



Analysis of Financial Literacy and Sustainable Financial Literacy Levels in Surakarta's MSMEs

Wahyu Mei Susilowati¹, Muhammad Sabandi*¹

¹Economics Education, Faculty of Teacher Training and Education, Universitas Sebelas Maret, Surakarta
E-mail: muhsabandi@staff.uns.ac.id

Article Info	Abstract
Article History Received: September, 2025 Revised: October, 2025 Published: November, 2025 Keywords: Financial Literacy, Sustainable Financial Literacy, MSMEs Doi: http://dx.doi.org/10.23960/E3J/v8.i2.194-202	The important factors in business management, especially for MSMEs, are financial literacy and sustainable financial literacy. However, research in this field in developing countries is still lacking. This study fills that gap by analyzing the financial literacy and sustainable financial literacy levels among MSME entrepreneurs in Surakarta. A descriptive quantitative approach through the survey method was chosen in this study. The sample in this study consists of 180 MSME entrepreneurs who are still actively operating in Surakarta, selected using non-probability sampling techniques. The results indicate that both the overall level of financial literacy and sustainable financial literacy remain relatively low. Financial literacy and sustainable financial literacy levels can be influenced by gender, age, and education. However, the financial literacy level among MSME entrepreneurs in Surakarta is higher than their sustainable financial literacy level. These findings have important implications for MSME entrepreneurs, the Surakarta government, universities as MSME partners, and the government in the development of MSMEs to realize sustainable businesses.

INTRODUCTION

MSMEs contribute more than 60% to Indonesia's GDP and employ nearly 97% of the workforce in 2020, with more than 65 million business units, which is a vital sector in the Indonesian economy. According to a survey from Badan Pusat Statistik (BPS) in 2023, 68.05% of MSMEs in Indonesia still face obstacles in running their businesses. The types of barriers experienced by MSMEs in Indonesia include those related to capital (35.56%); marketing (20.80%); raw materials (20.21%); weather (10.22%); fuel, electricity, and gas (4.55%); labor (3.15%); infrastructure (2.88%); and others (2.13%). The data shows that capital is the biggest obstacle faced by MSMEs, with 1,802,227 MSMEs (35.56%) experiencing this problem. MSMEs tend to use their own capital, family, relatives, and even loan sharks to run their businesses (Yanti, 2019; Alt, 2016). This problem partly arises from the limited understanding of MSME entrepreneurs about capital (Alt & Spitzbeck, 2016; Amaliyah & Hetika, 2023; Fitriana et al., 2021).

Financial literacy is an important component of managerial competencies, particularly in business financial management. As noted by the OECD in 2020, financial literacy is the capability to make sound decisions concerning personal finances. Financial literacy, particularly in cash flow management, financing, and investment planning, is beneficial to MSME entrepreneurs (Lusardi & Mitchell, 2014). (Liu et al., 2021) explain that financially literate MSMEs have economic flexibility and can achieve sustainable growth. Financial literacy is also shaped by a person's educational background (Anshika et al., 2021). Financial illiteracy is one of the obstacles faced by MSMEs in implementing sustainable business practices (Molina-García et al., 2025). Therefore, improving financial literacy remains a key intervention for enhancing MSME sustainability.

Central Java has the highest number of MSMEs (19,17%), followed by West Java. Surakarta is one of the cities in Central Java with a rapidly growing MSME sector. According to data from Dinas Koperasi, UKM, dan Perindustrian Surakarta, there were 10.907 MSMEs in 2023 and increased to 14.339 MSMEs in 2024, with leading sectors being batik, culinary, and handicrafts. These MSMEs contribute significantly to Surakarta's economic growth. MSMEs are mainly caused by the educational background of MSME entrepreneurs in Surakarta, most of whom are high school/vocational high school graduates

with moderate financial literacy. Meanwhile, some are only elementary school graduates with low levels of financial literacy.

The combination of financial literacy results in sustainable financial literacy (Lanciano et al., 2024). Being able to understand and gauge the impact of financial choices on the socio-ecological dimensions of sustainability is crucial (Filippini et al., 2024). This literacy assists enterprises in the appropriate management of funds to implement practices aligned with the business model of sustainability, and for positive sustainability transformations, for example, supporting innovations that are waste reducing, investing in sustainable technologies, and becoming a waste reducing enterprise. Zioło et al. (2021) demonstrated that indicators of sustainable financial literacy in MSMEs positively correlate with the adoption of green innovations and improved business performance.

The financial literacy of MSMEs in Indonesia has been extensively researched. For example, Suryani et al. (2017) reported that MSME entrepreneurs in Pekanbaru have high levels of financial literacy, a finding consistent with Sari & Wulandari (2024), who noted high levels of financial literacy among MSME entrepreneurs in Teras Malioboro. Conversely, Afifah et al. (2021) noted that MSME entrepreneurs in Mataram City exhibit moderate financial literacy, a finding also reported by Prihatin & Maruf (2019) regarding MSME entrepreneurs in the silver industry in Kotagede, Yogyakarta. Furthermore, Afiah & Eny (2021) showed that the level of financial literacy among MSME entrepreneurs in Makassar remains low. Research focusing on sustainable financial literacy in developing countries like Indonesia is still very limited. Research about the sustainable financial literacy levels was conducted by Filippini et al. (2024) in Swiss, with results showing that financial literacy meets international standards, but sustainable financial literacy levels remain low.

However, these studies have not specifically analyzed the financial literacy and sustainable financial literacy levels among MSME entrepreneurs, particularly in Surakarta. This study aims to analyze financial literacy and sustainable financial literacy levels as important variables for business sustainability. Therefore, given the existence of this research gap or problem, the researcher conducted a study, Analysis of financial literacy and sustainable financial literacy levels in Surakarta's MSMEs.

METHODS

This study uses quantitative descriptive research through a survey method that can reach a wider population, and the use of questionnaires in data collection also requires researchers to use the survey method. The population in this study was MSME entrepreneurs who were still actively operating in Surakarta, totaling 14,339 MSMEs. Then, the minimum sample size required was 100 MSMEs, calculated using the formula from Hair et al. (2014), which was taken using purposive sampling techniques with non-probability sampling.

The instruments were developed by adapting financial literacy items from usardi & Mitchell (2014), namely interest of rates, inflation, diversification of risk, bonds, and mortgages. Sustainable financial literacy questions adapted from Filippini et al. (2024), namely ESG definition, label awareness, ESG examples, impact definition, and ESG impact. The Guttman scale is used to measure financial literacy and sustainable financial literacy levels of MSME entrepreneurs in Surakarta (0 = incorrect answer and 1=correct answer). The score is obtained by dividing the total correct answers by the total number of questions, then multiplying the result by 100%. The level assessment adopts the criteria developed by Chen & Volpe (1998), where the category is high if the correct answer score is >80%, moderate if the answer score is between 60%-79%, and low if the answer score is <60%.

RESULTS AND DISCUSSION

A. Result

Table 1. Characteristics of Respondents

Descriptive Statistics		
	Frequency	Percentage
Gender		
Male	83	46%
Female	97	54%

Age		
18-25	43	24%
26-35	22	12%
36-45	37	21%
46-55	54	30%
>55	24	13%
Last Education		
SD	5	3%
SMP	11	6%
SMA/SMK	102	57%
D3/D4	12	7%
S1	48	27%
S2-dst	2	1%

Source: Data processing result (2025)

This study involved active MSME entrepreneurs in Surakarta based on data obtained from the Dinas Koperasi, UKM, dan Perindustrian Surakarta. The research questionnaire was distributed offline and online to 300 respondents, but only 213 MSME actors filled it out, and after selection, only 180 respondents completed it in full. In this study, there were 83 male respondents and 97 female respondents. Based on age, the largest number of respondents were aged 46-55, with 54 people, and had a high school/vocational school background, with a total of 102 people.

Financial Literacy Level of MSME Entrepreneurs in Surakarta

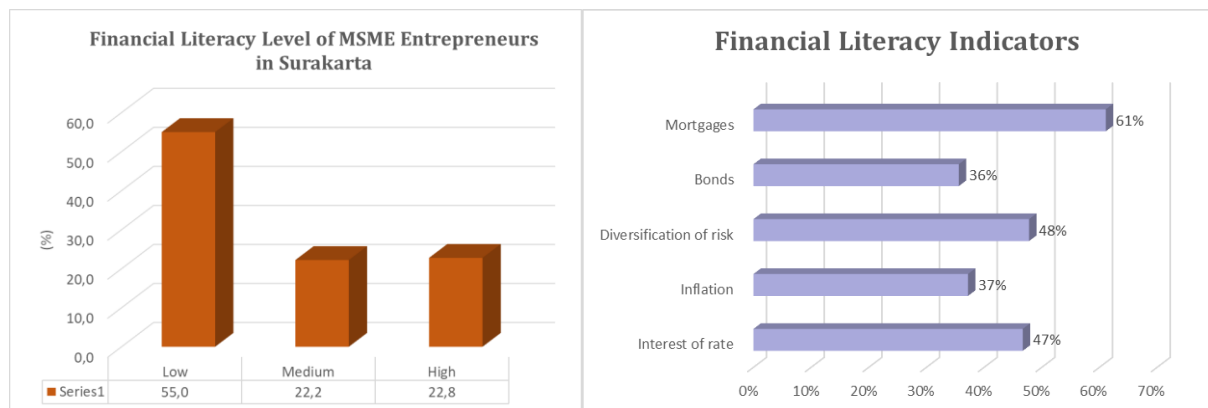


Figure 1. MSMEs entrepreneurs' Financial Literacy Levels

Based on Figure 1, Most MSME entrepreneurs in Surakarta still have a low degree of financial literacy (55%) with a score range of <60. Of the five financial literacy assessment indicators, MSME entrepreneurs have the highest understanding of mortgages (61%), followed by understanding of risk diversification (48%) and understanding of interest rates (47%). The understanding of MSME entrepreneurs in Surakarta is still relatively low, with only 37% and 36% of correct answers.

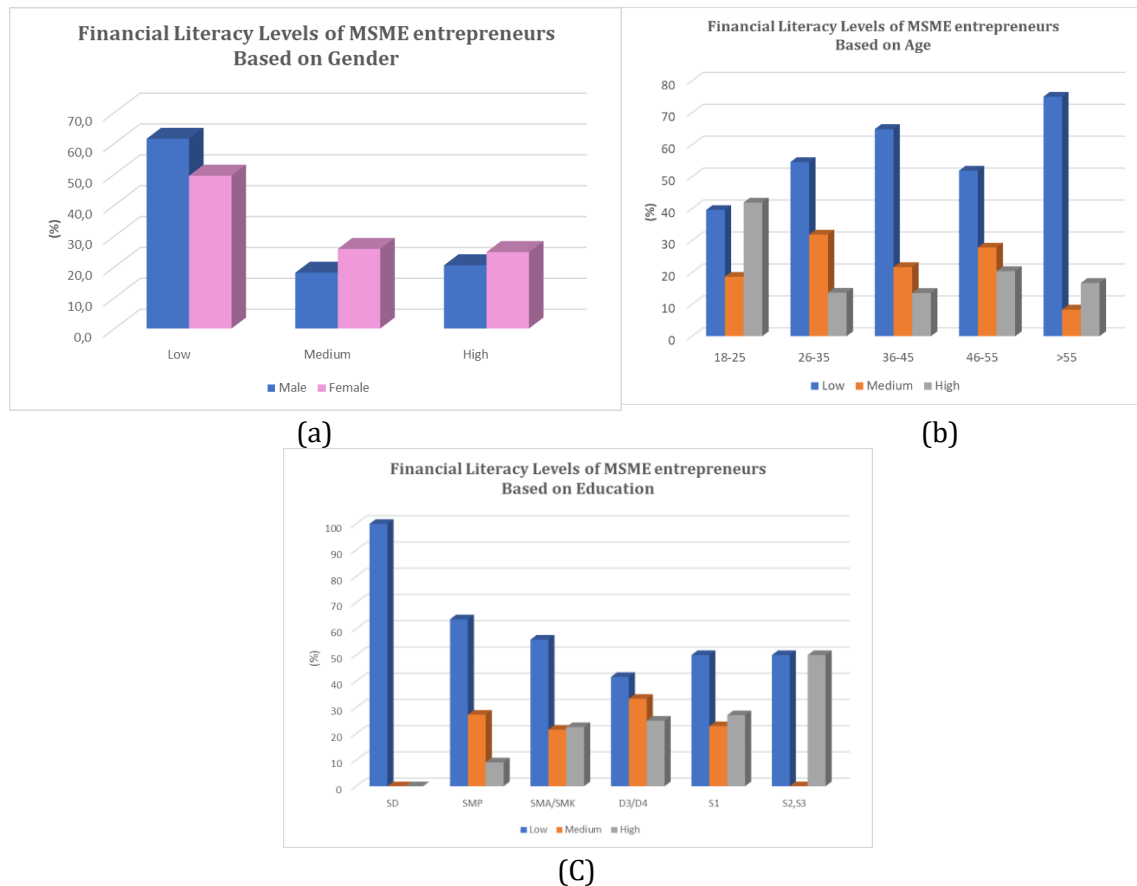


Figure 2. Financial Literacy Levels of MSME entrepreneurs Based on Gender, Age, and Education

Based on Figure 2a, the financial literacy level of MSME entrepreneurs, both male and female, is in the low category, with 61.4% of males having lower financial literacy than 49.5% of females. Conversely, in the medium and high categories, the percentage of female financial literacy is higher than that of males. These results show that female MSME entrepreneurs in Surakarta have higher financial literacy than male MSME entrepreneurs.

Based on Figure 2b, the financial literacy level of MSME entrepreneurs aged 18-25 years is higher than that of other age groups, with a percentage of 42%. Meanwhile, low financial literacy is dominated by MSME entrepreneurs aged >55 years or older, with a rate of 75%. The younger the MSME entrepreneur, the higher their levels of financial literacy, indicating a negative relationship between age and the levels of financial literacy.

Based on Figure 2c, the level of financial literacy of MSME entrepreneurs who graduated from elementary school is still low, with a percentage of 100%. Then, a similar distribution of low, medium, and high literacy levels can be seen in the financial literacy level of MSME entrepreneurs who completed junior high school, senior high school/vocational high school, and diploma/bachelor's degree. Graduates with MSc/PhD are more financially literate, with a percentage of 50% compared to other educational groups. The lower the education level, the lower the levels of financial literacy of MSME entrepreneurs in Surakarta, indicating a positive relationship between education and the levels of financial literacy.

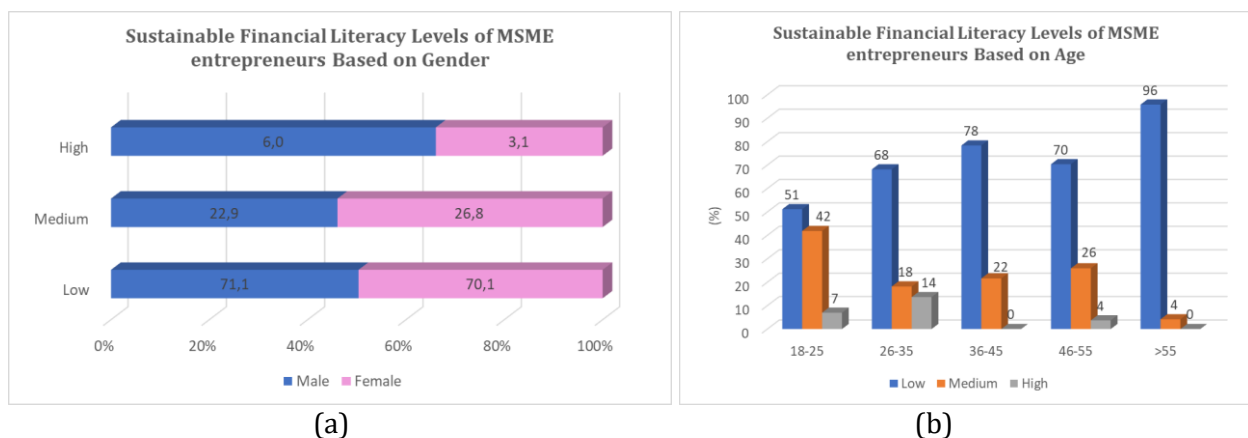
Sustainable Financial Literacy Level of MSME Entrepreneurs in Surakarta

The sustainable financial literacy levels among MSME entrepreneurs in Surakarta are generally still low (71%) (Figure 3), with a score range of <60. Of the five indicators for assessing sustainable financial literacy, MSME entrepreneurs have the highest understanding of the definition of impact (75%), followed by understanding of the definition of ESG (57%) and understanding of label awareness (34%). The understanding of ESG examples and their impact among MSME entrepreneurs in Surakarta is relatively low, with only 15% and 11% of respondents providing the correct answers.



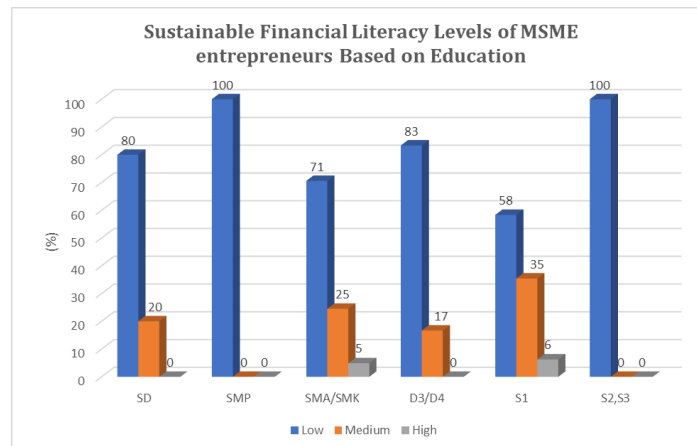
Figure 3. MSMEs Entrepreneurs' Sustainable Financial Literacy Levels

The sustainable financial literacy levels among MSME entrepreneurs, both male and female, are in the low category, with a percentage of 71.1% for men and 70.1% for women (Figure 4a). Only 6.0% of men and 3.1% of women fall into the high category of sustainable financial literacy, indicating that gender does not significantly affect the sustainable financial literacy levels. The level of sustainable financial literacy among MSME entrepreneurs in Surakarta, based on age (Figure 4b), indicates that all age groups remain predominantly in the low category. The 18-25 age group has a higher level of sustainable financial literacy, at 7%, compared to the low (51%) and medium (42%) categories, indicating better performance than other age groups. The results differ for MSME entrepreneurs aged >55 years, with a lower level of sustainable financial literacy, reaching 96%. The younger the MSME entrepreneur, the higher their levels of financial literacy, indicating a negative relationship between age and the levels of sustainable financial literacy. Judging from educational attainment (Figure 4c), the sustainable financial literacy levels of MSME entrepreneurs from all academic backgrounds are still relatively low. The low of sustainable financial literacy levels is mainly found among junior high school and master's/doctoral degree graduates. In contrast, the moderate and high sustainable financial literacy levels are mostly found among high school/vocational school and bachelor's degree graduates. These results indicate that formal education is indirectly proportional to the sustainable financial literacy levels.



(a)

(b)



(c)

Figure 4. Sustainable Financial Literacy Levels of MSME Entrepreneurs Based on Gender, Age, and Education

Financial Literacy and Sustainable Financial Literacy Levels among Surakarta's MSMEs

The financial literacy levels of MSME entrepreneurs in Surakarta are still low, at 55%, and their sustainable financial literacy levels are even lower, at 71%. In the moderate category, the percentages are almost the same, at around 22-25%. In the high category, the financial literacy level (22.8%) is higher than the sustainable financial literacy level (4%). These results illustrate a difference in financial literacy levels among MSME entrepreneurs in Surakarta.

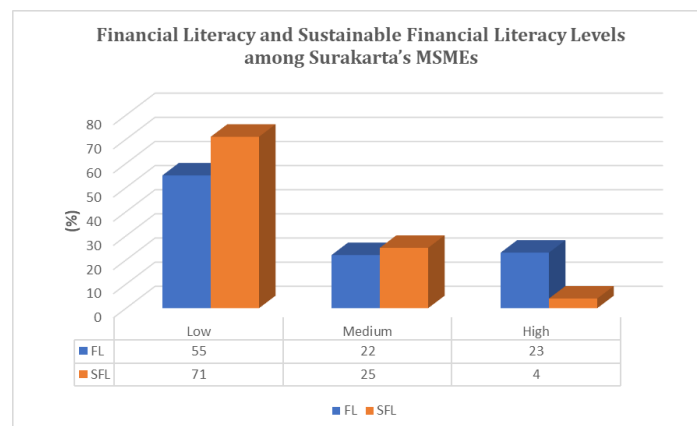


Figure 5. Financial Literacy and Sustainable Financial Literacy Levels of MSME Entrepreneurs in Surakarta

B. Discussion

The study's findings show that MSME entrepreneurs in Surakarta still mostly have low levels of financial literacy. Compared to male MSME entrepreneurs, female MSME entrepreneurs have a higher degree of financial literacy. There is a negative relationship between the age of MSME entrepreneurs and their financial literacy level; the older the MSME entrepreneur, the lower their financial literacy level. Furthermore, there is a positive relationship between the educational attainment of MSME entrepreneurs and their level of financial literacy. The higher the educational attainment, the higher the level of financial literacy.

The majority of MSME entrepreneurs are not familiar with or comprehend debt-based investment instruments, like bonds, as an alternate source of funding or business investment, as evidenced by the low level of understanding of bonds and inflation rates. This might be the result of MSME entrepreneurs in Surakarta not knowing enough about the capital market and financial instrument investment. Furthermore, the low level of inflation knowledge suggests that MSME entrepreneurs are not entirely aware of how inflation affects their business operations and product prices. The low level of financial

literacy among MSME entrepreneurs in Surakarta is in line with research by Afiah & Eny (2021), which shows that financial literacy among MSME entrepreneurs in Makassar is still low.

Similar findings were also found by Prihatin & Maruf (2019) on silver craft MSME entrepreneurs in Kotagede, Yogyakarta, and another study by Afifah et al. (2021), which revealed that MSME entrepreneurs in Mataram City have a moderate level of financial literacy. These results contradict the study by Sari & Wulandari (2024), which also found that MSME entrepreneurs in Teras Malioboro have a high level of financial literacy, and the study by Suryani et al. (2017), which found that the level of financial literacy of MSME entrepreneurs in Pekanbaru is relatively high, influenced by gender and differences in education level.

Furthermore, the majority of MSME entrepreneurs already have a deep understanding of interest rates, risk diversification, and mortgages. MSME entrepreneurs in Surakarta have the best understanding of mortgages. This indicates that MSME entrepreneurs have a better understanding of financing products such as mortgages. One of the financial products most widely used by MSMEs, especially for the purchase of fixed assets, is mortgages. This high level of understanding is also a result of intensive product promotion by financial institutions and easy access to information. This high level of understanding can be attributed to the ease of access to information and the extensive promotional efforts carried out by financial institutions. Furthermore, the second-highest level of financial literacy is related to risk diversification. These results indicate that MSME entrepreneurs are increasingly recognising the importance of risk management strategies, such as diversifying their product offerings. This aspect is important for maintaining long-term business sustainability. The third aspect, understanding of high interest rates, indicates that MSME entrepreneurs can make more careful financial decisions in determining loan costs and MSME financial planning.

The level of sustainable financial literacy among MSME entrepreneurs in Surakarta is still relatively low. Based on gender, the level of sustainable financial literacy is low for both men and women. There is a negative correlation between the age of MSME entrepreneurs and their level of sustainable financial literacy; the older the MSME entrepreneurs are, the lower their level of financial literacy. Then, based on education in general, there is a positive correlation between the educational attainment of MSME entrepreneurs and their level of sustainable financial literacy; the higher the education, the higher the level of financial literacy.

The low level of sustainable finance literacy among most MSME entrepreneurs in Surakarta stems from their lack of understanding of labels, certificates, or evidence indicating sustainable financial products, whether from government or non-government sources. MSME players also do not yet understand the criteria for company shares that can be considered sustainable financial products. In addition, MSME players also lack knowledge about investing in sustainable funds that include environmentally friendly companies that can reduce pollution. However, a small number of MSME players already grasp the basic concepts of ESG and distinguish between sustainable investment and impact investment.

A key component in developing a deeper understanding of ESG is increasing awareness of the impact of business operations, which can be achieved by understanding the fundamental concepts of ESG and the impact of wise sustainable investment. Lack of training on sustainability issues, unequal financial access and inclusion, and the fact that most MSME entrepreneurs prioritize short-term operations over long-term investments are some of the reasons for the low level of sustainable financial literacy among MSME entrepreneurs in Surakarta (Lie, 2023; Putri et al., 2023). This study supports the study by Filippini et al. (2024), which found that Swiss households generally have high levels of financial literacy by global standards, but low levels of sustainability literacy.

CONCLUSIONS AND SUGGESTIONS

A. Conclusion

MSME entrepreneurs in Surakarta still have low levels of sustainable financial literacy. Gender-wise, men have lower levels of financial literacy than women. Conversely, both men and women have equally low levels of sustainable financial literacy. Based on age, the level of financial literacy and sustainable financial literacy is negatively correlated with the age of MSME entrepreneurs. Then, based on

educational attainment, it is positively correlated with the level of financial literacy and sustainable financial literacy.

B. Suggestion

The low level of financial literacy among MSME entrepreneurs in Surakarta should be a concern for various parties, including MSME entrepreneurs, the government, and universities that partner with MSMEs. MSME entrepreneurs, especially in Surakarta, should continue to improve their financial literacy, both basic and sustainable, through training, seminars, and assistance from professionals in the field. The Surakarta city government can provide integrated training programs that focus on financial literacy and sustainable financial literacy, and can encourage collaboration between the government, universities, and the private sector (banking) for the sustainable empowerment of MSMEs. Higher education institutions can organize training with materials focused on financial management, digital bookkeeping, and green investment involving lecturers, students, and alums to provide direct education to MSMEs under their guidance. Higher education institutions can also optimize the role of campus business incubators by collaborating with local MSMEs, providing direct assistance to students and lecturers, and thereby improving the sustainability of MSMEs.

This study has limitations, including its focus on MSMEs in Surakarta, which restricts the generalizability of the results. Each region has unique population characteristics, particularly among MSME entrepreneurs, and the population could be expanded for further analysis. This study also focuses on financial literacy and sustainable financial literacy, enabling future researchers to incorporate additional variables, such as green innovation, green investment, or other relevant factors.

REFERENCES

- Afiah, N., & Eny, N. (2021). Analisis Tingkat Literasi Keuangan dan Perpajakan Pengelola UMKM di Kota Makassar. *Seminar Nasional Hasil Penelitian 2021*, 1669–1680. ,
- Afifah, A. L., Lestari B. A. H, & Jumaidi, S. T. (2021). Analisis tingkat literasi keuangan dan pengelolaan keuangan UMKM pada UMKM di kota Mataram. *Jurnal Risma*, 1(4), 1–12.
- Alt, E., & Spitzack, H. (2016). Improving environmental performance through unit-level organizational citizenship behaviors for the environment: A capability perspective. *Journal of Environmental Management*, 182, 48–58. <https://doi.org/10.1016/j.jenvman.2016.07.034>
- Amaliyah, F., & Hetika. (2023). Analisis tingkat literasi keuangan terhadap pengelolaan keuangan UMKM di kota tegal. *Jurnal Informasi, Perpajakan, Akuntansi, dan Keuangan Publik*, 18(2), 179–198. <https://doi.org/10.25105/jipak.v18i2.14480>
- Anshika, Singla, A., & Mallik, G. (2021). Determinants of financial literacy: Empirical evidence from micro and small enterprises in India. *Asia Pacific Management Review*, 26(4), 248–255. <https://doi.org/10.1016/j.apmr.2021.03.001>
- Badan Pusat Statistik Provinsi Jawa Tengah. (2024). Profil industri mikro dan kecil provinsi jawa tengah 2023. Badan Pusat Statistik: Semarang.
- Chen, H., & Volpe, R. P. (1998). *An Analysis of Personal Financial Literacy Among College Students*. 7(2), 107–128.
- Direktorat Statistik Industri. (2024). Profil industri mikro dan kecil. Badan Pusat Statistik: Jakarta.
- Filippini, M., Leippold, M., & Wekhof, T. (2024a). Sustainable finance literacy and the determinants of sustainable investing. *Journal of Banking and Finance*, 163. <https://doi.org/10.1016/j.jbankfin.2024.107167>
- Fitriana, A., Indriayu, M., & Harini. (2021). Pengaruh Literasi Keuangan Dan Kompetensi Sumber Daya Manusia Terhadap Kinerja UMKM Kuliner Di Kota Surakarta. *B ISE: Jurnal Pendidikan Bisnis Dan Ekonomi*, 7(7), 1–9.
- Hair, J. F., Sarstedt, M., Hopkins, L., & Kuppelwieser, V. G. (2014). Partial least squares structural equation modeling (PLS-SEM): An emerging tool in business research. In *European Business Review* (Vol. 26, Issue 2, pp. 106–121). Emerald Group Publishing Ltd. <https://doi.org/10.1108/EBR-10-2013-0128>

- Lanciano, E., Previati, D., Ricci, O., & Santilli, G. (2024). Financial literacy and sustainable finance decisions among Italian households. *Journal of Economics and Business*. <https://doi.org/10.1016/j.jeconbus.2024.106220>
- Lie, B. (2023). Peningkatan literasi keuangan pada UMKM di wisata kuliner kebon ayu melalui pelatihan dan pendampingan pembukuan sederhana. *Jurnal Wicara Desa*, 1(4), 556–564. <https://doi.org/10.29303/wicara.v1i4.3368>
- Liu, B., Wang, J., Chan, K. C., & Fung, A. (2021). The impact of entrepreneurs's financial literacy on innovation within small and medium-sized enterprises. *International Small Business Journal: Researching Entrepreneurship*, 39(3), 228–246. <https://doi.org/10.1177/0266242620959073>
- Lusardi, A., & Mitchell, O. S. (2014a). The economic importance of financial literacy: Theory and evidence. *Journal of Economic Literature*, 52(1), 5–44. <https://doi.org/10.1257/jel.52.1.5>
- Molina-García, A., Galache-Laza, M. T., González-García, V., & Diéguez-Soto, J. (2025). Financial literacy and environmental sustainability in SMEs: process innovation as an association mechanism. *Eurasian Business Review*. <https://doi.org/10.1007/s40821-025-00289-8>
- OECD. (2020). *Meeting of the Council at Ministerial Level, 28-29 October 2020 Recommendation of the council on financial literacy (Adopted by the Council at Ministerial Level on 29 October 2020) JT03467701 OFDE*.
- Prihatin, J., & Maruf, A. (2019). Analisis tingkat literasi keuangan pada pelaku usaha mikro kecil dan menengah kerajinan perak di kotagede yogyakarta. *Journal of Economics Research and Social Sciences*, 3(1), 1–10. <https://doi.org/10.18196/jerss.030101>
- Putri, G. A., Santoso, H. A., & Purwanto. (2023). Kontribusi Percepatan Inklusi Dan Literasi Keuangan Bagi Kinerja Umkm Kuliner Di Kota Surakarta. *Jurnal Riset Akuntansi Politala*, 6(1), 10–17.
- Sari, E. M., & Wulandari, I. (2024). Analisis tingkat literasi keuangan dan literasi teknologi informasi pada UMKM Teras Malioboro dua tahun 2024. *JIMEA: Jurnal Ilmiah MEA (Manajemen, Ekonomi, Dan Akuntansi)*, 8(3), 2931–2939.
- Suryani, S., Azmansyah, & Ramadhan, S. (2017). Analisis literasi keuangan pelaku usaha mikro di kecamatan payung sekaki kota pekanbaru. *Jurnal Ekonomi KIAT*, 28(2), 17–40.
- Yanti, W. I. P. (2019). Pengaruh inklusi keuangan dan literasi keuangan terhadap kinerja umkm di kecamatan moyo utara. *JURNAL MANAJEMEN DAN BISNIS*, 2(1), 1–10.
- Zioło, M., Bak, I., Cheba, K., Spoz, A., & Niedzielski, P. (2021). Sustainable financial systems toward sustainability in finance. Institutional and managerial approach. *Procedia Computer Science*, 192, 4237–4248. <https://doi.org/10.1016/j.procs.2021.09.200>