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Article

The effect of financial literacy on Indonesian women micro entrepreneurs through financial intermediation

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Abstract: Financial literacy and financial intermediation are vital tools for all businesses, particularly women micro-entrepreneurs. Even with modest means, they have been shown to considerably contribute to economic independence at the family, national, and international levels. Since Indonesian women microentrepreneurs still have trouble getting bank loans (being unbanked), the majority of them join cooperatives. Cooperatives are without doubt the financial intermediation institutions of choice for micro-communities; nonetheless, research on the subject is still scarce, particularly in developing nations. In order to bridge this gap, this study looks at the role of cooperatives as financial intermediation organizations. Examining the impact of financial literacy through cooperative financial intermediation on the financial performance of Indonesian women microentrepreneurs is the main goal of the study. The cross-sectional data were identified using purposive approaches and processed with the use of Smart PLS as part of an explanatory research approach. The direct influence test results demonstrate that enhancing financial performance and financial intermediation are directly impacted by financial literacy. Additionally, financial intermediation (cooperatives) was successful in influencing the impact of financial literacy on the financial performance of micro-entrepreneurs in Indonesia, according to the findings of the mediation effect test.

Keywords: financial intermediation; financial literacy; financial performance; women micro-entrepreneurs

1. Introduction

Without a doubt, microbusinesses have the ability to be a tool for economic growth (Craig et al., 2007) and contribute to the resurgence of the economy's regional and national reach (Escobar and Grubbauer, 2021). In Indonesia, the micro business sector accounts for 98% of all firms (Ministry of Cooperatives and MSMEs of the Republic of Indonesia, 2019). The number of micro-businesses is not commensurate with superior financial performance. The problem is influenced by several factors and conditions. Most of the micro business sector in Indonesia is informal and has limited resources. In fact, they must improve their performance, especially due to limited resources. Although financial performance is very important in measuring the success and development of micro businesses (Tumba et al., 2022), they have not experienced extraordinary performance developments.

Most micro-entrepreneurs are informal sector workers, the majority of whom are women (Csapi and Balogh, 2020), including Indonesia (BPS, 2022). Development is impacted by the financial performance of female microentrepreneurs. But there are still a lot of situations where gender discrimination exists (Swamy, 2014). Even though the female micro business actors have used all their abilities to the maximum (Pandey and Gupta, 2018), their financial performance has more severe problems. Moreover, during the pandemic, UN Women (2020) stated that the percentage of women who experienced a decrease in income was 82 percent higher than men.

According to the resource-based view (RBV) idea, a company's resources have a direct impact on how well it performs. According to the OECD (2018), financial literacy is low in emerging nations. With a financial literacy rate of only 32%—much lower than the average industrialized nation of 52%—and the fact that women are the least financially literate demographic, include Indonesia (Klapper and Lusardi, 2020; Lusardi and Mitchell, 2008). Study Tumba et al. (2022) have brought up the founded claim that a lack of financial literacy causes a number of intentional problems with financial performance. Low financial literacy leads to many disorders, such as excess debt or choosing the wrong high-cost financial services (Djou and Lukiastuti, 2021). Financial literacy allows people to evaluate the many competitive goods available and make wise financial decisions (Klapper and Lusardi, 2020; Lusardi et al., 2011). The Indonesian government realizes the importance of financial literacy for all levels society, especially women. This is evident from the increase in women's financial literacy which jumped sharply to 50.33 percent, compared to 49.05 percent for men(OJK, 2022)Although Indonesia's women's financial literacy index shows an improvement, its effect on women's performance is still not significantly visible. Other supporting factors are needed, such as quality financial intermediation institutions that provide easy and affordable financial services for women micro business actors. (Otoritas Jasa Keuangan, 2022).

Financial intermediation plays a crucial role in supplying women micro-entrepreneurs with high-quality financial products and services, in addition to financial literacy. McKillop et al. (2020) A significant part of the financial systems of many nations are financial cooperatives, including Indonesia. The International Cooperative Alliance (ICA) mentioned that more than 12% of the world's people are members of the financial intermediation of cooperatives, and cooperatives have absorbed 10% of the world's population (ICA, 2024). Cooperatives are also considered the most suitable to be applied to weak communities, such as women micro-entrepreneurs with limited financial literacy skills (Bacon, 2010; Iqbal and Sami, 2017; Okello Candiya Bongomin et al., 2018).

Research has been done on the relationship between financial performance and literacy since it has become a hot topic of discussion globally, but with varying degrees of success. Financial literacy has a positive effect on business performance (Abdullah et al., 2019; Malinda et al., 2018; Sohilauw et al., 2020). Nevertheless, several studies also show that financial literacy has little bearing on the expansion of a company's performance (Eresia-Eke and Raath, 2013). Tumba et al. (2022) demonstrated a substantial correlation between financial knowledge and company performance for female entrepreneurs. Additionally, a number of studies carried out by Atkinson and Messy (2012); Lusardi and Mitchell (2008); and OECD (2016) have proven that female has lower financial literacy than men. Al-Shami et al.(2019) examines the business accomplishments of women who are involved in microcredit and financial institutions. In addition, Bongomin et al. (2020a) examine financial intermediaries by encouraging financial literacy toward financial inclusion. This study does not discuss the output or performance results they achieve.

Furthermore, little research has been done on the function of cooperatives as financial intermediation organizations, particularly in developing nations where the bulk of the population lacks access to banking (unbanked). Most existing research discusses financial intermediaries from the banking side (Berger and Mester, 2003; Evans, 2007; Houben, 2002; Mabula and Ping, 2018; Rahman et al., 2021; Ratnawati, 2020b; Rousseau, 1998; Yen, 2012), but rarely on microfinance institutions such as cooperative. Although there are several studies that discuss cooperatives as financial institutions (Barros et al., 2020; Goddard et al., 2008; Kuc & Teplý, 2018; Martínez and De Mora, 2017; Vaziri, 2006; Ziv, 2010), most of them are from developed countries, and no one has linked the relationship as a mediation of the relationship between financial literacy and financial performance. This strengthens the opinion of Anyebe et al. (2021), who state that there is still little survey research on financial intermediation in developing countries. This research gap motivated the authors to conduct research on the role of cooperative financial intermediaries in boosting intervening financial literacy towards the financial performance of women micro entrepreneurs.

2. Research hypothesis and conceptual framework

2.1. Literature review

2.1.1. Resource based view

The company's resource-based view (RBV) is a conceptual framework that explains how strategic resources and assets relate to one another and affect business success (Orser et al., 2021). Capabilities could not be separated from resources. Therefore, (Wernerfelt, 1986) argues that resources and capabilities are an inseparable bond. This ultimately explains that the RBV considers the company to be a bond and shows that these attributes have a significant influence on the company's competitive advantage and will have an impact on company performance (Barney, 1991). According to RBV theory, resources are divided into two: tangible and intangible resources. Intangible resources, such as human resources. In this case, it is like financial literacy, namely how business actors have good financial abilities such as financial literacy. Research (Arshad et al., 2024) delve into the capabilities necessary for success among female micro-entrepreneurs in Asia. Their research, focusing on coaching and training interventions, highlights the importance of developing specific skills critical for financial management and effective business operations. This aligns with the concept of resource based view (RBV) discussed earlier, where financial literacy and access to financial intermediation acts as crucial resources for micro-entrepreneurs. Next, (Rao et al., 2023) provide valuable insights by comparing the performance of women micro-entrepreneurs in the UAE and India. They identify various factors influencing success, which can be explored within the Indonesian context. This comparative study can shed light on potential challenges and opportunities faced by women micro-entrepreneurs in Indonesia, particularly in the informal sector. Research (Surahman et al., 2023) explore the effect of digital transformation and innovation on SME performance during the COVID-19 pandemic. This research, while not specifically focused on women micro-entrepreneurs, offers valuable insights in the current digital landscape. Building on this concept, (Riadi et al., 2022) examine the benefits of e-commerce for small businesses in Indonesia, both before and during the pandemic."

Financial intermediation is also part of network resources (intangible). The stronger the network and the financial access received, the easier the opportunity to obtain company capital, which will directly increase the company's own resources. The greater the number and quality of resources owned by female micro-entrepreneurs, the greater the performance. Furthermore, financial literacy acts as an intangible resource, alongside network resources like financial intermediation. The stronger the network and the financial access received, the easier it is for micro-entrepreneurs to meet the criteria for obtaining company capital as outlined by Job Creation Act Number 6 of 2023. This Act defines a micro-entrepreneur as a business entity with a maximum annual turnover of IDR 500 million (around USD 35,000). Financial literacy and access to financial intermediation can help women micro-entrepreneurs manage their finances effectively to stay within this limit and qualify for crucial resources.

2.1.2. Financial literacy

Understanding things in relation to financial information is known as financial literacy, and it is actually necessary to promote financial proficiency, which paves the way for competitive values (Lusardi and Mitchell, 2007). A key component of both general financial stability and personal financial empowerment is financial knowledge (Fessler et al., 2020). Even research (Tumba et al., 2022) demonstrates the significant impact that financial literacy has on raising the success of female-owned microbusinesses. It makes sense that the concept of financial literacy is fully acknowledged as essential support for managing individuals who manage businesses; this includes planning the appropriation of funds, budgeting, and gaining a basic understanding of financial literacy through attaining business success (Djou and Lukiastuti, 2021).

2.1.3. Financial intermediation

It is a known truth that the broad idea surrounding financial intermediation is essentially dependent on the full consideration of governing economic expenses, which result from a lack of knowledge in carrying out directed-efforts trade (Bongomin et al., 2020a). The concept of intermediation is a condition in which a financial institution acts as an intermediary (intermediation) for parties with excess funds (surplus) to then channel them to parties who lack funds (deficit). Financial institutions are also referred to as trusted institutions because they are places where funds are operational from those who have excess to those who have deficiencies. Financial institutions are responsible for maintaining public trust by maintaining an effective and efficient level of liquidity to achieve good profitability.

2.1.4. Financial performance of women micro-entrepreneurs

One of the primary problems facing SMEs is performance, specifically the capacity to institutionalize changes in the way that they manage market opportunities, adjust to their surroundings, and maintain certainty. The management style and offerings of micro-entrepreneurs might be viewed as indicators of their success from an entrepreneurial standpoint (Syahdan et al., 2020). It basically means that, when measuring current performance, the organization's core values and culture, as well as the business achievement it has achieved, will be carefully considered and appropriately addressed with reasonable expenses, time, and quality (Lukviarman, 2008). Performance is defined as the process of measuring the efficacy and efficiency of a business's operations (Syahdan et al., 2020). The achievement of company success can be demonstrated by a number of the following requirements: overall sales advancement, return or seized earnings on investment, and relative or proportionate earnings obtained (Tumba et al., 2022). It is well recognized that there might be variations in business performance from one another. However, a straightforward profit calculation offers a more reliable measurement than planning to document particular aspects of revenue and expense flows (de Mel et al., 2009).

2.1.5. Hypothesis development

Financial literacy affects financial performance

It is an indisputable fact that in order for micro-entrepreneurs to effectively manage and sustain their businesses, they must truly understand the broad definition of financial literacy (S. Pandey, 2020). Research result by Abdullah et al. (2019) asserts that gaining a sufficient understanding of finance will help enhance the financial skills required to meet financial objectives. Following research, Tumba (2022) demonstrated that possessing extensive financial literacy meets essential requirements to support women's success in running and growing their enterprises. Furthermore, Dahmen and Rodríguez (2014) Prove adequate financial knowledge in managing finances very closely, supporting overall business success. In addition, according to the RBV theory, it also explains that the higher the ability of women micro entrepreneurs to understand and manage their business finances, the more they can make the right financial decisions in developing their business so that it will have a positive impact on their financial performance.

H1: Financial literacy has a significant effect on financial performance.

Financial literacy and financial intermediation

Good financial decisions will be encouraged by financial literacy, which will, in turn, motivate financial intermediaries to provide better and more creative financial products (Klapper and Lusardi, 2020). Good Financial literacy will encourage financial service users to be more selective in choosing services so that financial intermediation must be competitive in providing superior services and products by offering advantages in the eyes of consumers. Lower financial literacy is often associated with triggering larger transaction payments and expensive loans at financial intermediation institutions (Sisharini et al., 2019). A person's financial literacy also influences his choice to perform financial intermediation services; financial literacy that is successful will lead to quality financial intermediation options. This is in line with the concept of RBV theory which reveals that the higher the financial literacy ability of women micro entrepreneurs, the quality of financial intermediation they receive, because they already have sufficient resources to make choices from a wide selection of increasingly competitive financial products.

H2: Financial literacy has a significant effect on financial intermediation.

Financial intermediation and financial performance

Microfinance institutions need financial intermediation because it allows cash from depositors to be directed directly into micro business players in need of funding (Okello Candiya Bongomin et al., 2020). If there is a rise in financial intermediation, then every effort to make the formal financial system more accessible, available, and beneficial to all economic actors will boost the performance of SMEs (Ratnawati, 2020). Cooperative endeavors aimed at enhancing the caliber of financial intermediary services will establish a high-caliber financial ecosystem at a reasonable expense, hence augmenting financial performance achievement for individuals transitioning into micro-enterprises. This confirms research conducted by Ratnawati (2020) that achieving sufficient financial intermediation offers a more hopeful outcome for designing or producing improved MSME performance. In addition, research (Lal, 2019) proves that cooperatives as financial intermediaries can improve economic welfare. In fact (Msuya et al., 2023) conducted a study by comparing the welfare of cooperative and non-cooperative members, resulting in cooperative members who received financing from cooperatives were more prosperous than non-cooperative members. The more quality financial services received by women micro entrepreneurs, such as excellent service at competitive prices, guaranteed service security, of course this is a good thing they have to increase company resources and improve their financial performance. It is also in line with the RBV theory, so a third hypothesis is formulated:

H3: Financial intermediation has a significant effect on financial performance.

The mediation financial intermediation between financial literacy and financial performance

Fighting the obstacles to financial services access is just as important as promoting financial literacy; by encouraging financial institutions to behave in a more competitive manner, SMEs and low-income people will have greater access to financial services at reduced intermediation costs (Mabula and Ping, 2018). It becomes a given that educated individuals are more likely to hold onto their financial success in order to promote contentment (OJK, 2021). It makes sense because being able to understand financial concepts facilitates making wise financial decisions (Klapper and Lusardi, 2020). It goes without saying that financial literacy is necessary to support and progress any financial preferences, such as creating investment plans, saving money for the future, and doing other associated financial-specific actions (Klapper and Lusardi, 2020). Especially in light of the complexity and volatility of the economy (OJK, 2021). Microbusiness owners who possess financial literacy are better able to identify different financial risks, become proficient, receive encouragement, and project confidence, all of which will make any financial decision much easier. (Bongomin et al., 2020). These days, individuals need to understand that they should consider financial literacy accomplishments in order to add value, mitigate consumer risk, and increase it because financial instruments are becoming more and more complicated and unpredictable (Klapper and Lusardi, 2020). Financial literacy alone is not enough to improve performance, the role of cooperative financial intermediation is needed as an additional resource so that micro entrepreneurs are able to create good performance and are able to compete. Cooperative financial intermediation can intervene through the quality of services offered to women micro-entrepreneurs. The concept of cooperatives is common welfare (ICA, 2024), so it will not exercise a financial monopoly that harms its members. In addition, every decision taken by the cooperative must also involve women micro entrepreneurs who are members, so that margin policies and service fees will not burden them. So, it can be hypothesized in the fourth hypothesis is:

H4: Financial literacy meets a significant effect on financial performance intervened by financial intermediation.

3. Research methods

3.1. Sample research

The research sample was taken based on the purposive sampling technique. Data was collected from November 2023 to February 2024. The target of this research is female micro business actors (borrowers) who meet several criteria, namely (1) microbusiness owner (maximum capital of IDR 1,000,000,000.00) (Undang-Undang Cipta Kerja, 2023), (2) have been running a sector informal business ((individual or household) for at least three years, (3) never had access to capital from banking because they have not been able to meet banking requirements (unbanked people) (4) access business capital from cooperative minimum one year. Determining the sample size uses the Hair formula because the population size is not yet known with certainty. According (Hair et al., 2019). the number of representative samples depends on the number of indicators multiplied by 5 to 10. The research sample consisted of 150 individuals since there are 15 indicators in all, which were multiplied by 10 in this study.

Because the respondents are female micro business actors at the lowest level of micro enterprises, in addition to limited capabilities, they also do not use mobile phones as the main communication tool. So, this study uses face-to-face questionnaire interviews. This is done so that they understand the research questions to be asked so that they can provide accurate answers without any misinformation. In addition, based on the sampling area, this study was only conducted on the island of Java (Banten province) by involving cooperative members in the region. Regionally, Indonesia has a large area, but 56.1% of the Indonesian population is on the island of Java (BPS, 2021).

3.2. Measurement

The research method used is explanatory, with questionnaires and cross-sectional data. The sample was determined using purposive techniques and processed using the help of Smart PLS. With confidence, multivariate analysis has been carried out in conjunction with the inner and outer model tests of the structural equation model partial least square (SEM PLS) model analysis of the data gathered. To conduct this study, the researchers created a structured questionnaire, integrated pre-existing scales, and validated methods used in earlier studies. Those existing research variables have been gauged by delivering a questionnaire with a scheme of Likert scale scoring of 1 to 5, where scale 1 responded as "completely disagree," scale 2 responded as "disagree," scale 3 responded as "undecided," scale 4 responded as "agree," and scale

5 responded as "strongly agree." Five variables are used to gauge financial literacy: knowledge of financial products, ability to compute earnings, cash forecasting, ability to compare interest rates and margins, and awareness of financial risks (Atkinson and Messy, 2012; OECD, 2016). Financial intermediation is measured through 5 indicators: member satisfaction, providing competitive financial products, service penetration, benefit financial service, and guaranteeing the security of financial service (Bongomin et al., 2020b; Ratnawati, 2020b). Financial performance is measured through 5 indicators (Robbins and Judge, 2015), namely funding security policies, availability of cash, timely payment, effectiveness of merchandise management, and ability to generate profits.

4. Results and discussion

4.1. Result

4.1.1. Respondent description

The distribution of questionnaires was carried out, and 150 questionnaires were collected. Based on the age of the research respondents, 31 people aged 20–30 years (20.6%), 53 people aged 31–40 years (34,6%), 56 people aged 40–50 years (37,3%), and those aged over 50 years amounted to 10 people (6.6%). Based on the type of business of the respondents, food stalls or culinary (61.3%), retail trade other than packaged food and beverages (17.3%), retail trade of food and beverages and packaged goods (15.3%), services (6.1%). Based on the number of employees, 53% of micro business actors are self-employed, 23% are assisted by family and relatives, have a maximum of 3 employees and the rest have employees between 4–15 employees. Based on the number of employees, 53% of micro business actors are self-employed, 23% are assisted by family and relatives, have a maximum of 3 employees and the rest have employees between 4–15 employees.

4.1.2. Outer models

Convergent validity is obtained when all indicators have loading factor values above 0.7, meaning that all indicators of measurement of a construct are highly correlated. The dependability of the instrument was evaluated using Cronbach's alpha and the real composite reliability value; the value must be more than 0.7 to satisfy the reliability standards. Additionally, testing the convergent validity of the current construct requires 0.5 of AVE**. Table 1** displays the findings of all tests conducted on construct validity and reliability, as well as financial performance, financial intermediation, and financial literacy.

Table 1. Construct validity and reliability test results (Source: primary data processed).

Variable	Indicator	Loading factor (>0.7)	Cronbach's alpha (>0.7)	Composite reliability (>0.7)	Average variance extracted (AVE) (>0.5)
Financial literacy	X1.1	0.762	0.854	0.896	0.632
	X1.2	0.839			
	X1.3	0.818			
	X1.4	0.774			
	X1.5	0.779			

Table 1. (*Continued*).

Variable	Indicator	Loading factor (>0.7)	Cronbach's alpha (>0.7)	Composite reliability (>0.7)	Average variance extracted (AVE) (>0.5)
Financial intermediation	Z1	0.911	0.932	0.948	0.787
	Z2	0.921			
	Z3	0.784			
	Z4	0.904			
	Z5	0.908			
Financial performance	Y1	0.878	0.918	0.939	0.754
	Y2	0.843			
	Y3	0.802			
	Y4	0.912			
	Y5	0.901			

The loading factor value of all indicator items is above 0.6, so all item statements meet the criteria of 0.6 (Hair et al., 2019). Then, Cronbach's alpha value exceeds 0.7, and the average variance extracted (AVE) value is more than 0.5, which means the variable is valid, so the variable used has good validity. Furthermore, all components have good reliability estimates because composite reliability coefficients exceed 0.7. Based on the aforementioned data, it can be concluded that every construct has validity and reliability values that satisfy the requirements. For future testing, the instrument utilized in this study is regarded as legitimate and trustworthy.

4.1.3. Goodness of fit model

Model fit aims to test the feasibility of a model and data to test the influence of variables. Henseler et al. (2014) introduce the SRMR as a goodness-of-fit measure for PLS-SEM that can be used to avoid model misspecification. If the SRMR is less than 0.10, a model is considered to fit. The root mean square residual (RMSR) is a measure of the mean absolute value of the covariance residuals and is standardized root means square residual (SRMR). It is based on converting the sample covariance matrix and the projected covariance matrix into correlation matrices. **Table 2** shows that the SRMR data obtained from this study has met the requirements of the fit model.

Table 2. Fit summary.

	Saturated model	Estimated model
SRMR	0.070	0.070
d_ULS	0.595	0.595
d_G	0.472	0.472
Chi-square	380.604	380.604
NFI	0.816	0.816

Table 2 The SRMR value of 0.070, as indicated by the results above, indicates that this model fits if the value is less than 0.100. Model fit attempts to evaluate a model's viability and data's ability to examine the impact of variables. According to Hair et al. (2019), the requirement is that the SRMR be less than 0.10. As the SRMR

value found was 0.076, as indicated by the results above, the model is fit if the value is less than 0.100. results above show that the SRMR value found was 0.062. Therefore, if the value is smaller than 0.100, this model fits. Model fit aims to test the feasibility of a model and data to test the influence of variables. The condition is that SRMR must be less than 0.10. The results above show that the SRMR value found was 0.076. Therefore, if the value is smaller than 0.100, the model is fit.

4.1.4. Inner model

The preceding table illustrates how the *R* square gaining value has achieved the scope measurement in connection to changes in the degree of variation in the independent variable with respect to the dependent variable. **Table 3** shows the *R* square value has a criterion: 0.75, which indicates a "strong" response; 0.5, which indicates a "moderate" response; and 0.25, which indicates a plainly "weak" response. Based on **Table 3**, this study purposefully demonstrates that the financial performance is 0.763, indicating high, and the growing value of adjusted *R* square with respect to the current financial intermediation variable has reached 0.527, indicating moderate.

Table 3. Table *R* square.

	***R* square**	***R* square adjusted**
Financial intermediation	0.531	0.527
Financial performance	0.766	0.763

4.1.5. Significance test

Path coefficients direct influence

The aftermath of processing the conducted direct effect test can consciously be said to be influential if the *P* values **Table 4**. The conducted study's aftereffects are less than 0.05. With an increasing value of P that has reached 0.00 (totally lower than 0.05), the direct influence test demonstrates that evidence related to financial literacy has a substantial effect on the attainment of financial performance. It is fully acknowledged that hypothesis 1 is led by the gaining situation. It is also evident that Hypothesis 2 is correct, as supported by the *P*-value of 0.000, which is still less than 0.05, and which indicates that financial intermediation is significantly impacted by financial literacy. It is possible to declare that hypothesis 3 is deliberately accepted because Financial Intermediation has a significant effect on financial performance and has a gaining value of significance that is definitely lower than 0.05.

Table 4. The aftermath of the conducted direct effect test.

Direct significances	**Org. sample (O)**	**Sample means (M)**	**Standard deviation (STDEV)**	***T* Stat. (|O| STDEV|)**	***P***	**Result**
Financial literacy → financial performance	0.562	0.566	0.068	8.220	0.000	Accepted
Financial literacy → financial intermediation	0.728	0.730	0.056	13.018	0.000	Accepted
Financial intermediation → financial performance	0.377	0.372	0.075	4.988	0.000	Accepted

Furthermore, **Figure 1** shows the image of the research model from the results of data processing using SmartPLS. Data shows the relationship between indicators and variables in this model research.

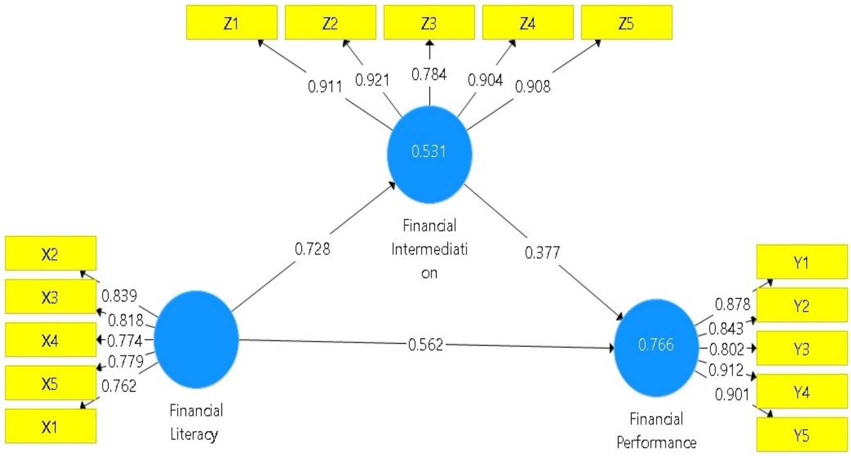

Figure 1. Result of testing Smart PLS.

Indirect influence path coefficients

Table 5 shows that indirect influence test resulted in *P* values of 0.000 (below 0.005) for the indirect effect of financial literacy on financial performance through financial intermediation. This means that an indirect effect has been identified that clearly indicates financial intermediation's ability to intervene in the relationship between financial literacy and financial performance (hypothesis 4 is accepted). A person's confidence in selecting the best financial goods, competitive pricing, and financial intermediation services to determine which ones will be profitable for them and which can enhance their business performance will increase with their level of financial literacy. This result is in line with research (Dahmen and Rodríguez, 2014; Quintiliani et al., 2023; Rahmawati et al., 2023) which proves that adequate financial literacy in managing finances is very important in supporting overall business success.

Table 5. Indirect influence test results.

	Org. sample (O)	**Sample means (M)**	**Standard deviation (STDEV)**	***T* statistics (|O/STDEV|)**	***P* values**	**Result**
Financial literacy → financial intermediation → financial performance	0.274	0.271	0.058	4.729	0.000	Accepted

4.1.6. Effect size

Essentially, a different test has been carried out to identify exogenous latent factors that most likely have the biggest impact on endogenous variables. As in line with (Hair et al., 2019), The entire effect size is measured as follows: 0.02 indicates a weak influence, 0.15 indicates a deliberately stated moderate effect, and 0.35 plainly indicates a large or substantial effect. **Table 6** shows the results of the F square calculation which can provide an overview of the effect size.

Table 6. Effect size.

	***F* square**	**Result**
Financial literacy → financial performance	0.635	Strong
Financial literacy → financial intermediation	1.131	Strong
Financial intermediation → financial performance	0.285	Moderate

Table 6 shows that the *F* square value is used to find out the goodness of the model and see how much influence exogenous variables have on endogenous variables. Financial literacy affects financial performance with a value of 0.635, which means the influence is strong, and financial literacy also affects financial intermediation by 1.131, which means the influence is also strong. Furthermore, financial intermediation affects financial performance with an *F* square value of 0.285, which means the effect is moderate.

5. Discussion

This research provides important evidence regarding the role of financial literacy and financial intermediation carried out by cooperatives on financial performance, especially for women micro-entrepreneurs in the informal sector and unbanked communities. All four of the presented theories were agreed upon. The first hypothesis, which merely states that financial literacy significantly affects the ultimate attainment of financial performance, is accepted. Higher financial literacy levels among micro-entrepreneurs will individually result in better financial performance since they will make wiser financial decisions and behave better financially (Stolper, 2017; Wiagustini et al., 2023). In order to manage financial arrangements and come up with strategies to deal with them, a business actor truly needs financial literacy in order to be able to comprehend financial products, compare interest rates (profit sharing), calculate profits, estimate incoming and outgoing money, and understand financial risks. Progress is made in terms of the financial performance itself under this explicit requirement.

Hypothesis 2 is also accepted that financial literacy will increase financial intermediation. In essence, financial literacy is a valuable asset for all parties involved in business. Their ability to choose profitable financial products will increase with their level of financial product knowledge, which will encourage financial intermediation and raise the standard of penetration and services while increasing their competitiveness. Financial literacy possessed by micro entrepreneurs will increase their chances of choosing and using financial intermediation. They will be interested in the financial intermediation that they consider best and beneficial according to the financial knowledge they have. Cooperatives as financial intermediation institutions will be encouraged to improve the quality and quantity of their services, driven by financial literacy owned by women micro-entrepreneurs. The opposite situation, low financial literacy can result in them not knowing the existence of quality official financial intermediation, so they fall into expensive unofficial financial institutions (loan sharks) (Lusardi, 2019).

The final direct relationship, namely hypothesis 3, is also accepted, namely that financial intermediation is proven to influence financial performance. Financial intermediaries play a crucial role in helping business players who require more money. A microfinance intermediary that takes the shape of a cooperative will help its member business actors succeed in financial performance if it has a certain penetration rate and degree of service quality. The results of this study corroborate the results of previous research that corroborate that financial intermediation can improve the performance of micro entrepreneurs (Alhassan et al., 2019; Bongomin et al., 2019; Ratnawati, 2020b). The impact of intermediation on the financial performance of micro companies is a complex subject that has been examined in numerous academic and policy-focused research. Non-bank financial institutions (NBFIs) are crucial in facilitating access to finance for micro businesses that struggle to obtain funding from traditional banks. This is due to issues like information imbalance, expensive transactions, and absence of collateral.

Furthermore, for the indirect hypothesis, hypothesis 4 has been accepted, meaning that financial intermediaries cooperative can intervene in the influence of financial literacy on financial performance. Financial literacy possessed by business actors will motivate financial intermediaries to increase penetration and improve service quality so that the financial products offered are more competitive and profitable for micro-business actors. In this way, women micro-entrepreneurs will be successful in improving their financial performance through the presence of financial intermediaries who can fully help intervene and increase the financial resources they must have. The study also corroborated the findings McKillop et al. (2020) Financial cooperatives are significant contributors to the financial systems of numerous countries and serve as secure repositories for deposits and are significant providers of credit for individuals and small- to medium-sized businesses. Financial cooperatives' continued popularity and durability are maintained by their not-for-profit orientation in many situations and their concentration on maximizing benefits to members.

The findings in hypotheses 1, 2, and 3 strengthen the RBV theory that micro entrepreneurs who have good financial literacy as one of the superior resources of the business actors themselves will also make their business performance good. Likewise, hypothesis 4 also confirms that broader access to quality financial intermediation cooperative will encourage female micro-entrepreneurs to improve their financial performance. They do not experience difficulties in managing their finances, such as accessing capital or investing in their business results. So, it can be concluded that it is essential to increase quality resources in every business, even on a micro-business scale, so that they can also be competitive. This evidence strengthens that financial literacy will encourage cooperatives as financial intermediaries to increase member satisfaction through better service financial products according to needs at competitive prices; of course, this will have an impact on the financial performance of women micro entrepreneurs. Furthermore, Hopefully, the managerial implications of this research can be used as a reference for cooperatives to grow the trust of female micro-entrepreneurs in financial intermediation institutions. A heart-to-heart approach can be taken, especially toward empowering females, instead of just providing financial services through cooperatives. Cooperatives need to provide cooperative education to their members. This can grow the value of cooperatives, as members of cooperatives are not only users of financial services but also owners and controllers of the cooperative in accordance with cooperative laws and regulations in Indonesia. They must be given confidence that cooperatives as financial intermediation institutions aim to improve the welfare of their members so that they not only receive financial services but are required to receive business assistance and training. Finally, if micro business actors join the cooperative, their financial literacy will also increase, which will also impact their business performance. This section is not mandatory but can be added to the manuscript if the discussion is unusually long or complex.

This research also recommends that policymakers focus on increasing financial literacy and encouraging cooperative-style financial intermediation improve the performance of female micro-entrepreneurs. Cooperatives have more flexible rules that can be mutually agreed upon by women micro business actors. Formal financial service providers (banks) have difficulty in developing financial services that match the characteristics of female micro business actors who tend to do business in the informal sector (individual or household businesses) with flexible business routines and uncertain income (Salyanty and Askar, 2022). Apart from that, the cooperative department and cooperative ministry can provide training facilitation in collaboration with cooperative financial intermediation institutions to carry out regular member training, one of which is increasing financial literacy as the main agenda. Cooperative education for members, predominantly female micro-entrepreneurs, will increase members' relationship involvement with the cooperative so that it will support their personal business performance and the quality of the cooperative itself.

6. Limitations and future research goals

This research has several limitations. The first limitation is that the object of this research is a group of micro-enterprise women who have very limited abilities, including not being digitally literate, so an extraordinary approach and guidance are needed in filling out the questionnaire. Even though we have conducted face-to-face interviews, this can also result in data bias. These two studies are only limited to specific objects of micro-enterprises in cooperatives but have not explored new things in terms of measurement. The three financial performance measurements are still simple because micro business actors have not recorded them properly, so we only use individual business performance assessments regarding the financial performance achievements they have had while owning this business.

Similar research in the future could produce deeper insights, for example, expanding the sample of women micro-entrepreneurs by distributing cluster data per province in Indonesia and even other developing countries. Apart from that, we can also develop new measurement indicators for cooperative pattern financial intermediation that are explicitly built by considering the value of cooperatives and the specifics of the model of the unbanked population of micro-enterprise women. Another research opportunity could also be to incorporate gender theory in developing new models to improve the financial performance of women micro-entrepreneurs as well. Finally, considering the importance of financial literacy, future research could involve the digital literacy skills of micro-entrepreneurs who are still weak as part of efforts to improve performance. This evidence strengthens that financial literacy will encourage cooperatives as financial intermediaries to increase member satisfaction through better service financial products according to needs at competitive prices. Of course, this will have an impact on the financial performance of women micro entrepreneurs. Furthermore, hopefully, the managerial implications of this research can be used as a reference for cooperatives to grow the trust of their women micro-entrepreneurs, particularly those in the informal sector.

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References

Abdullah, N., Fazli, S. M., & Arif, A. M. M. (2019). The Relationship between attitude towards money, financial literacy and debt management with young worker's financial well-being. Pertanika J Soc Sci Humanit, 27(1), 361–387.

Abrantes, B. F., & Hang, D. T. (2023). Essentials on Financial Literacy, Up-/Reskilling, and Firm Performance: Empirical Evidence from South Asian Public-Owned Companies (POCs). In: Studies on Entrepreneurship, Structural Change and Industrial Dynamics. Springer Nature Switzerland. pp. 65–85.

Alhassan, A., Li, L., Reddy, K., et al. (2019). The impact of formal financial inclusion on informal financial intermediation and cash preference: evidence from Africa. Applied Economics, 51(42), 4597–4614. https://doi.org/10.1080/00036846.2019.1593316

Al-Shami, S. S. A. A., Muhamad, M. R., Majid, I., et al. (2019). Women's entrepreneurs' micro and small business performance: insights from Malaysian microcredit. International Journal of Entrepreneurship and Small Business, 38(3), 312. https://doi.org/10.1504/ijesb.2019.103433

Anyebe, D. I., Zubairu, U. M., & Onuh, O. D. (2021). A Systematic Review of Financial Intermediaries Research. International Research Journal of Business Studies, 14(1), 69–84. https://doi.org/10.21632/irjbs.14.1.69-84

Arshad, D., Hodgkinson, I. R., Hughes, P., et al. (2023). Female consumer entrepreneurship in Asia: capabilities for micro-entrepreneurial success and the role of coaching and training. Journal of Entrepreneurship in Emerging Economies, 16(1), 188–208. https://doi.org/10.1108/jeee-01-2023-0030

Atkinson, A., & Messy, F. A. (2012). Measuring Financial Literacy: Results of the OECD. OECD Work Pap Financ Insur Priv Pensions, 44(2), 296–316.

Bacon, C. M. (2010). A Spot of Coffee in Crisis. Latin American Perspectives, 37(2), 50–71. https://doi.org/10.1177/0094582x09356958

Barney, J. (1991). Firm Resources and Sustained Competitive Advantage. Journal of Management, 17(1), 99–120. https://doi.org/10.1177/014920639101700108

Barros, M. G., Botelho da Costa Moraes, M., Salgado Junior, A. P., et al. (2020). Efficiency of credit unions in Brazil: an analysis of the evolution in financial intermediation and banking service. RAUSP Management Journal, 55(3), 289–308. https://doi.org/10.1108/rausp-06-2018-0029

Berger, A. N., & Mester, L. J. (2003). Explaining the dramatic changes in performance of US banks: Technological change, deregulation, and dynamic changes in competition. Journal of Financial Intermediation, 12(57-95).

Bongomin, G. O. C., Munene, J. C., & Yourougou, P. (2020). Examining the role of financial intermediaries in promoting financial literacy and financial inclusion among the poor in developing countries: Lessons from rural Uganda. Cogent Economics & Finance, 8(1), 1761274. https://doi.org/10.1080/23322039.2020.1761274

Bongomin, G. O. C., Munene, J. C., Ntayi, J. M., et al. (2018). Exploring the mediating role of social capital in the relationship between financial intermediation and financial inclusion in rural Uganda. International Journal of Social Economics, 45(5), 829–847. https://doi.org/10.1108/ijse-08-2017-0357

BPS. (2021). 2020 Population Census (Indonesian). Available online: https://sensus.bps.go.id/main (accessed on 2 June 2024).
BPS. (2022). Proportion of Informal Employment by Gender (Indonesian). Available online: https://www.bps.go.id/indicator/6/2155/1/proporsi-lapangan-kerja-informal-menurut-jenis-kelamin.html (accessed on 5 March 2024).
Csapi, V., & Balogh, V. (2020). A financial performance-based assessment of SMEs' competitiveness—An analysis of Hungarian and US small businesses. Probl Perspect Manag, 18(3), 452–464.
Dahmen, P., & Rodríguez, E. (2014). Financial Literacy and the Success of Small Businesses: An Observation from a Small Business Development Center. Numeracy, 7(1). https://doi.org/10.5038/1936-4660.7.1.3
de Mel, S., McKenzie, D., & Woodruff, C. (2009). Are Women More Credit Constrained? Experimental Evidence on Gender and Microenterprise Returns. American Economic Journal: Applied Economics, 1(3), 1–32. https://doi.org/10.1257/app.1.3.1
Djou, L. G., & Lukiastuti, F. (2021). The Moderating Influence of Financial Literacy on the Relationship of Financial Attitudes, Financial Self-Efficacy, and Credit Decision-Making Intensity. J Akunt dan Keuang., 23(2), 69–82.
Eresia-Eke, C. E., & Raath, C. (2013). SMME Owners' financial literacy and business growth. Mediterr J Soc Sci. 4(13), 397–406. https://doi.org/10.5901/mjss.2013.v4n13p397
Escobar, L., & Grubbauer, M. (2020). Housing microfinance, saving and credit cooperatives, and community development in low-income settings in Mexico. Community Development Journal, 56(1), 141–160. https://doi.org/10.1093/cdj/bsaa051
Evans, J. (2007). Financial intermediation in a African setting: Performance differences between domestic and multinational banks in Ghana. J African Bus, 8(2), 91–104.
Fessler, P., Silgoner, M., & Weber, R. (2019). Financial knowledge, attitude and behavior: evidence from the Austrian Survey of Financial Literacy. Empirica, 47(4), 929–947. https://doi.org/10.1007/s10663-019-09465-2
Goddard, J., McKillop, D., & Wilson, J. O. S. (2008). What drives the performance of cooperative financial institutions? Evidence for US credit unions. Applied Financial Economics, 18(11), 879–893. https://doi.org/10.1080/09603100701262818
Hair, J. F., Anderson, R. E., Babin, B. J., & Black, W. C. (2019). Multivariate Data Analysis, Multivariate Data Analysis. Cengage Learning. pp. 611–628.
Hair, J. F., Risher, J. J., Sarstedt, M., et al. (2019). When to use and how to report the results of PLS-SEM. European Business Review, 31(1), 2–24. https://doi.org/10.1108/ebr-11-2018-0203
Henseler, J., Dijkstra, T. K., Sarstedt, M., et al. (2014). Common Beliefs and Reality About PLS. Organizational Research Methods, 17(2), 182–209. https://doi.org/10.1177/1094428114526928
Houben, A., & Kakes, J. (2002). ICT Innovation and Economic Performance: The Role of Financial Intermediation. Kyklos, 55(4), 543–562. Portico. https://doi.org/10.1111/1467-6435.00201
ICA. (2024). International cooperative alliance. Available online: https://ica.coop/en/cooperatives/facts-and-figures (accessed on 8 February 2023).
Iqbal, B. A., & Samim S. (2017). Role of banks in financial inclusion in India (Spanish). Contaduria y Adm., 62(2), 644–656. http://doi.org/10.1016/j.cya.2017.01.007
Keuangan, O. J. (2022). National strategy on Indonesian financial literacy (SNLKI) 2021–2025. Available online: https://ojk.go.id/en/berita-dan-kegiatan/publikasi/Pages/National-Strategy-on-Indonesian-Financial-Literacy-(SNLKI)-2021---2025.aspx (accessed on 5 March 2024).
Klapper, L., & Lusardi, A. (2020). Financial literacy and financial resilience: Evidence from around the world. Financial Management, 49(3), 589–614. https://doi.org/10.1111/fima.12283
Kuc, M., & Teplý, P. (2018). A Financial Performance Comparison of Czech Credit Unions and European Cooperative Banks. Prague Economic Papers, 27(6), 723–742. https://doi.org/10.18267/j.pep.682
Lal, T. (2019). Measuring impact of financial inclusion on rural development through cooperatives. International Journal of Social Economics, 46(3), 352–376. https://doi.org/10.1108/ijse-02-2018-0057
Lukviarman, N. (2008). Performance Measurement: A Stakeholder Approach. Sinergi, 10(2), 179–198. https://doi.org/10.20885/sinergi.vol10.iss2.art8
Lusardi, A. (2019). Financial literacy and the need for financial education: evidence and implications. Swiss Journal of Economics and Statistics, 155(1). https://doi.org/10.1186/s41937-019-0027-5
Lusardi, A., & Mitchell, O. S. (2007). Financial Literacy and Retirement Preparedness: Evidence and Implications for Financial Education Programs. SSRN Electronic Journal. https://doi.org/10.2139/ssrn.957796
Lusardi, A., & Mitchell, O. S. (2008). Planning and Financial Literacy: How Do Women Fare? American Economic Review,

98(2), 413–417. https://doi.org/10.1257/aer.98.2.413

Lusardi, A., Mitchell, O. S., & Washington, G. (2011). Nber Working Paper Series Financial Literacy and Retirement Planning in the United States. Nber Work Pap Ser Financ., 10(4), 509–525.

Mabula, J. B., & Dong, H. (2018). Financial Literacy of SME Managers' on Access to Finance and Performance: The Mediating Role of Financial Service Utilization. International Journal of Advanced Computer Science and Applications, 9(9). https://doi.org/10.14569/ijacsa.2018.090905

Malinda, S., Masyita, D., Rahman, S., & Anwar, M. (2018). Financial literacy and work engagement as mediating variable to bank agent's performance. Eur Res Stud J., 21(Special Issue 3), 503–518.

Martínez, L. P. P., & De Mora, M. V. H. (2017). Influential models in the cooperatives of savings and credits in Colombia. REVESCO Rev Estud Coop., 125, 109–133.

McKillop, D., French, D., Quinn, B., et al. (2020). Cooperative financial institutions: A review of the literature. Int Rev Financ Anal., 71.

Ministry of Cooperatives and MSMEs of the Republic of Indonesia. (2019). Development of data on micro, small, medium enterprises (UMKM) and large enterprises (UB) in 2018–2019. Available online: https://satudata.kemenkopukm.go.id/arsip/2 (accessed on 2023 October 21).

Msuya, R. I., Kazuzuru, B., Mataba, L., et al. (2022). Impact of savings and credit co-operative societies' services on household livelihood outcomes in Mwanza and Tabora rural areas, Tanzania. International Journal of Social Economics, 50(3), 436–451. https://doi.org/10.1108/ijse-01-2021-0028

OECD. (2016). International Survey of Adult Financial Literacy Competencies. Available online: www.oecd.org/finance/OECD-INFE-International-Survey-of-Adult-Financial-Literacy-Competencies.pdf%0A (accessed on 5 March 2024).

OJK. (2021). Indonesia's National Financial Literacy Strategy (SNLKI) 2021–2025 (Indonesian). Available online: https://www.ojk.go.id/id/berita-dan-kegiatan/publikasi/Pages/Strategi-Nasional-Literasi-Keuangan-Indonesia-2021-2025.aspx (accessed on 5 March 2024).

Okello Candiya Bongomin, G., Munene, J. C., & Mpeera Ntayi, J., et al. (2018). Financial intermediation and financial inclusion of the poor. International Journal of Ethics and Systems, 34(2), 146–165. https://doi.org/10.1108/ijoes-07-2017-0101

Orser, B., Liao, X., Riding, A. L., et al. (2021). Gender-responsive public procurement: strategies to support women-owned enterprises. Journal of Public Procurement, 21(3), 260–284. https://doi.org/10.1108/jopp-11-2019-0078

Pandey, A., & Gupta, R. (2018). Entrepreneur's Performance and Financial Literacy—A Critical Review. International Journal of Management Studies, V(Special Issue 3), 01. https://doi.org/10.18843/ijms/v5is3/01

Pandey, S., & Amezcua, A. S. (2018). Women's business ownership and women's entrepreneurship through the lens of U.S. federal policies. Small Business Economics, 54(4), 1123–1152. https://doi.org/10.1007/s11187-018-0122-5

Quintiliani, A., Modina, M., & Arnone, M. (2023). Financial literacy, value creation and firm performance: an investigation of Italian small and medium enterprises. International Journal of Entrepreneurship and Small Business, 49(1), 63–86. https://doi.org/10.1504/ijesb.2023.131617

Rahman, M. M., Rahman, Md. M., Rahman, M., et al. (2021). The impact of trade openness on the cost of financial intermediation and bank performance: evidence from BRICS countries. International Journal of Emerging Markets, 18(10), 3550–3587. https://doi.org/10.1108/ijoem-04-2021-0498

Rahmawati, A., Wahyuningsih, S. H., & Garad, A. (2023). The effect of financial literacy, training and locus of control on creative economic business performance. Social Sciences & Humanities Open, 8(1), 100721. https://doi.org/10.1016/j.ssaho.2023.100721

Rao, S. A., Kareem Abdul, W., Kadam, R., et al. (2023). Factors affecting the performance of micro-level women entrepreneurs: a comparative study between UAE and India. Measuring Business Excellence, 27(3), 460–482. https://doi.org/10.1108/mbe-02-2022-0034

Ratnawati, K. (2020). The Impact of Financial Inclusion on Economic Growth, Poverty, Income Inequality, and Financial Stability in Asia. J Asian Financ Econ Bus., 7(10), 73–85.

Ratnawati, K. (2020). The Influence of Financial Inclusion on MSMEs' Performance Through Financial Intermediation and Access to Capital. J Asian Financ Econ Bus., 7(11), 205–218.

Riadi, S. S., Heksarini, A., Lestari, D., et al. (2022). The Benefits of e-Commerce before and during the Covid-19 Pandemic for Small Enterprises in Indonesia. Wseas Transactions on Environment and Development, 18, 69–79. https://doi.org/10.37394/232015.2022.18.8

Robbins, S. P., & Judge, T. A. (2015). Organizational Behavior. In: Organizational Behavior. Pearson.

Rousseau, P. L., & Wachtel, P. (1998). Financial Intermediation and Economic Performance: Historical Evidence from Five Industrialized Countries. Journal of Money, Credit and Banking, 30(4), 657. https://doi.org/10.2307/2601123

Salyanty, A., & Askar, M. W. (2022). Economic Resilience and Digital Adoption among Ultra-Micro Enterprises in Indonesia (Indonesian). Available online: https://www.womensworldbanking.org/insights/report-economic-resilience-and-digital-adoption-among-ultra-micro-entrepreneurs-in-indonesia/ (accessed on 5 March 2024).

Santos, C., & Freire, H. (2023). Do financial literacy and entrepreneurial skills lead to improved performance? Evidence from Swiss Biotechnology sector. J Commer Biotechnol., 28(2), 270–284.

Sekretariat Negara Indonesia. (2023). Indonesian Law No. 6 of 2023. Job Creation Law (Indonesian). Sekretariat Negara Indonesia.

Sisharini, N., Hardiani, S., & Ratnaningsih, C. S. (2019). Icreasing financial literacy and financial inclusion model to achieve MSMEs financial well being. Int J Sci Technol Res., 8(10), 314–317.

Sohilauw, M. I., Nohong, M., & Sylvana, A. (2020). The relationship between financial literacy, rational financing decision, and financial performance: An empirical study of small and medium enterprises in makassar. J Pengur., 59, 1–15.

Stolper, O. A., & Walter, A. (2017). Financial literacy, financial advice, and financial behavior. Journal of Business Economics, 87(5), 581–643. https://doi.org/10.1007/s11573-017-0853-9

Surahman, S. H., Fitrian, Z., Adi, A. S., & Yudaruddin, R. (2023). The effect of digital transformation and innovation on SMEs' performance in times of COVID-19. Probl Perspect Manag., 21(4), 84–100.

Swamy, V. (2014). Financial Inclusion, Gender Dimension, and Economic Impact on Poor Households. World Dev., 56, 1–15.

Syahdan, R., Djaelani, Y., & Mahdi, S. A. (2020). Strategic orientation and the performance of SMEs in Indonesia: The mediating role of access to finance. Management Science Letters, 1151–1160. https://doi.org/10.5267/j.msl.2019.10.026

Tumba, N. J., Onodugo, V. A., Akpan, E. E., & Babarinde, G. F. (2022). Financial literacy and business performance among female micro-entrepreneurs. Invest Manag Financ Innov., 19(1), 156–167.

Turyan, K. V. (2023). Influence of financial intermediation institutes on the welfare of the population in the post-Soviet countries: A comparative analysis. Cogent Social Sciences, 9(2). https://doi.org/10.1080/23311886.2023.2252260

UN Women. (2022). Assessing the Impact of Covid-19 on Gender and the Achievement of Sustainable Development Goals in Indonesia (Indonesian). Available online: https://data.unwomen.org/sites/default/files/inline-files/Report_Counting the Costs of COVID-19_Bahasa.pdf (accessed on 5 March 2024).

Vaziri, M. (2006). Islamic finance, rural cooperative financial institutions (Credit Unions) and micro financing strategies. Invest Manag Financ Innov., 3(2), 18–33.

Wernerfelt, B. (1984). A Resource-based View of the Firm. Strategic Management Journal, 5(2), 171–180.

Wiagustini, N. L. P., Ramantha, I. W., & Putra, I. M. W. (2023). Financial Literacy and Financial Behavior Encouraging Business Sustainability by Mediation of Financial Performance. Quality—Access to Success, 24(192). https://doi.org/10.47750/qas/24.192.27

Yen, G. (2012). A research on the structure and performance of financial holding industry in Taiwan—The intermediation role of firm conduct. ICIC Express Lett., 6(10), 2467–2470.

Ziv, N. (2010). Credit Cooperatives in Early Israeli Statehood: Financial Institutions and Social Transformation. Theoretical Inquiries in Law, 11(1). https://doi.org/10.2202/1565-3404.1241