needs for continue learning.

financial sustainability. This contradicts with the literature. It suggests that the education of business is more to practical implications., that it may emphasize knowledge, which is less applicable to practical financial management of MSMEs business. This implies that financial education may be more beneficial than formal academic qualifications in improving MSMEs sustainability.

Despite these insights, this study has several limitations. First, the sample is limited to MSMEs owners in Batam, which may not be representative of other regions in Indonesia or in different economic contexts. Second, the use of self -reported online may introduce response bias, especially in assessing financial literacy and sustainability. Lastly, the model only includes three independent variables financial literacy, business duration and education background/level.

Therefore, future research should think about broadening the study's geographic reach, include more variables that can affect financial sustainability and using a mixed methods approach. Moreover, exploring demographic moderating effects such as age, gender or business

sector will reveal more deeper trends. Future research will be able to create more comprehensive models and inform more policies to support MSMEs development.

Overall, the study highlighted that financial literacy is the most important factor in strengthening financial sustainability in MSMEs business, while duration of business contributes moderately and education background need to implement practical training to improve the financial literacy for MSMEs owners. It can be through specific programs this is essential for long term stability and contribution to the business.

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### PICTURE AND TABLE

Picture Business Owner Education has a positive impact on Financial Sustainability  
Research Model

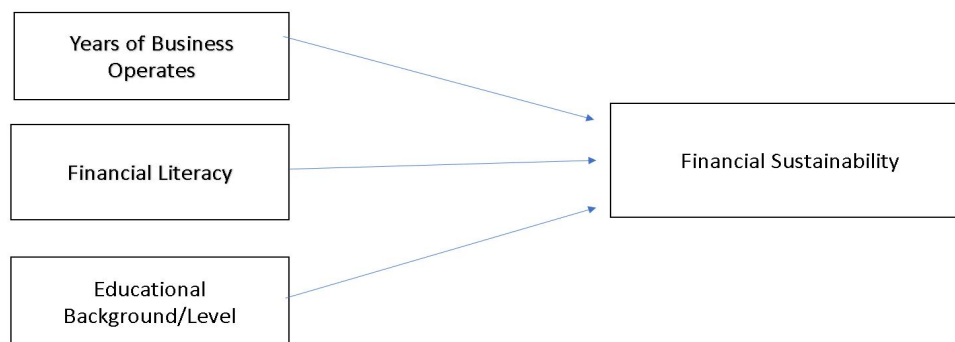


Table 1. Demographic Data of Respondents

Characteristics	Type	N	Percentage
Gender	Male	201	52.34%
	Female	183	47.66%
Age	< 20 Years	60	15.63%
	21 – 30 Years	206	53.65%
	31- 40 Years	71	18.49%
	>40 Years	49	12.76%
Education	Primary School	26	6.77%
	Secondary School	17	4.43%
	High school	153	39.84%
	College / University	190	49.47%
Length of Business Operates	< 5 Years	238	61.98%
	5-10 Years	84	21.88%
	>10 Years	62	16.15%

Source: Primary Data Processed (2025).

Table 2. Measurement Items

Variable	Pertanyaan	Sumber
Demography		
- Personal Data	Male / Female Age Educational Background Years Of Business Operate Total Business Revenues Total Business Assets	
Independent		
Financial Literacy	I Have a better understanding of how to invest <i>Saya memiliki pemahaman yang lebih baik tentang cara menginvestasikan uang saya st my money</i> <i>I have adequate knowledge of Time Value Money</i> <i>Saya memiliki pengetahuan yang memadai tentang Nilai Waktu Uang</i> I have a better understanding of financial instruments Like Stocks, Bonds, Mutual Funds etc <i>Saya memiliki pemahaman yang lebih baik tentang instrumen keuangan seperti Saham, Obligasi, Reksa Dana, dll.</i> I have the ability to create financial records for my income and expenses <i>Saya memiliki kemampuan untuk membuat catatan keuangan untuk pendapatan dan pengeluaran saya</i> I didn't have the slightest difficulty in managing my finances <i>Saya tidak mengalami kesulitan sedikitpun dalam mengelola keuangan saya</i>	
Dependent		
- Financial Sustainability	The financial value of my business has increased within the last five year <i>The financial value of my business has increased within the last five years</i> My business revenue has increased in the past five years. <i>Pendapatan bisnis saya meningkat dalam lima tahun terakhir.</i> Our company has maintained a steady assets growth <i>Perusahaan kami telah mempertahankan pertumbuhan aset yang stabil</i>  Compared to major competitors my firm possesses a relatively higher level of balance between financial, social, and environmental aspects. <i>Dibandingkan dengan pesaing utama, perusahaan saya memiliki tingkat keseimbangan yang relatif lebih tinggi antara aspek keuangan, sosial, dan lingkungan.</i>	(Tumba et al., 2022) (Seraj, Fazal, & Alshebami, 2022)

Table 2 contains questionnaire of personal data, financial literacy and financial sustainability. Financial literacy and sustainability measured using specific question and the data sources are based on previous studies

Table 3. Convergent Validity Test

Variable	Indicator	Outer loading	AVE	Results
Financial Literacy	FL1	0.912	0.723	Valid
	FL2	0.870		
	FL3	0.805		
	FL4	0.871		
	FL5	0.788		
Financial Sustainability	FS1	0.903	0.807	
	FS2	0.907		
	FS3	0.892		
	FS4	0.890		

Table 4. Reliability Test

Variables	Cronbach's Alpha	Composite Reliability	Valid
FL1	0.904	0.911	Reliable
FS1	0.920	0.923	Reliable
EB1	1.000	1.000	Reliable
LB1	1.000	1.000	Reliable

Table 5. Discriminant Validity Test (Fornell-Larcker)

	FL1	FS1	LB	EB
FL1	0.850			
FS1	0.552	0.898		
LB	-0.222	0.058	1.000	
EB	0.450	0.097	-0.398	1.000

Table 6. Discriminant Validity Test (HTMT- Ratio)

	FL1	FS1	LB	EB
FL1				
FS1	0.603			
LB	0.227	0.072		
EB	0.471	0.100	0.398	

Table 7. Collinearity Statistics

Construct	VIF
FL1	3.707
FL2	2.748
FL3	1.995
FL4	2.692
FL5	1.917
FS1	3.102
FS2	3.546
FS3	3,134
FS4	2.701
YB	1.000
EB	1.000

Source: Primary Data Processed (2025).

Table 8. Effect Size of R<sup>2</sup> Test

Variable	R <sup>2</sup>	R <sup>2</sup> Adjusted
FS1	0.351	0.346

Table 9. Effect Size of F<sup>2</sup> on financial literacy

Variable	F <sup>2</sup>
Financial Literacy	0.510
Length of business	0.028
Education Background	0.019

Table 10. Direct Path Coefficient Test

Direct relationship	Beta Coefficient	P value	Results
Financial Literacy > Financial Sustainability	0.647	0.000	Significant
Educational Background > Financial Sustainability	-0.135	0.030	Significant
Length Of Business -> Financial Sustainability	0.150	0.000	Significant