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The effect of financial knowledge, financial behavior and digital financial capabilities on financial inclusion, financial concern and performance in MSMEs in East Java

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A B S T R A C T

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This study aims to prove and analyze the effect of financial knowledge, financial behavior, and digital financial capabilities on financial inclusion, financial concern, and performance in Small and Medium Enterprises (SMEs) in East Java. The population used in this study was 1,387,854 Micro, Small and Medium sized Enterprises (MSMEs) actors in East Java, which is located in the Gerbangk ertasusila area. The sample in this study were 395 respondents who were determined by the non-probability sampling method. In this study a questionnaire research instrument was used, namely a set of questions answered to respondents to obtain written information related to research variables and used the Structural Equation Modeling (SEM) analysis technique. The results of the study show that: (1) Financial knowledge has a significant effect on financial inclusion, (2) Financial behavior has a significant effect on financial inclusion, (3) Digital financial capability has a significant effect on financial inclusion, (4)) Financial inclusion has no significant effect on financial problems, (5) Financial knowledge has a significant effect on financial concerns, (6) Financial behavior has a positive and significant effect on financial concerns, (7) Digital financial capability has a significant effect on financial concern, (8) Financial knowledge has an insignificant effect on MSME performance, (9) Financial Behavior has no significant effect on MSME performance, (10) Digital financial capability has no significant effect on MSME performance, (11) Financial inclusion has a positive and significant effect on MSME performance. (12) Financial concern has a positive and significant effect on MSME performance.

1. Introduction

Indonesia's economy has benefited from Micro, Small and Medium sized Enterprises (MSMEs). This contributes to job creation and GDP. MSMEs have also offered a safety net for low-income populations, allowing people to work (Tambunan, 2011). High-quality standards, economic and social variables, and government support optimize development in this industry. MSMEs, which create jobs and absorb labor, may help emerging nations reduce poverty. MSMEs boost economic growth and development. They may absorb a lot of labor and have advantages in natural resources and local knowledge-based sectors. Food crop cultivation, plantations, animal husbandry, fisheries, trading, and restaurants are labor-intensive MSMEs. Medium-sized firms may contribute value in hotels, banking, leasing, corporate services, and forestry.

Indonesian MSMEs performed well between 2017 and 2018, according to the Central Bureau of Statistics. MSME units rose from 62.9 million in 2017 to 64.2 million in 2018. MSMEs also affect Indonesia's GDP, according to the Ministry of Cooperatives and Small and Medium Enterprises. MSMEs contributed 60.34% to the GDP in 2018, up from 57.08% in 2017.

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MSMEs contributed 60.00% and 60.16% to GDP in 2019 and 2020, respectively. Indonesia's MSMEs might boost economic growth, according to BPS 2020 statistics.

MSMEs help reduce poverty in Indonesia by creating jobs and increasing state income. Many Indonesian MSMEs struggle to develop owing to poor financial management, notably limited access to cash and funding. Some researchers claim that MSMEs have trouble getting finance or capital since they do not meet financial institutions' standards. MSMEs struggle with capital availability. Low capital is the key to micro and small company development. SMEs need loans to develop, and this cash infusion will boost manufacturing and commercial activity in tiny towns. MSMEs, which may create jobs, have unique obstacles. Smaller companies struggle to compete with bigger ones due to internal financial management issues.

Furthermore, the handling of funds is usually a burden for MSMEs stakeholders. SMEs have failed to properly apply strong financial management practices. According to Roro Puteri, who serves as the Head of Majoo Academy, the key cause for the collapse of 82% of firms is related to insufficient financial management. There are various elements contributing to this issue, including the inability to create financial reports, the existence of static inventory stocks, the adoption of low profit values, and the execution of inadequate plans and analyses. Moreover, he stated that MSMEs experience many hindrances in their growth, such as poor sales records, unorganized financial reports, difficulty in acquiring company finance, and restricted availability of business consultancies.

Financial institutions tend to neglect or underestimate the lower social strata owing to their perceived inadequate financial capabilities. Hence, it is necessary to undertake strategic initiatives targeted at boosting the effectiveness and longevity of MSMEs. Microfinance services provide modest loans or funding to low-income people. These services often require uncomplicated application processes and fundraising efforts. Microfinance refers to financial services for small-scale enterprises that cannot use regular banks owing to high transaction costs.

MSMEs continue to face internal and external hurdles and struggle to get operating finance. They depend on large capital inputs and a large client base. MSMEs may struggle to develop due to human resource management limitations. In view of the multiple obstacles experienced by MSMEs, it is vital that the financial stability of the organization be maintained at a high level to guarantee optimum performance and continuity of operations.

An organization's performance review is a systematic effort to evaluate its operations within a certain period. One component belongs to the area of money. Financial analysis tools assess a company's financial health. This study shows the company's performance over a certain time by revealing its financial strengths and weaknesses (Bongomin et al., 2016). Aribawa (2016) found several variables affecting MSMEs' performance and sustainability. Financial literacy has been shown to affect MSME performance. Financial literacy may be difficult for MSME stakeholders. Lusardi and Mitchell (2013) defined financial literacy as the ability to successfully handle economic information, participate in financial planning, and make educated choices about wealth, retirement, and debt management.

Financial literacy improves MSMEs' performance, according to Ningsih et al. (2020). Financial knowledge is essential for company success. Financial inclusion and MSMEs are linked. To effectively manage finances, individuals and institutions must have a thorough understanding of finance. In a business, the manager or owner makes financial decisions. This ensures appropriate and financially sound judgments. According to Herdjiono and Damanik (2016), MSME CEOs' financial and management expertise improves accountability and responsibility.

Financial knowledge—understanding and awareness of money's nature, function, sources, and management—is strongly correlated with financial education (Takaendengan, 2015). Financial management, budgeting, and investing skills are essential for MFI company success. Financial knowledge, which includes calculating money consumption and revenues, may improve financial success (Fernando, 2021). Financial knowledge, if well-grounded, may boost company success and longevity. According to Aribawa (2016), MSMEs have the capacity to boost their performance and maintain company continuity by making educated management and financial choices.

Dai et al. (2019) found that Behavioral Finance from Habit, Capital, and Change affects SME performance. Positive financial conduct may boost MSMEs' success. Dermawan's (2019) research shows that micro-businesses' financial management and inclusion significantly impact MSMEs' performance. The research done by Williams in (1996) argued that financial anxiety had a substantial influence on productivity. However, this study examines how financial worry affects MSMEs, an understudied topic. This banking sector analysis is innovative. This study is the first to examine the association between financial inclusion and financial worry. This work adds new knowledge to the field.

Several studies link financial literacy to MSMEs' success. Financial literacy does not affect MSMEs' performance, according to Kusumadewi's (2017) and Fitria et al.' (2021) studies. As seen above, financial literacy improves MSMEs' performance. This research gap has prompted researchers to study financial literacy—including financial knowledge, financial behavior, digital financial capacity, financial inclusion, and financial concern—and its effects on East Java MSMEs. The research examined commerce and service MSMEs. The purpose was to analyze the impact of financial management skills and financial capabilities, including financial knowledge, financial behavior, digital financial capacity, financial inclusion, and financial concern, in increasing the financial performance of these organizations.

2. Literature review and hypothesis development

2.1 Effect of Financial Knowledge on Financial Inclusion

Dermawan (2019) concludes that the higher the financial literacy and inclusion of MSME players, the more understanding of how to manage business finances well and in the end the higher literacy, inclusion, and financial management can help improve the performance and sustainability of UB students' micro businesses. Bire et al. (2019) show that financial literacy has a direct and significant effect on financial inclusion. The research results of Hamzah and Suhardi (2019) found that financial attitude has a positive effect on financial technology, financial behavior has a positive effect on financial technology, financial knowledge has a positive effect on financial technology, and financial technology has a positive effect on financial inclusion. Thus, in order to increase the level of financial literacy and financial technology in MSMEs, MSME actors must pay attention to the level of financial attitude, financial behavior, financial knowledge, financial technology so that MSME financial inclusion also increases.

2.2 Effect of Financial Behavior on Financial Inclusion

Research by Tan et al. (2021) suggests that e-payment impressions have a significant positive effect on behavioral intentions and financial inclusion. The intention to adopt a new behavior using e-payment has a significant positive effect on the financial inclusion of MSEs. New behavioral intentions partially mediate the relationship between e-payment impressions and MSE digital financial inclusion. The new intention of using Fintech contributes more than the impression of using e-payments in MSE digital financial transactions. The research results of Hamzah and Suhardi (2019) show that financial attitude has a positive effect on financial technology, financial behavior has a positive effect on financial technology, financial knowledge has a positive effect on financial technology, and financial technology has a positive effect on financial inclusion. Thus, in order to increase the level of financial literacy and financial technology in MSMEs, MSME actors must pay attention to the level of financial attitude, financial behavior, financial knowledge, financial technology so that MSME financial inclusion also increases.

2.3 The Influence of Digital Financial Capabilities on Financial Inclusion

Research by Tan et al. (2021) suggests that e-payment impressions have a significant positive effect on behavioral intentions and financial inclusion. The intention to adopt a new behavior using e-payment has a significant positive effect on the financial inclusion of MSMEs. New behavioral intentions partially mediate the relationship between e-payment impressions and MSE digital financial inclusion. The new intention of using Fintech contributes more than the impression of using e-payments in MSE digital financial transactions. The research results of Hamzah and Suhardi (2019) found that financial attitude has a positive effect on financial technology, financial behavior has a positive effect on financial technology, financial knowledge has a positive effect on financial technology, and financial technology has a positive effect on financial inclusion. Thus, in order to increase the level of financial literacy and financial technology in MSMEs, MSME actors must pay attention to the level of financial attitude, financial behavior, financial knowledge, financial technology so that MSME financial inclusion also increases.

2.4 Effect of Financial Inclusion on Financial Concern

Ratnawati (2020) explains that based on the factor analysis of financial literacy and financial inclusion, the results show that there are several attributes that significantly influence the financial literacy of small and medium industry communities, namely financial planning, experience in the financial sector, socialization of financial literacy from related parties, social status economy, economic attitude, financial behavior, financial attitude, financial crisis, government policy, financial education, demography, investment, saving, consumption, financial wellbeing, financial concerns, self-control, old age, and gender. Meanwhile, financial inclusion attributes include credit management, knowledge of credit guidelines, consumer over-indebtedness, savings and time deposits functions.

2.5 Effect of Financial Knowledge on Financial Concern

Xue et al. (2021) found that (1) financial problems mediated most of the financial literacy strategy relationships; in particular, people who are financially illiterate are more likely to have financial problems and are more likely to reduce spending, seek employment opportunities, increase debt and reduce or sell their homes as a result; (2) people who are financially literate are more likely to seek professional financial advice, purchase life annuities, contribute more to retirement funds and invest more conservatively, regardless of their concerns.

2.6 Effect of Financial Behavior on Financial Concern

Meuris and Leana (2018) showed that people who are worried about their financial situation have less cognitive capacity available to them, which then affects performance. Williams et al. (1996) reported that financial problems and people's worries increase in an uncertain economy, and their effect on productivity is critical. Documentation of this effect to date is necessary to promote financial counseling and education programs for workers in the workplace. The costs and benefits of the program are aimed at encouraging improvement and continuing programs of employee assistance or human resources in collaboration with other financial professionals.

2.8 The Influence of Digital Financial Capabilities on Financial Concern

Research by Kogilah et al. (2011) shows that the dependent variable and independent variable are positively correlated, and all hypotheses are valid and accepted. It was found that e-finance is influenced by the dimensions of security, income and costs, technology architecture with global technology adoption.

2.9 Effect of Financial Knowledge on Performance

Augustin et al. (2020) reported that increasing one's financial knowledge will be able to help companies create reliable strategies. This reliable strategy can be seen by the increase in company performance. Prasetya et al. (2021) confirmed the positive influence of MSME characteristics on financial literacy and financial literacy on MSME sustainability. In addition, financial literacy is proven to be a significant mediator of MSME sustainability. Aribawa (2016) emphasized that financial literacy has a significant effect on the performance and sustainability of creative SMEs in Central Java. Nugroho (2022) shows the results that financial literacy and financial attitudes have a positive and significant effect on performance. Kumalasari and Asandimitra (2019) show that financial literacy, education level, business continuity, and financial records do not affect SME performance, and capital affects SME performance.

2.10 Effect of Financial Behavior on Performance

Research by Fitria et al. (2021) proves that financial attitudes have a positive effect on MSME performance. Another finding is that financial literacy and financial behavior do not affect the performance of MSMEs. Research by Asmin (2021) proves that partially financial behavior and entrepreneurial skills have a positive and significant effect on the performance of SMEs, financial self-efficacy has a positive and insignificant effect on the performance of SMEs, while simultaneously exogenous variables have a positive and significant effect on the performance of SMEs in the culinary and fashion sectors of the Regency Gowa. Dai et al. (2019) showed that there is a known influence of Behavioral finance from Habit, capital and change on the performance of Leading Small and Medium Enterprises in Cimahi City. Research by Fitria et al. (2021) suggests that financial literacy and financial behavior do not affect the performance of MSMEs.

2.11 Effect of Digital Financial Capabilities on Performance

Research by Nasiri et al. (2020) shows that performance measurement systems (PMS) significantly mediate the relationship between digital-related humans and collaboration abilities and financial performance. However, a significant mediating effect of PMS was not found between technical capabilities and digital-related innovation and financial performance. Armiani and Basuku's research (2021), shows that digital technology partially mediates business strategy on MSME performance. Digital technology is an intermediary variable that can be competitive in the global market, because MSME actors can do online marketing, so that their products are known and can increase sales. The business strategy applied is the cost leadership strategy in terms of; dominance of commodity products, production processes using traditional tools, lack of new product development, minimal cooperation with resellers. Financial performance experienced an increase in sales and operating profit, non-financial performance experienced an increase; service quality, product quality, achievement of production targets and provide information about the effectiveness, use of digital technology in business strategies to improve MSME performance. Digital literacy and entrepreneurial orientation have a positive and significant effect on MSME business performance, as well as digital literacy mediated by entrepreneurial orientation on MSME business performance in the food and beverage sector in South Jakarta. Luo and Zeng (2020) revealed that digital financial capabilities have a significant and positive impact on household business ownership and innovation. Digital capability and financial capability have a significant influence on household entrepreneurship. Khin and Ho (2018) showed that digital orientation and digital capabilities have a positive effect on digital innovation and also that digital innovation mediates the influence of technology orientation and digital capabilities on financial and non-financial performance.

2.12 Effect of Financial Inclusion on Performance

Ratnawati's research (2020) shows that financial inclusion affects the performance of MSMEs, both directly and indirectly through mediation from financial intermediation and access to capital. This direct effect means that efforts to increase access to financial services, especially access to credit financing for MSMEs, will be able to increase market share, number of workers, sales and profits for MSMEs. Increasing financial inclusion has a major impact on improving MSME performance through financial intermediation compared to access to capital. This means that increasing access to finance for MSMEs followed by increasing financial intermediation in the form of a financial service approach for MSMEs will improve the performance of MSMEs. The results of Yanti's research (2019) can be concluded that the two independent variables, namely financial inclusion and financial literacy, have a positive and significant influence on the performance of MSMEs. Dermawan (2019) shows literacy, inclusion and financial management in the first model have a positive and significant effect on the performance and sustainability of MSMEs. Meanwhile, the second model shows the result that only the financial inclusion variable does not have a significant effect on the performance and sustainability of MSMEs. Sanistasya et al. (2019) showed that financial literacy has a significant effect on the performance of small businesses and financial inclusion has a significant effect on the performance of small businesses.

2.13 Effect of Financial Concern on Performance

Taft et al. (2013) showed that age and education are positively correlated with financial literacy and financial well-being. Married people and men are more financially literate. Higher financial literacy leads to greater financial well-being and less financial worry. Finally, financial well-being causes less financial worry. Xue et al. (2021) found that (1) financial problems mediate most of the financial literacy strategy relationships; in particular, people who are financially illiterate are more likely to have financial problems and are more likely to reduce spending, seek employment opportunities, increase debt and reduce or sell their homes as a result; (2) people who are financially literate are more likely to seek professional financial advice, purchase life annuities, contribute more to retirement funds and invest more conservatively, regardless of their concerns.

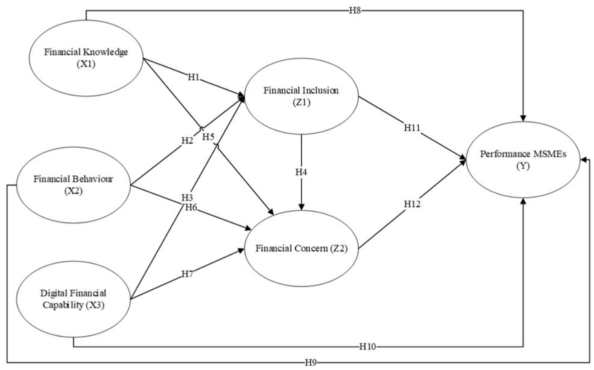

Fig. 1. Conceptual Framework

Based on the formulation of the problem, literature review and research conceptual framework that has been described in the previous discussion, the research hypothesis is formulated as follows:

H_1: *Financial knowledge has a significant effect on the financial inclusion of MSMEs in East Java.*
H_2: *Financial behavior has a significant effect on the financial inclusion of MSMEs in East Java.*
H_3: *Digital financial capabilities have a significant effect on the financial inclusion of MSMEs in East Java.*
H_4: *Financial inclusion has a significant effect on the financial concerns of MSMEs in East Java.*
H_5: *Financial knowledge has a significant effect on the financial concerns of MSMEs in East Java.*
H_6: *Financial behavior has a significant effect on the financial concerns of MSMEs in East Java.*
H_7: *Digital financial capabilities have a significant effect on the financial concerns of MSMEs in East Java.*
H_8: *Financial knowledge has a significant effect on the performance of MSMEs in East Java.*
H_9: *Financial behavior has a significant effect on the performance of MSMEs in East Java.*
H_{10}: *Digital financial capabilities have a significant effect on the performance of MSMEs in East Java.*

3. Research Methods

3.1 Research Design

This research was conducted using a quantitative approach, namely systematic scientific research on parts and phenomena as well as looking for causal or causal relationships between variables that can be measured by performing analysis with statistical techniques. Quantitative research is mostly conducted using statistical methods that are used to collect quantitative data from research studies. In this research method, researchers use a conceptual framework based on theories related to the variables used. This research is a causal explanatory study by testing hypotheses that have been formulated based on theory and empirical studies, namely the influence of the variables Knowledge of Finance, Financial Behavior, Digital Financial Capability on Financial Inclusion, Financial Problems and Performance in MSMEs in East Java. The relationship between variables is formulated in a hypothesis that is supported by theoretical and empirical studies which will then be proven true through data analysis from survey results of MSMEs using statistics so that the results can be known whether the results of this study support or reject the results of previous studies used as a reference in research.

3.2 Population, Samples and Sampling Methods

The population is the whole of the research object to be studied which is in a certain area consisting of objects or subjects to be studied that have certain qualities and characteristics. The population in this study are MSME actors in East Java, which is located in the Kertasusila Gate area, namely the Gresik, Bangkalan, Mojokerto, Surabaya and Lamongan regions. The research sample is part of the number and characteristics possessed by the population and at least has homogeneous characteristics. The sample in this study was determined by random sampling method, namely According to Simply Psychology, random sampling is a type of probability sampling in which everyone in the entire target population has an equal chance of being selected, the sample is selected randomly which is intended as an unbiased representation of the total population. The population in this study has been determined namely MSMEs in the Kertasusila Gate area of East Java Province, with a total of 1,387,854 MSMEs, the number is too large because according to Hair et al. (2012) the sample size is too large which will make it difficult to get a suitable model, and it is recommended that an appropriate sample size be between 100-200 respondents so that estimation interpretation can be used with the Structural Equation Model (SEM).

3.3 Measurement and Hypotheses Testing

Data analysis in this study uses an analytical method that can provide a simultaneous analysis process related to multi-variant research models such as in this study, namely Structural Equation Modeling (SEM) analysis. According to Ferdinand (2006: 6), SEM is a set of statistical techniques that allow testing a series of relatively complicated relationships simultaneously. These complex relationships can be built between one or more dependent variables and one or more independent variables. In accordance with the existing conceptual framework and hypotheses, the research data was tested using SEM analysis. According to Hair et al. (2012), there are 7 (seven) steps that must be taken when using SEM, namely 1) Development of a theory-based model; 2) Development of flowcharts (path diagrams); 3) Convert flowcharts into equations; 4) Selecting the input matrix and model estimation; 5) Select problem identification; 6) Evaluation of goodness of fit criteria; and 7) Model interpretation and modification.

4. Results

4.1 Respondents' Profiles

Description analysis was carried out by calculating the percentage and average value using SPSS which was used to find out the profile of respondents and analysis of respondents' perceptions of the answers to the questions asked in the questionnaire, in this study the analysis was carried out on 395 respondents who were successfully obtained and carried out editing process. The profiles of respondents are shown in Table 1.

Table 1
Respondents' Profiles

Characteristics	Category	Amount	Percentage
Gender	Man	204	51.65%
	Woman	191	48.35%
Age	< 25 years	16	4.05
	> 25-40 Years	248	62,79
	> 40-55 Years	131	33,16
Education	≤ SMA/SMK	215	54,43
	Diploma	36	9,12
	S1	128	32.40
	S2	16	4.05
length of business	< 3 years	26	6.58%
	> 3-5 Years	147	37.21%
	> 5-10 Years	185	46.84%
	> 10 Years	37	9.37%

Table 1 describes the demographic data of the respondents which are divided into four characteristics, namely gender, age, education, and length of business. Each characteristic has several categories with different numbers of respondents. Gender showed that out of a total of 395 respondents, there were 204 respondents or 51.65% who were men and 191 respondents or 48.35% who were women. Age in Table 1 shows that out of a total of 395 respondents, there were 16 respondents or 4.05% who were less than 25 years old, 248 respondents or 62.79% who were between 25-40 years old, and 131 respondents or 33.16% who aged between 40-55 years. Education in Table 1 shows that out of a total of 395 respondents, there were 215 respondents or 54.43% who had less education than SMA/SMK, 36 respondents or 9.12% who had Diploma education, 128 respondents or 32.40% who had education S1, and 16 respondents or 4.05% who have a Masters degree. The length of business in Table 1 shows that out of a total of 395 respondents, there were 26 respondents or 6.58% who had a business length of less than 3 years, 147 respondents or 37.21% who had a length of business between 3-5 years, 185 respondents or 46 .84% who have been in business between 5-10 years, and 37 respondents or 9.37% who have been in business for more than 10 years. Table 1 can be used to analyze the characteristics of respondents who are sampled in a study or survey, so that it can assist in making decisions or determining strategies based on the characteristics of the identified respondents.

4.2 Measurements

Variable measurements in this study were carried out using validity tests and reliability tests. Analysis of the results of this study was carried out in several stages, starting with testing the instrument with the validity and reliability of the instrument, then testing the hypothesis by analyzing the suitability of classical assumptions and model suitability and then analyzing the hypothesis testing with Amos's SEM. Instrument validity test is used to measure the validity or validity of a questionnaire.

Table 2
Validity Test Results

Variable	Question Items	Corrected item total correlation	Information
Financial Knowledge	X1.1.	0.646	Valid
	X1.2	0.703	Valid
	X1.3	0.521	Valid
	X1.4	0.650	Valid
	X1.5	0.536	Valid
	X1.6	0.633	Valid
	X1.7	0.649	Valid
	X1.8	0.620	Valid
Financial Behavior	X2.1.	0.624	Valid
	X2.2	0.718	Valid
	X2.3	0.674	Valid
	X2.4	0.565	Valid
	X2.5	0.713	Valid
	X2.6	0.711	Valid
	X2.7	0.608	Valid
	X2.8	0.667	Valid
	X2.9	0.565	Valid
	X2.10	0.667	Valid
	X2.11	0.684	Valid
	X2.12	0.628	Valid
	X2.13	0.645	Valid
	X2.14	0.664	Valid
	X2.15	0.708	Valid
Digital Financial Capability	X3.1.	0.592	Valid
	X3.2	0.559	Valid
	X3.3	0.649	Valid
	X3.4	0.508	Valid
	X3.5	0.624	Valid
	X3.6	0.669	Valid
	X3.7	0.570	Valid
	X3.8	0.478	Valid
Financial Inclusion	X4.1.	0.661	Valid
	X4.2	0.685	Valid
	X4.3	0.697	Valid
	X4.4	0.685	Valid
	X4.5	0.653	Valid
	X4.6	0.617	Valid
	X4.7	0.692	Valid
	X4.8	0.664	Valid
	X4.9	0.650	Valid
	X4.10	0.713	Valid
	X4.11	0.599	Valid
	X4.12	0.654	Valid
	X4.13	0.605	Valid
	X4.14	0.725	Valid
	X4.15	0.588	Valid
	X4.16	0.650	Valid
Financial Concerns	X5.1.	0.523	Valid
	X5.2	0.682	Valid
	X5.3	0.507	Valid
	X5.4	0.644	Valid
	X5.5	0.618	Valid
	X5.6	0.602	Valid
	X5.7	0.576	Valid
	X5.8	0.643	Valid
	X5.9	0.641	Valid
	X5.10	0.718	Valid
	X5.11	0.621	Valid
MSME *Performance*	X4.1.	0.553	Valid
	X4.2	0.544	Valid
	X4.3	0.601	Valid
	X4.4	0.554	Valid
	X4.5	0.557	Valid
	X4.6	0.538	Valid
	X4.7	0.677	Valid

A questionnaire is said to be valid if the questions on the questionnaire can reveal something that will be measured by the questionnaire. Calculation of the validity test in this study used the Pearson Correlation method by looking at the significance value contained in the table, Hair et al., (2014) stated that the corrected item total correlation was at least 0.3 so that the question item could be used in further data processing, so that if the results of the corrected item total correlation analysis get a value above 0.30 then it can be said to be valid, but if the correlation value shows a number below 0.3 then the statement item is declared invalid. The validity test in this study is shown in Table 2. On the other hand, in order to test the reliability of the research instruments used to test the variables studied, the research used a reliability test. Reliability is a measure of the internal consistency of the indicators of a construct which shows the degree to which each indicator indicates a common latent construct/factor (Hair et al., 2012). The recommended approach in assessing a measurement model is to assess the amount of composite reliability and variance extracted from each construct. The cut-off value used to assess an acceptable level of reliability is ≥ 0.70 for composite reliability. The second measure of reliability is variance extracted, which shows the amount of variance of the indicators developed. The high value of variance extracted indicates that the indicators have represented the latent constructs well developed (Hair et al., 2012). The recommended value is at least 0.50. Measuring reliability can also use the Cronbach alpha coefficient (α) which shows how good the question item is positively related to other question items. If the Cronbach alpha coefficient is 0.6 or more, then the research data is considered good or reliable enough to be used as input for data analysis (Hair et al., 2013). The results of the reliability test of this study are shown in Table 3.

Table 3
Research Reliability Test Results

Variable	Cronbach's Alpha	Standard Cronbach's Alpha	Information
Financial Knowledge	0.864	0.7	Reliable
Financial Behavior	0.927	0.7	Reliable
Digital Financial Capability	0.840	0.7	Reliable
Financial Inclusion	0931	0.7	Reliable
Financial Concerns	0.888	0.7	Reliable
Performance MSME	0.822	0.7	Reliable

Structural Equation Modeling (SEM) analysis

There are several assumptions that must be met in the procedures and processing of the SEM model, including adequacy of sample size, normality of multivariate outlier data and multicollinearity and singularity. The SEM equation model in this study can be seen in Fig. 2.

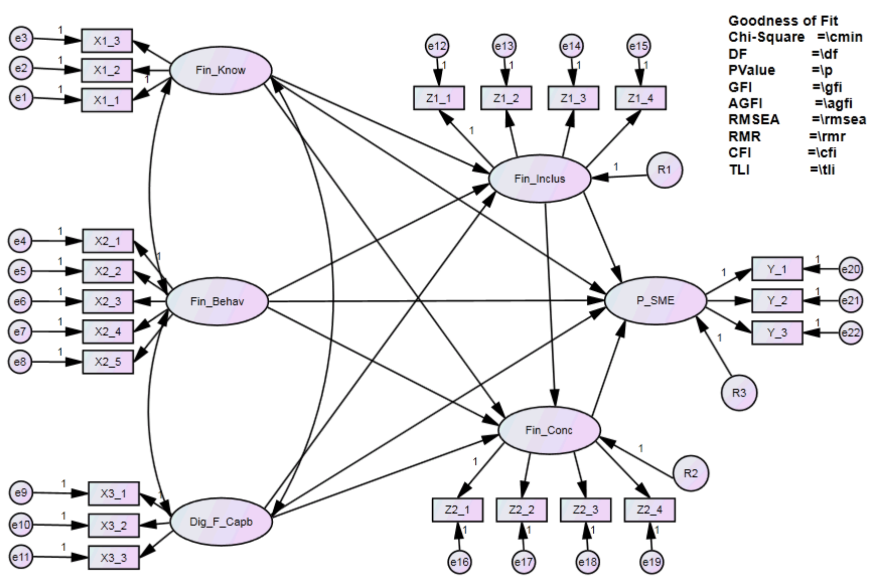

Fig. 2. Structural Equation Model

From testing the structural equation model, it shows that all indicators have values that do not exceed or fall below the critical limit of +/-2.58. Thus, univariately, *all* indicators are normal. The distribution of this research data in a *multivariate manner* gives a cr value of -0.017 which is still far above the +/-2.58 limit. So in a *multivariate way,* the research data is normally distributed and can be continued to the next stage. This study also examines *Outliers* , which are cases or data that have unique characteristics that look very much different and appear in the form of extreme values for either a single variable or a combination variable (Hair et al., 2012). Evaluation of the occurrence of outlier symptoms can be seen by evaluating the AMOS output display on the p2 column value. If the p2 column has a value <0.05, this indicates an outlier in the data.

Table 4
Outlier Test Calculation Results

Observation number	Mahalanobis d-squared	p1	p2
305	25,683	0.266	0.347
101	25,744	0.263	0.350
325	25,931	0.255	0.357
282	31,511	0.086	0.838
270	31,816	0.081	0.850
123	31,562	0.085	0.870

Based on the calculation results in Table 5.10, it appears that the observation that has the smallest p2 value of 0.347 is *observation number* 305. These findings indicate that none of the values in the p2 column in the Mahalanobis calculation table have numbers below 0.05. In other words, the data distribution used in this study does not have multivariate *outliers.*

Structural Equation Model Analysis

The structural equation model developed has undergone model modification, the Structural Equation Model is analyzed to determine the effect of *Financial Knowledge, Financial Behavior,* and *Digital Financial Capability* on *Financial Inclusion, Financial Concern,* and *MSME Performance* which has been outlined in the form of research hypotheses in the model as can be seen in Figure 3.

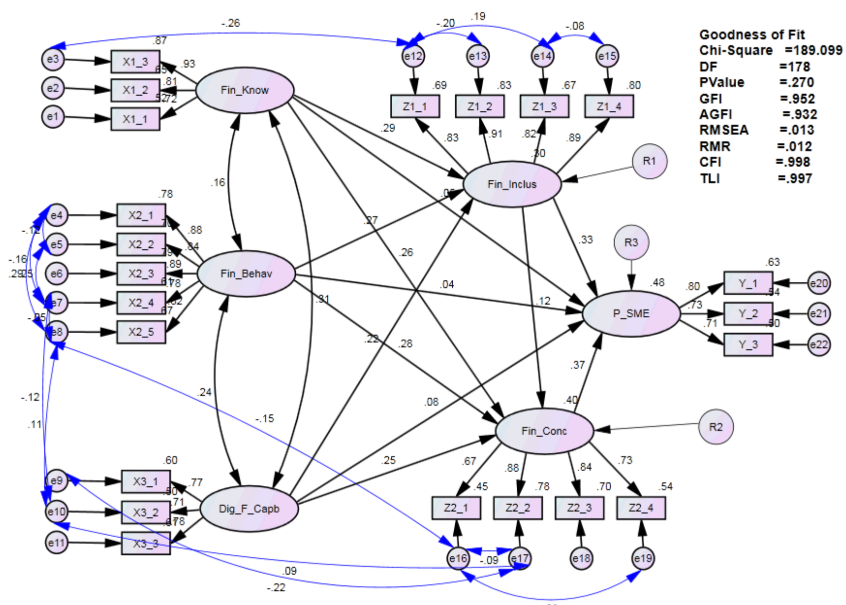

Fig. 3. Structural Equation Model

The structural equation model that has been modified shows that it meets the *Goodness of Fit criteria*. On the value of the PValue coefficient, it is known that the equation model is good (P> 0.05), GFI and AGFI are good, RMSEA is good (< 0.08), CFI is good (> 0.95) and so on for other criteria, as can be seen in Table 5.

Table 5
Goodness of Fit Structural Model

Parameter	Criteria	Test result	Information
Chi-Square	DF = 178, χ^2 = 210.13	189,099	Good
probability	≥ 0.05	0.270	Good
GFI	≥ 0.90	0.952	Good
AGFI	≥ 0.90	0.832	Good
RMSEA	≤ 0.08	0.013	Good
RMR	≤0.08	0.012	Good
CFI	≥0.94	0.998	Good
TLI	≥ 0.95	0.997	Good

Source: Primary data processed by researchers

Proof of Hypothesis

The final model of the structural equation that has been tested and evaluated in the previous section, then the Amos program provides the results of calculating the effect between variables as a basis for proving the hypothesis in this study as shown in Table 6.

Table 6

Effects of Inter-Variables on the Structural Equation Model

No.	Influence between Variables	*Standardized Weight*	SE	CR	P	Information
1	Fin_Know →Fin_Inclus	0.291	0.056	5,047	<0.001	Significant
2	Fin_Behav →Fin_Inclus	0.267	0.049	4,909	<0.001	Significant
3	Dig_F_Capb →Fin_Inclus	0.217	0.063	3,521	<0.001	Significant
4	Fin_Inclus →Fin_Conc	0.119	0.051	1,945	0.052	Not significant
5	Fin_Know →Fin_Conc	0.264	0.049	4,343	<0.001	Significant
6	Fin_Behav →Fin_Conc	0.280	0.044	4,733	<0.001	Significant
7	Dig_F_Capb →Fin_Conc	0.250	0.055	3,833	<0.001	Significant
8	Fin_Know →P_SME	0.055	0.053	0.896	0.370	Not significant
9	Fin_Behav →P_SME	0.042	0.047	0.712	0.476	Not significant
10	Dig_F_Capb →P_SME	0.084	0.06	1,269	0.205	Not significant
11	Fin_Conc →P_SME	0.374	0.081	4,926	<0.001	Significant
12	Fin_Inclus →P_SME	0.335	0.059	5,075	<0.001	Significant

The results of the data analysis showed that Financial Knowledge has a significant positive effect on Financial Inclusion, with a coefficient of 0.291, supported by a cr of 5.047 and a p-value of <0.001. The same applies to Financial Behavior and Digital Financial Capability, with coefficients of 0.267 and 0.217, respectively, and significant cr and p-values. However, Financial Inclusion did not significantly influence Financial Concern, with a coefficient of 0.119 and a non-significant cr and p-value. Financial Knowledge, Financial Behavior, and Digital Financial Capability had significant positive effects on Financial Concern, with coefficients of 0.264, 0.280, and 0.250, respectively, and significant cr and p-values. Finally, Financial Knowledge and Financial Behavior did not significantly influence MSME Performance, with coefficients of 0.055 and 0.042, respectively, and non-significant cr and p-values.

5. Discussions

This research demonstrated that financial education and planning promote financial inclusion among East Java MSMEs. MSMEs with financial management skills have more funds. Planning and managing money helps MSMEs increase sales and profitability. Company existence depends on financial management. The report revealed East Java MSMEs can budget and manage expenses. financial inclusion. This study supports Dermawan (2019), Bire et al. (2019), and Tan et al. (2021) research.

Financial inclusion allows East Java MSMEs to own and utilize financial system services. Good financial conduct implies excellent financial access. Data demonstrates financial behaviour enhances financial inclusion. This research supports Tan et al. (2021). Data reveals Digital Financial Capability impacts Financial Inclusion. Therefore, DFC supports financial inclusion. Digital finance is financial innovation with a touch of current technology, therefore digital literacy is the capacity to comprehend and utilize digital information. Digital investment and payment platforms receive financial services through phones, computers, and the Internet. Mobile banking, online shopping, credit card use, and economic and financial digital information were used to determine financial digital competence. All indicators were High, suggesting that East Java MSMEs have high-level digital finance capabilities, which may affect their performance. This research validates Hamzah and Suhardi's (2019) conclusion that Financial Digital Capability strongly influences Financial Inclusion. Data suggests Financial Inclusion does not impact Financial Concern. MSMEs with strong financial inclusion may not worry about money.

Financial inclusion means MSMEs have access to a range of quality formal financial services in a seamless, fast, and safe way at a reasonable cost to enhance society. This research contradicted Terzi (2015)'s premise that MSMEs' financial inclusion enhances financial stability through increasing financial worry. Financial inclusion enhances public access to financial services and products. MSMEs employ their own cash rather than request for loans, which need a guaranteed certificate, proposals, and financial reports. It doesn't impact finances since it calms them. Financial Concern is strongly correlated with Financial Knowledge. Financially savvy MSMEs may avoid problems. Most responders knew their business's costs and revenues, financial management, and financial planning. Business costs and revenues worried them.

Financial education reduces financial stress, thus MSMEs who know how to plan, manage, and record money would check the business's finances. This research supports Xue et al. (2021). Financial Behavior substantially impacts Financial Concern. MSMEs with excellent financial management will always be examined for extra financial conditions. Most MSMEs pay their bills on schedule, exhibiting financial responsibility. MSME finances are handled and planned when they develop a spending and expenditure budget, record expenses and expenditures, and fund non-expenses. unexpected and save often, thus MSME financial management is important. East Java MSMEs are financially responsible due to financial concerns.

This study indicated that managing finances minimizes MSMEs' financial worries. This research supports Meuris and Leana (2018). MSMEs have high Digital Financial Capability because they comprehend and utilize mobile banking. MSMEs buy and sell online. MSMEs may now use credit cards to anticipate financial needs and return them early to avoid penalties. This study indicated that MSMEs understand Economic & Financial Digital Information to obtain digital financial information. Thus, MSME owners or managers in this study exhibited good digital financial skills. MSMEs already comprehend and do business online, according to this report. This research confirms Gilster's definition of digital literacy as the ability to evaluate and use information from different sources or digital devices. This study supports Kogilah et al. (2011).

Financial management, planning, and income and expenses are fundamental financial concepts. Business expenses and revenue knowledge averaged highest. They have a High income and Sufficient financial management (Riyadi & Arif, 2023). Thus, SMEs in this research had strong financial knowledge but needed to enhance their management abilities, even while financial knowledge did not affect SME performance but was essential for managing business finances.

Financial Knowledge of MSMEs in East Java has not had a significant effect on their performance, possibly because MSMEs have been trying their best to run their business by improving product quality, marketing goods, and selling with vigorous promotions, so even though they have low financial knowledge, their performance is still high. Financial Behavior does not influence MSME Performance. MSMEs don't need financial conduct since enhancing performance does not improve performance.

Paying payments on time shows great financial behavior in this study. MSMEs budget their expenditures to remain organized. They record corporate expenditures, save, and cover unexpected expenses. Financially healthy SMEs were surveyed. MSMEs' finances cannot improve performance. MSMEs strive for good performance, thus their financial conduct doesn't affect performance. great and continually improving. This study supports Fitria et al. (2021) research. Data reveals that Digital Financial Capability does not influence MSME Performance. MSMEs' digital financial abilities do not affect their performance. Respondents' excellent awareness of mobile banking, internet shopping, credit card usage, and Economic & Financial Digital reveals MSMEs' digital capability. This study does not support their findings since SMEs' performance is unrelated to their ability. Luo and Zeng (2020). Data demonstrates MSME Financial Inclusion boosts performance. Financial inclusion is removing all obstacles to MSME access to affordable financial services. MSME access, financial services utilization, and product quality demonstrate this. MSMEs with financial inclusion do well. This research validates Ratnawati (2020), Yanti (2019), and Dermawan (2019) results.

Financial worries hurt MSME performance. MSME performance improves as UMKM finances grow. Value loss causes financial anxiety. Financial troubles arise when a person cannot meet his financial needs or is financially unstable. This study measures financial anxiety by satisfaction with financial status, debt and savings, appropriate income, and investment, and MSMEs perform better if they can manage financial difficulties. This research supports Taft et al. (2013) and Xue et al. (2021).

6. Conclusions

This study aims to prove and analyze the effect of financial knowledge, financial behavior, and digital financial capabilities on financial inclusion, financial anxiety, and performance of MSMEs in East Java. The results of the study show that financial knowledge, financial behavior, and digital financial capabilities have a significant influence on financial inclusion. However, financial inclusion does not have a significant effect on financial problems. Financial knowledge, financial behavior, and digital financial skills also have a significant influence on financial worries. However, only financial inclusion and financial worries have a positive and significant impact on MSME performance. Therefore, the conclusion of this study is that MSMEs in East Java must have good financial knowledge, financial behavior, and digital financial capabilities to improve financial inclusion and improve their business performance.

7. Limitations and Future Research Recommendations

This research can be considered successful in producing important findings in financial studies. However, this research also has a number of limitations. Some of the limitations of the above research include the use of non-probability sampling methods which may not represent the population as a whole. In addition, using a relatively small sample may produce inaccurate results or may not be generalizable to the wider population. Other factors outside the variables studied may have influenced the results, such as social, economic, and cultural factors, which were not included in the analysis. This research is only focused on MSMEs in East Java, so the results may not be applicable to other regions in Indonesia or even other countries. The data used in this study are based on questionnaires filled out by respondents, which can lead to bias in data collection, such as social and response bias. This study only uses the Structural Equation Modeling (SEM) analysis technique, so other techniques such as linear regression may give different results. There are several other variables not considered in this study that may affect financial inclusion and the performance of MSMEs, such as government regulations or market competition.

Based on the limitations of the research previously described, some suggestions for further research are to use a different sampling technique: Using a different sampling technique such as probability sampling can provide a better picture of the

MSME population in the same area or other areas. Adding more comprehensive variables such as external factors (such as the economic situation in the region) or taking into account differences in characteristics between MSME groups (for example between MSME of different sectors or sizes) can help broaden the understanding of the influence of certain factors on MSME financial inclusion and performance. Future research can also use more specific and in-depth measurements for variables such as financial behavior and digital financial capability to help obtain more accurate and in-depth results. In addition, future research can also use more complex analytical methods: Using more complex analytical methods such as the multilevel analysis method can help improve the management of factors related to MSMEs and financial inclusion at different group and regional levels.

References

Aribawa, D. (2016). Pengaruh literasi keuangan terhadap kinerja dan keberlangsungan UMKM di Jawa Tengah. *Jurnal Siasat Bisnis*, *20*(1), 1-13.

Armiani., S., & Basuki, N. (2021) Teknologi digital memediasi dampak strategi bisnis terhadap kinerja UMKM di Nusa Tenggara Barat. *Jurnal Ekonomi dan Keuangan.* DOI: 10.24034/j25485024.y2021.v5.i3.4892

Asmin, E. A. (2021). *Pengaruh Perilaku Keuangan, Financial-Self Efficacy Dan Entrepreneurial Mindset Terhadap Teknologi Informasi Dan Kinerja Keuangan (Studi Pada Ukm Di Kota Makassar)* (Doctoral dissertation, UNIVERSITAS HASANUDDIN).

Augustin, J., Worokinasih, S., & Darmawan, A. (2020). Peran Mediasi Financial Behaviour Pada Financial Literacy Terhadap Firm Performance. *Profit: Jurnal Administrasi Bisnis*, *14*(2), 92-103.

Bire, A. R., Sauw, H. M., & Maria, M. (2019). The effect of financial literacy towards financial inclusion through financial training. *International journal of social sciences and humanities*, *3*(1), 186-192.

Bongomin, G. O. C., Ntayi, J. M., Munene, J. C., & Nabeta, I. N. (2016). Social capital: mediator of financial literacy and financial inclusion in rural Uganda. *Review of International Business and Strategy*, *26*(2), 291-312.

Dai, R. M., Kostini, N., & Tresna, P. W. (2019). Pengaruh behavioral finance terhadap kinerja keuangan pelaku usaha kecil menengah unggulan di kota cimahi. *AdBispreneur: Jurnal Pemikiran dan Penelitian Administrasi Bisnis dan Kewirausahaan*, *4*(1), 57-62.

Dermawan, T. (2019). *Pengaruh Literasi, Inklusi Dan Pengelolaan Keuangan Terhadap Kinerja Dan Keberlanjutan UMKM (Studi Pada Pelaku Usaha Mikro Mahasiswa Universitas Brawijaya)* (Doctoral dissertation, Universitas Brawijaya).

Fitria, I., Soejono, F., & Tyra, M. J. (2021). Literasi keuangan, sikap keuangan dan perilaku keuangan dan kinerja UMKM. *Journal of Business and Banking*, *11*(1), 1-15.

Hair, J. F., Sarstedt, M., Ringle, C. M., & Mena, J. A. (2012). An assessment of the use of partial least squares structural equation modeling in marketing research. *Journal of the academy of marketing science*, *40*, 414-433.

Hamzah, A., & Suhardi, D. (2019). Tingkat Literasi Keuangan Dan Financial Technology Pada Pelaku Usaha Mikro, Kecil, Dan Menengah (UMKM) Kabupaten Kuningan. *Jurnal Ilmiah Manajemen Fakultas Ekonomi*, *5*(2), 97-108.

Herdjiono, M. V. I., & Damanik, L. A. (2016). Pengaruh financial attitude, financial knowledge, parental income terhadap financial management behavior. *Jurnal Manajemen Teori dan Terapan*, *9*(3), 226-241.

Khin, S., & Ho, T. C. (2018). Digital technology, digital capability and organizational performance: A mediating role of digital innovation. *International Journal of Innovation Science*, *11*(2), 177-195.

Kogilah, N., Devinaga, R., & Tan, T. M. (2011). The adoption and concerns of e-finance in Malaysia. *Electron. Commercial Research*, *11*(4), 383-400.

Kumalasari, B., & Asandimitra, N. (2019). Faktor-faktor yang mempengaruhi kinerja UMKM di Kabupaten Bojonegoro. *Jurnal Ilmu Manajemen, 7*(3).

Kusumadewi, R. N. (2017, November). Pengaruh Locus of Control Dan Financial Literacy Terhadap Kinerja UKM Pada Pelaku UKM Desa Rawa Kecamatan Cingambul Kabupaten Majalengka. *In Prosiding Seminar Nasional LPPM Unsoed, 7*(1).

Luo, Y., & Zeng, L. (2020). Digital financial capabilities and household entrepreneurship. *Economic and Political Studies*, *8*(2), 165-202.

Lusardi, A.& Mitchell, O. S. (2013). The Economic Importance of Financial Literacy: Theory And Evidence. NBER Working Paper No. 18952.

Meuris, J., & Leana, C. (2018). The price of financial precarity: Organizational costs of employees' financial concerns. *Organization Science*, *29*(3), 398-417.

Nasiri, M., Ukko, J., Saunila, M., Rantala, T., & Rantanen, H. (2020). Digital-related capabilities and financial performance: the mediating effect of performance measurement systems. *Technology Analysis & Strategic Management*, *32*(12), 1393-1406.

Ningsih, A. W., Shara, A. M., & Andriani, D. (2021). Reading Duration And Financial Literacy In Vocational High School. *Jurnal Education and Development*, *9*(1), 577-577.

Nugroho, A. (2022). Pengaruh Literasi Keuangan Dan Sikap Keuangan Terhadap Kinerja Manajemen Keuangan Umk: Studi Pelaku Usaha Mikro Bidang Kuliner di Kota Surabaya. *GEMAH RIPAH: Jurnal Bisnis*, *2*(02), 1-15.

Prasetya, A., Rahardjo, K., Mawardi, M. K., Hidayat, R. R., & Prakasa, Y. (2021). The mediation role of financial literation in ensuring MSMEs sustainability: An organizational characteristics perspective. *JEMA: Jurnal Ilmiah Bidang Akuntansi Dan Manajemen*, *18*(1), 61-79.

Ratnawati, K. (2020). The influence of financial inclusion on MSMEs' performance through financial intermediation and access to capital. *The Journal of Asian Finance, Economics and Business (JAFEB)*, *7*(11), 205-218.

Riyadi, S., & Arif, D. (2023). The effect of distribution strategy and price on buying decisions minimarkets in Surabaya City, Indonesia. *International Journal of Electronic Marketing and Retailing*, *14*(2), 225–235. https://doi.org/10.1504/IJEMR.2023.129913

Sanistasya, P. A., Rahardjo, K., & Iqbal, M. (2019). Pengaruh Literasi Keuangan dan Inklusi Keuangan Terhadap Kinerja Usaha Kecil di Kalimantan Timur. *Jurnal Economia*, *15*(1), 48-59.

Takaendengan, L. A. (2015). The influence of personal financial knowledge and personal financial attitude towards buying decision using credit card in Manado City. *Jurnal Berkala Ilmiah Efisiensi*, *15*(4).

Tambunan, T. T. (2011). Development of micro, small and medium enterprises and their constraints: A story from Indonesia. *Gadjah Mada International Journal of Business*, *13*(1), 21-43.

Tan, E., Kusumah, D. H., & Damanik, A. (2021). Impresi e-Payment dan Niat Berperilaku Baru Bagi Pemanfaatan Inklusi Keuangan Digital UMK. *Jurnal Pengembangan Wiraswasta*, *23*(3), 163-174.

Williams, F. L., Haldeman, V., & Cramer, S. (1996). Financial concerns and productivity. *Journal of Financial Counseling and Planning*, *7*, 147.

Xue, R., Gepp, A., O'Neill, T. J., Stern, S., & Vanstone, B. J. (2021). Financial literacy and financial strategies: The mediating role of financial concerns. *Australian Journal of Management*, *46*(3), 437-465.

Yanti, W. I. P. (2019), Pengaruh Inklusi Keuangan dan Literasi Keuangan Terhadap Kinerja UMKM di Kecamatan Moyo Utara, *Jurnal Manajemen dan Bisnis*, *2*. No.12019