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ENHANCING BUSINESS PERFORMANCE THROUGH DIGITAL FINANCIAL LITERACY: EVIDENCE FROM GORONTALO

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ABSTRACT

The digital financialization of Micro, Small, and Medium Enterprises (MSMEs) increases access to information and facilitates resource management. During the pandemic, there was a significant surge in digital transactions, increasing sales of several products, with Gorontalo Province experiencing a 3.57% rise. This research investigates the impact of social factors on digital financial literacy and their influence on the performance of MSMEs. Conducted in Gorontalo City from March to July 2024, this research employed an explanatory approach, focusing on the founders of MSMEs, specifically 50 individuals who served as respondents. Primary data was collected through structured interviews using questionnaires. The analysis utilized Structural Equation Modeling-Partial Least Squares (SEM-PLS), supported by Smart-PLS 3.0 software. The findings reveal that social factors significantly influence digital financial literacy, although they do not directly affect MSMEs' performance. Digital technology, however, has a significant impact on MSMEs' performance and mediates the relationship between social factors and performance. Despite these advancements, many MSME actors lack proper financial management practices, such as recording daily cash inflows and outflows, limiting their financial awareness. Targeted financial education programs are essential and include hands-on training on the use of financial management applications for tracking income and expenses. Furthermore, collaborations with financial institutions, fintech platforms, and e-commerce providers can facilitate training in digital financial tools and services. Although participation in such initiatives is currently limited, institutions like Bank Indonesia can scale up efforts to develop model MSMEs that inspire broader adoption of digital financial practices among other enterprises.

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INTRODUCTION

The MSMEs (Micro, Small, and Medium Enterprises) sector plays a crucial role in the Indonesian economy. This is supported by the findings of a study conducted by the Financial Services Agency (Financial Services Authority/Otoritas Jasa Keuangan, or OJK), which states that MSMEs account for the majority of jobs and play a crucial role in supporting economic growth, particularly in overcoming challenges such as financial crises or pandemics. This sector nevertheless encounters a range of challenges, such as restricted access to financial resources, limited technological literacy, and insufficient ability to leverage emerging digital opportunities (OJK, 2017). These conditions highlight that MSMEs play a crucial role in local economic growth, contributing not only to employment generation but also to the empowerment of vulnerable groups, including women, young people, and low-income populations (AlFarisi et al., 2022).

Amid the 1998 monetary turmoil, the MSME sector demonstrated strong adaptability, and a comparable pattern reappeared during the COVID-19 crisis. Yet, the pandemic led numerous MSMEs to face reduced revenues, obstacles in handling cash flow, and difficulties fulfilling production requirements, which in turn caused losses and even shutdowns. Levels of financial capability were also influenced. The study by Baiq & Khoirunnisa (2020) indicates that MSMEs able to remain operational were those that embraced digital technologies and adapted swiftly, especially by shifting their activities from conventional offline practices to online platforms. The primary objective of this research is to investigate the impact of digital financial literacy and information technology use on the ability of micro and small enterprises (MSMEs) to adapt and survive during a crisis (Fiona & Rahmayanti, 2022).

Although the COVID-19 pandemic presents various challenges for MSMEs, it also opens up new opportunities. Business actors can leverage information and communication technology, particularly with the rise of electronic commerce. During the pandemic, a significant surge in digital transactions occurred, resulting in increased sales of various products (Amri, 2020). According to data from the Ministry of Cooperatives and SMEs' research (Putra, 2023), the number of digital transactions in 2020 increased drastically to reach US$130 billion, demonstrating the vast potential for the digitalisation of MSMEs. According to Central bureau of statistics of Gorontalo province (2020), Gorontalo province experienced an increase in digital transactions of 3.57%. Food and beverage products are categories whose sales have soared during the pandemic. Therefore, digital financial literacy is a solution for business actors to increase sales efforts.

All types of businesses require a solid development strategy, which must involve various elements, both large and small (Lantowa et al., 2023). One effective strategy to maintain and improve a product's position is the development of successful innovations. However, in the face of external factors, actors must continue to innovate in order to remain competitive. Several studies, such as those conducted by Wijaya & Simamora (2022); Rozinah & Meiriki (2020); Susilo et al. (2021), highlight the importance of implementing technology in product development. The ability of a business to adapt to technological developments, as observed in these studies, can be a crucial factor in determining the success or failure of a business.

MSMEs have a unique approach to management. Some of the principles applied there refer to the principle of family. The negative side may occur, which can affect the performance of MSMEs. A small example of the problem is the withdrawal of personal funds and the recording of cash. If it is not recorded and understood clearly, this can be detrimental to micro, small, and medium enterprises (MSMEs). Therefore, the importance of financial digitalization in MSMEs to help improve MSME performance is crucial. The government must also provide socialization or training on digitalization to MSME actors, as not all MSME actors are supported by BNI Bank. This digitalization is a strategic step to ensure that MSMEs can compete in the digital economy and achieve better business sustainability (Agustin et al., 2023).

Rapid technological advances today have resulted in easily accessible information, making it easier to manage power sources effectively and efficiently (Wardani & Darmawan, 2020). Technological advances have changed the needs of society for payment methods and security in all transactions because business actors who used to shop using cash mostly now know and use E-money payments, or digital payments, as a means of payment (Ummah, 2019).

The development of fintech has brought numerous application innovations to financial services (Sugiarti et al., 2019). Therefore, the importance of fintech (digital finance) and MSMEs in accelerating national economic recovery is increasing. Digital financial literacy can increase consumer satisfaction when MSMEs offer a safe and efficient transaction experience through digital platforms, thereby strengthening brand loyalty. Therefore, MSMEs have a very big opportunity to develop in the digital era (Ziółkowska, 2021). However, to compete effectively, MSMEs need to master the use of digital devices and relevant technologies (Purwana et al., 2017).

Based on data from the Gorontalo Province Manpower, Cooperatives, and MSMEs Office, the number of MSMEs in Gorontalo City until this year, 2021, reached 12,892 businesses. However, the number of MSMEs in Gorontalo City has not significantly increased. Therefore, the performance of MSMEs in Gorontalo City still needs to be developed further (Central bureau of statistics of Gorontalo city, 2020)

The digitalization of finance for MSMEs must be balanced with good financial literacy. While technological advancements support the improvement of MSME performance, a strong grasp of financial concepts is essential for making sound business choices. According to the Central bureau of statistics of Gorontalo city (2020), multiple factors shape the comprehension of digital finance. Rahayu (2022) highlights that the personal traits of individuals play a crucial role in determining their financial literacy. It is frequently emphasized that socio-economic variables, such as age, educational background, and working time, influence many dimensions of life, including how MSMEs manage digital-based finances.

This study seeks to examine the effect of social aspects on digital financial literacy among Micro, Small, and Medium Enterprises (MSMEs) in Gorontalo City. Insufficient understanding of digital finance among business owners can hinder their capacity to handle financial matters effectively (Anggraeni, 2016). This is reflected in the practices of entrepreneurs who continue relying on manual bookkeeping and avoid the use of technology or neglect to keep essential supporting records. Mastery of digital finance allows MSMEs to control financial risks more effectively, thereby

enhancing their competitiveness and overall performance in the dynamic market environment of Gorontalo City.

While prior studies have examined financial literacy in a broad sense, few have explored how social dimensions, such as age, educational attainment, and professional experience affect the level of digital financial literacy among MSMEs, particularly in Gorontalo City. Hence, this study seeks to address this gap by offering deeper insights into the role of social attributes in shaping the capacity of micro and small enterprises (MSEs) to manage digital-based finance. The findings are expected to enrich the body of knowledge on digital financial literacy and provide practical recommendations for policies and initiatives aimed at strengthening digital financial competence among MSMEs, especially within Gorontalo City.

RESEARCH METHOD

Time and Research Site

The study was carried out in 2024 in Gorontalo City, with the site chosen due to its considerable economic growth prospects and the distinctive forms of MSMEs emerging in the area. At present, Gorontalo City hosts 14,507 Micro, Small, and Medium Enterprises (MSMEs) (Central bureau of statistics of Gorontalo city, 2020).

Sampling Techniques

This research applies a non-probability sampling approach using the total sampling method, since the population under investigation is relatively limited, consisting of only 50 MSMEs in Gorontalo City that fulfill the study's criteria. With such a limited population, this method allows all members to participate, ensuring that each contributes directly to the data collected. Although non-probability sampling does not permit broad generalisation, it is highly relevant for exploratory research aimed at gaining an in-depth understanding of specific phenomena. The total sampling approach is also considered suitable because it aligns with the data analysis technique used, namely Partial Least Squares Structural Equation Modelling (PLS-SEM). According to the general rule in PLS-SEM, if the construct with the highest number of indicators consists of five, then a minimum of 50 respondents is required. Several studies, such as Wicaksono (2022), have also applied the total sampling method when dealing with small populations to capture comprehensive insights from all eligible business units.

To ensure that the limited sample size still produces reliable results, a power analysis can be applied. This analysis helps determine whether the sample is sufficient to achieve the desired statistical significance level (e.g., 0.05). Although the number of respondents is small, power analysis supports the adequacy of 50 samples in producing valid results, particularly when examining phenomena at a micro scale. This is consistent with findings from Susanto & Sukarno (2021), who employed the same analytical method with 50 respondents and obtained strong validity, thereby reinforcing the credibility of this study's results.

The data used are primary data, collected through questionnaires distributed to MSME owners. The survey was designed to measure digital financial literacy and its influencing factors, such as age, length of business operation, and social environment. The responses were then analysed using multiple regression with

SmartPLS software to test the structural model and explore the relationships between variables more comprehensively.

Data Analysis Method

The data analysis in this study is intended to explain the connections and effects among the examined variables based on hypothesis testing outcomes. During the analytical process, some variables were omitted, particularly indicators with weak factor loadings. These indicators were deemed less suitable for representing the variables being studied; therefore, they were excluded to uphold the validity and reliability of the findings. This step was taken following validity and reliability assessments conducted on each indicator used in the measurement process. Once the indicators that did not comply with the standards were removed, the valid data were applied to examine the proposed hypotheses. Consequently, the analysis results provide a clearer and more accurate understanding of the interrelations among the factors influencing digital financial management and business performance of MSMEs in Gorontalo city.

The Partial Least Squares Structural Equation Modelling (PLS-SEM) technique was selected in this research as it is viewed as the most suitable method for the nature of the data and the aims of the study. The goals of this research are both exploratory and predictive. The main emphasis is on examining and forecasting the linkages between social factors, digital financial literacy, and the performance of MSMEs. PLS-SEM is highly appropriate for prediction-oriented models. This research incorporates several latent constructs (including MSME performance, digital financial literacy, and social factors), each of which is assessed through multiple indicators. PLS-SEM is specifically designed to address complex frameworks, particularly those involving numerous indicators and inter-variable connections.

In this study, several variables were removed, particularly indicators with weak factor loadings. Weak factor loadings suggest that the indicator has a lower association with the constructs intended in the model, which may influence the overall accuracy of the analysis results. To maintain the validity and reliability of the model, indicators with factor loadings below a certain threshold value (e.g., 0.05 or according to established benchmarks) were excluded from subsequent testing. A commonly applied criterion for evaluating factor loadings is 0.07.

This process is carried out to enhance the reliability and precision of the model applied in multiple regression analysis. The method is used to measure the degree of influence of independent variables on the dependent variable, employing the t-test, F-test, and coefficient of determination as part of the evaluation. Once indicators with weak factor loadings are removed, the remaining valid and representative data are utilized to examine the proposed hypotheses, ensuring that the findings deliver a clearer and more accurate depiction of the relationships among the variables under study.

Variable Measurement

This research utilizes one dependent variable along with several independent variables, each assessed through indicators adapted from earlier studies. The measurement of variables is conducted using a five-point Likert scale, with response options ranging from "strongly disagree" to "strongly agree," except for numerical variables such as age and business duration, which are evaluated using a ratio scale. The digital financial literacy variable is defined as the capability of MSME owners to comprehend, access, and apply digital financial services effectively and securely. This construct is measured through indicators such as knowledge of digital services, proficiency in using financial applications, and confidence in the safety of digital transactions. The age variable refers to the respondent's age in years, measured using a ratio scale. The length of business refers to the duration the company has been operating since it was founded, also measured in years. Individual environmental variables include social factors that influence the use of digital financial services, which are measured through indicators such as family support, encouragement from business partners, availability of information related to digital finance, and social norms that support the implementation of technology.

The individual attitude variable refers to the perception and readiness of MSME actors towards the use of digital financial services. The indicators include a positive view of the benefits of financial digitalization, interest in continuing to use digital services, belief that digital technology can improve business efficiency, and openness to technological change. One of the steps taken is to evaluate the factor loading of each indicator. Factor loading is a measure that indicates the strength of the relationship between the indicator and the construct or factor being measured. Indicators with low factor loadings (for example, below 0.5 or 0.7, according to accepted standards) are considered insufficient to describe the construct being measured, thereby reducing the overall quality of the research model. If an indicator has a low factor loading, it is excluded from further analysis. For example, the education and environment social factor variables have lower values, specifically below 0.5, and the government support for the digital financial literacy variable also has a value below 0.5. These indicators are considered insufficient to accurately describe the construct being measured, so they are removed from the measurement model.

Based on the estimation results of the measurement model using the SmartPLS program, it was found that several variables and indicators did not meet the technical criteria and validity required for the outer model test. The evaluation was carried out through the analysis of the Composite Reliability (CR) value and the clarity of technical indicators to respondents. Indicators with low Composite Reliability values, such as Education (X2) (CR = 0.240) and Government Support (Z2) (CR = 0.289), were excluded because their contribution was not significant to the construct being measured. In addition, indicators that are technical or difficult for respondents to understand, such as Environment (X5) (CR = 0.420), were also removed to enhance the model's quality. The customer satisfaction indicator (Y5) was also removed because only truly significant and relevant indicators were retained to provide more accurate and accountable results.

Table 1. Variable Measurements

Variable	Composite Reliability
Age (X1)	0.540
Education (X2)	0.240
Business Duration (X3)	0.877
Individual Motivation and Attitude (X4)	0.920
Environment (X5)	0.420
Skills (Z1)	0.612
Government Support (Z2)	0.289
Digital Transaction Experience (Z3)	0.774
Awareness of Security and Risks (Z4)	0.776
Financial Technology Literacy (Z5)	0.645
Business Type (Y1)	0.619
Investment Ratio (Y2)	0.694
BOPO Ratio (Y3)	0.819
Managing Team (Y4)	0.714
Customer Satisfaction (Y5)	0.432

To measure social factors, this study utilises the following indicators: age, education, and business duration (Aziz, 2016). Individual motivation and attitude (Hanum & Sinarasri, 2017), environment (Purwana et al., 2017) then to measure the digital financial literacy variable using the following indicators: skills (Asiva, 2015) government support, digital transaction experience (Asiva, 2015), awareness of security and risk, financial technology literacy (Fisabilillah et al., 2021), to measure the performance variables of MSMEs, type of business (Malikun & Mulyono, 2018), OI investment ratio, BOPO ratio (Mawuntu & Aotama, 2022). Management team (Firyal & Nugraha, 2022) customer satisfaction social Factors (X) → Digital Financial Literacy (Z) → MSME Business Performance (Y) (As well as a direct path: X → Y)

Table 2. List of Variables and Indicators Used in a Study

Observed variables	Indicators and their measurements	Reference
Social Factors (X)	Age (X1) Education (X2 Length of business (X3) Individual Motivation and Attitude (X4) Environment (X5)	(Jasmine, 2014) (Hanum & Sinarasri, 2017) (Purwana et al., 2017)
Digital Financial Literacy (Z)	Skills (Z1) Government support (Z2) Digital transaction experience (Z3) Awareness of security and risk (Z4) Financial technology literacy (Z5)	(Asiva, 2015) (Ajhari et al., 2023) (Fisabilillah et al., 2021)

Observed variables	Indicators and their measurements	Reference
MSME Performance	Type of business (Y1) ROI investment ratio (Y2) BOPO Ratio (Y3) Manage team (Y4) Customer satisfaction (Y5)	(Malikun & Mulyono, 2018) (Mawuntu & Aotama, 2022) (Firyal & Nugraha, 2022)

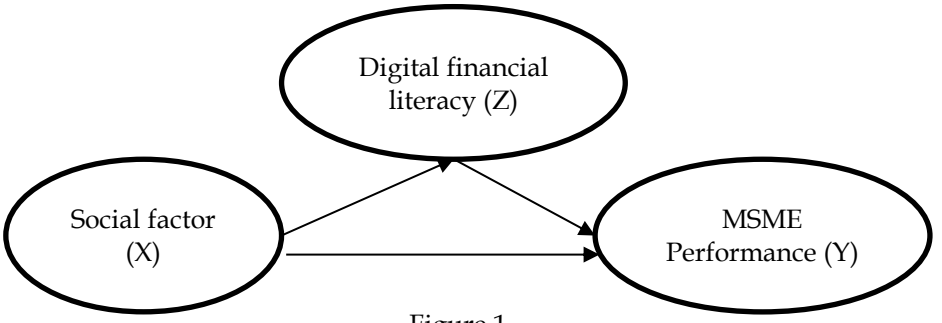

Figure 1.
Model of MSME Performance

This study investigates the relationship between social factors (X), digital financial literacy (Z), and the performance of micro and small enterprises (MSMEs) (Y). Social factors, such as age, education level, and business duration, play a role in shaping the ability of MSME owners to adopt digital financial technology. Digital financial literacy, as a mediating variable, includes understanding, skills, and use of digital tools in financial management. This literacy enhances operational efficiency, access to financial services, and informed decision-making, ultimately contributing to improved business performance. The relationship between variables is formulated as follows: Social factors influence digital financial literacy, which in turn impacts the performance of MSMEs. Digital financial literacy serves as a crucial bridge between social factors and business performance. Simple diagram:
Social Factors (X1) → Digital Financial Literacy (Z) → MSME Business Performance (Y) (As well as a direct path: X → Y)

RESULT AND DISCUSSION

General Description of Respondents

The respondent's identity or personal data includes sex, city of origin, occupation, and level of education. Farizah (2022) the characteristics of the respondents in this study include age, education, and sex.

Table 3. shows that most respondents in this study were women. The dominance of women in micro, small, and medium-sized enterprises (MSMEs) underscores the significant role women play in supporting their local economies. This aligns with the national trend, where women are increasingly active in the informal sector, particularly in the home-based business sector.

The implications of this finding suggest that MSME empowerment and training programs should consider approaches that align with the needs and roles of women as primary business actors. The type of business most engaged in by

respondents is the culinary business, such as chips and packaged drinks. This indicates that the culinary sector is one of the most easily accessible and manageable sectors for MSMEs, as it requires relatively small capital, affordable skills, and stable market demand.

Table 3. Respondent Demographic Information

Demographic Items	n	%
Age		
20 – 30 years	18	36
31 – 40 years	15	30
41 – 50 years	11	22
50 years	6	12
Education		
Elementary school	1	2
Senior High School	20	60
Bachelor	17	34
Diploma	2	2
Sex		
Woman	39	88
Man	11	12
Type of business (non-agriculture)		
Social media	3	6
Trade	2	2
Culinary (agriculture)	43	90
Income		
<10,000,000	14	28
>10,000,000 – <50,000,000	29	58
>50,000,000 – <100,000,000	7	14

Therefore, interventions such as product innovation training, packaging, and digital marketing are crucial for increasing the competitiveness of this culinary business. In terms of education, most MSME actors are high school graduates. Interestingly, despite their education level being classified as middle, many of them have managed to earn high incomes, ranging from IDR 10,000,000.00 to IDR 50,000,000.00 per month. This suggests that success in running an MSME business is not solely determined by a formal educational background but rather by experience, practical skills, and the adaptation of abilities to the market and digital technology. The majority of respondents were aged between 20 and 30 years, which reflects that MSME entrepreneurs are getting younger. This presents an excellent opportunity for the development of technology-based MSMEs, as the younger generation is generally more familiar with digital technology. Therefore, digital literacy programs and the application of financial technology (fintech) will be more easily accepted and implemented by this age group.

Evaluation of Measurement Model

The method of measurement involves evaluating convergent and discriminant validity through verification. However, convergent validity is analyzed by testing the loading value of each indicator element. Furthermore, inferential analysis uses the SEM and PLS approaches. This can be verified by examining the standard value of the external loading factor. The standardized external coefficient represents the comparative value between the indicator and the latent variable. The external loading factor's value can be ideal if it is greater than 0.7. Additionally, the value of the external loading factor, which exceeds 0.5, can be considered valid (Juni, 2021).

Based on the test results, Cronbach's alpha coefficient is used to determine the reliability of each core variable in the measurement model. The results showed that all values obtained ranged from 0.5 to 0.8, greater than the ideal standard except for indicators X2, X5, and Z2 and Y5, which were removed from the scale due to differentiators or <0.5. In addition, to examine the consistency of the variables, the overall reliability index value ranged from 0.797 to 0.833 (all > 0.7). This indicates that the construct reliability is met, as in Table 3 above. Therefore, the CA value and CRI value for all variables are consistent and error-free.

Table 4. Results of Validity and Reliability Testing

Observed Variables	Measurement Indicators	Auto Loading (>05 – 07)	Conclusion
Social factors (X)	Age (X1)	0.540	Valid
AVE = 0.636	Education (X2)	0.240	Invalid/Deleted
CA = 0.701	Length of business (X3)	0.877	Valid
CRI = 0.833	Individual (X4)	0.920	Valid
	Environment (X5)	0.420	Invalid/Deleted
Digital financial literacy (Z)	Skills (Z1)	0.612	Valid
AVE = 0.0498	Government support (Z2)	0.289	Invalid/Deleted
CA = 0.664	Digital transaction experience (Z3)	0.774	Valid
CRI = 0.797	Awareness of security and risk (Z4)	0.776	Valid
	Financial technology literacy (Z5)	0.645	Valid
MSME performance	Type of business (Y1)	0.619	Valid
AVE = 0.511	ROI investment ratio (Y2)	0.694	Valid
CA = 0.679	BOPO Ratio (Y3)	0.819	Valid
CRI = 0.806	Management team (Y4)	0.714	Valid
	Customer satisfaction (Y5)	0.432	Invalid/Deleted

Note:

AVE = Average variance extracted; CA = Cronbach's Alpha; CRI = Composite reliability index; All factor loadings of each indicator are statistically significant >0.5 except for indicators, X2, X5 and Z2 and Y5 which are removed from the scale due to differences or <0.5

Table 4 presents the results of the Validity and Reliability Testing. As stated above, in the Partial Least Squares-based Structural Equation Modeling (SEM-PLS) model, validity and reliability testing are crucial steps to ensure the quality and reliability of the measurement instrument. Validity aims to assess whether the indicators accurately reflect the construct being measured (Hair et al., 2017).

Convergent Validity

Convergent validity is used to determine whether the indicators used for research are valid and can be used as data for testing.

Table 5. Convergent Validity Based on AVE Value

Variable	Table Average Variance Extracted (Ave)	Valid
Social Factors	0.636	Valid
Digital Financial Literacy	0.498	Invalid
MSME Performance	0.511	Valid

The social factor construct records an Average Variance Extracted (AVE) value of 0.636, reflecting strong convergent validity since it surpasses the recommended minimum threshold of 0.5 (Hair et al., 2021). his suggests that the indicators employed to assess social factors consistently account for more than 63% of the variance in the construct. In comparison, the business performance construct achieves an AVE of 0.511, which, although only slightly higher than the 0.5 benchmark, still satisfies the minimum criteria for convergent validity. This implies that the indicators in the business performance construct are sufficiently able to explain the variance within the construct, even though the explanatory power is not as strong as in the social factor construct. Conversely, the digital financial literacy construct reports an AVE of 0.498, which falls marginally below the 0.5 standard. This indicates that the convergent validity of this construct has not been fully achieved, as the proportion of variance explained by its indicators remains relatively limited. Nonetheless, since the AVE value is close to 0.5, several scholars argue that it may still be accepted in exploratory studies, provided it is reinforced by a high composite reliability (CR) score.

Discriminant Validity

This test is based on the cross-loading between the indicators and the latent variables.

Table 6. Validity, Discriminant, and Cronbach's Alpha

Variable	Social Factors (X)	MSME Performance (Y)	Digital Financial Literacy (Z)
Social Factors (X)	0.797		
MSME Performance (Y)	0.311	0.715	
Digital Financial Literacy (Z)	0.570	0.683	0.760

Social factors (X) influence digital financial literacy, with a line coefficient value of 0.570, indicating that individual social conditions, such as age, education,

business experience, and social environment, play a role in enhancing the understanding of digital finance. However, the direct influence of social factors on business performance is relatively weak, with a coefficient of only 0.311. This suggests that although social factors contribute to aspects of business operations, their influence is not dominant unless accompanied by adequate digital literacy skills. On the other hand, digital financial literacy has a strong and significant influence on business performance, with a line coefficient value of 0.683. This finding suggests that the higher the understanding of MSME actors regarding digital financial technology, such as the use of digital payment applications, electronic financial records, or blockchain financial platforms, the greater their ability to manage and develop their businesses. Thus, digital financial literacy acts as a mediating variable that bridges the relationship between social factors and business performance. The indirect influence of social factors on business performance through digital financial literacy emphasizes the importance of increasing digital capacity among MSME actors. This means that to achieve increased business performance, social empowerment efforts must focus on improving digital capabilities, not just the social aspect alone.

Composite Reliability and Cronbach's Alpha

The reliability of the construct is tested by looking at the value of the composite on the construct. The minimum limit accepted is >0.5.

Table 7. Composite Reliability and Cronbach's Alpha

Konstruk	Composite Reliability	Cronbach's Alpha
Social Factors (X)	0.701	0.833
MSME Performance (Y)	0.679	0.806
Digital Financial Literacy (Z)	0.664	0.797

Based on the PLS method, the reliability of the research indicator is determined from the composite reliability value, which must be greater than > 0.5, and the Cronbach's Alpha value must be greater than 0.6. Based on the results of the reliability analysis, the value is good.

Hypothesis Testing Results

To analyse the influence of variables in a research model, we must know that Partial Least Squares Structural Equation Modelling (PLS-SEM) was performed using SmartPLS 3.0. Based on the bootstrapping testing procedure on PLS 3.0 software, the following findings can be obtained. Regression hypothesis testing is carried out either through direct influence or through mediation (indirect influence).

Figure 2 illustrates a structural model that shows the relationship between social factors, digital financial literacy, and their impact on business performance. According to this picture, digital financial literacy has a strong influence on MSMEs performance, with a path coefficient value of 0.749, indicating a significant positive relationship between the two. On the other hand, the influence of social factors on digital financial literacy and business performance is weaker, with path coefficient values of -0.116 and 0.570, respectively. This suggests that social factors may not have a direct impact on improving digital financial literacy or business performance.

Table 8 confirms these findings, with the smallest path coefficient value for the relationship between social factors and business performance, which is mediated by digital financial literacy (value 0.427). These results indicate that although social factors influence other variables, their impact on business performance is significantly influenced by digital financial literacy.

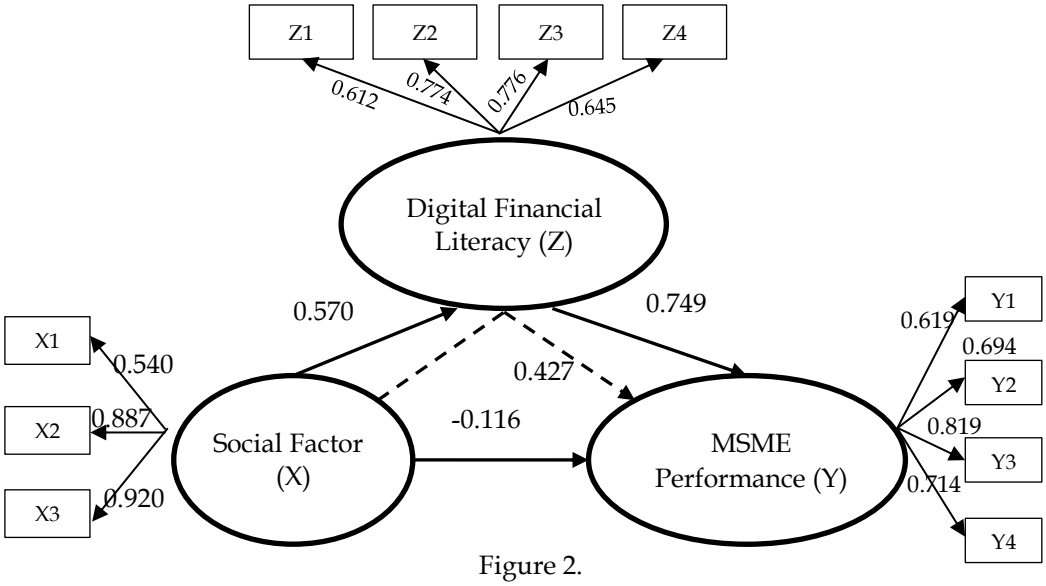

Figure 2.
Full Structural Model–Business Performance through Digital Financial Literacy

Hypothesis Testing

The hypothesis testing stage is a crucial step in quantitative research, as it serves to verify the relationship between variables that have been previously formulated in the form of a hypothesis. In this study, statistical testing was applied to evaluate the magnitude and significance of the relationships among variables, both direct and indirect. The sample analysis was carried out to assess the direct effect of the independent variable (X) on the mediating variable (Z), as well as the indirect impact of X on the dependent variable (Y) through the mediating variable Z. The test results are displayed through the original sample value, T-statistic, and P-value, which serve as the basis for determining whether the hypothesis is accepted or rejected. The following are the test results that have been obtained:

Table 8. Hypothesis Testing

Track	Original sample	T static	P value	Information
(X→Z)	0.570	4.994	0.000	Accepted
(Z→Y)	0.749	6,460	0.000	Accepted
(X→Y)	-0.116	0.746	0.456	Rejected
(X→Z→Y)	0.427	3.693	0.000	Accepted

The next step is to use the table above to check and analyze whether each hypothesis is confirmed. To test the hypothesis, we compare the t-count with the t-table. The hypothesis is confirmed if the t-count is greater than the t-table value; conversely, the hypothesis is rejected if the t-count is less than or equal to the t-table value. (Usmadi, 2020) his study uses significance (2-tailed), the significance level is 5%, and the value of the t-table is 2.0085.

The Influence of Social Factors (X) on Digital Financial Knowledge (Z)

It is known that the first hypothesis is that social factors have a positive and significant influence on digital financial literacy. This is indicated by the parameter coefficient of 0.570. From the results of data processing (path coefficients), the t-count value was obtained at 4.994 (greater than the t-table (2.0085) with a P value of 0.000 (less than 0.05), factors that influence digital financial literacy are social factors (age, education and length of business), and other factors are individuals. The environment, thus the hypothesis, can be accepted. These findings align with those of Hanum & Sinarasri (2017), who state that both individuals and the environment influence digital financial literacy. If a person's level is high, they are more accustomed to operating or adapting to technology. The social environment is also a significant factor that has a substantial influence.

Another factor is the length of time the business has been in operation, which can impact a person's financial literacy. The longer the business has been established, the more experience the business actor has (Sembiring & Leon, 2021). It revealed that the age factor has a positive effect on financial literacy. This is because individuals of higher age tend to collect more information regarding financial literacy. However, this differs from the research findings presented by Azikin et al., (2023), which suggest that neither the length of business nor age has a significant impact on financial literacy. In addition, the education variable is not significant in digital financial literacy; they concluded that formal education does not have a significant influence on the knowledge of MSME digitalization.

The Digital Financial Literacy (Z) Influence on The Performance of MSMEs (Y)

The second hypothesis is known, which states that digital financial literacy influences the performance of MSMEs, as evidenced by the test results, which show a value of 0.749. From the data analysis, it was determined that the calculated t-value was 6.460, which was greater than the t-table value (2.0085), and the P-value was 0.000, which was smaller than 0.05. Thus, this hypothesis can be proven. Knowledge about digital greatly influences business performance because it can increase the efficiency of financial management and expand market reach through digital platforms. Apart from that, digital financial iteration also enables better financial risk management and increases the competitiveness of MSMEs in meeting market demands, such as the increasing adoption of non-cash payment methods. Consumers are interested in. With adequate literacy, they are also able to understand and utilise government programs or other institutions that support digital financing, such as MSMEs, which are developed directly by BI (Bank Indonesia), as some of the MSMEs studied are already under the auspices of Bank Indonesia.

The results of this research align with those of Asiva (2015), who found that "Digital knowledge has a significant effect on business performance." This indicates that entrepreneurs are not only aware of digital payments but also reap profits by

intensively integrating digital literacy into their daily activities. , such as advertising and marketing activities through digital media. Meanwhile, research (Anggriani, 2023) states that digital financial literacy does not affect the performance of MSMEs. This is because MSMEs often lack the knowledge and skills necessary for competent financial literacy, which prevents them from making informed business decisions or developing effective financial plans to enhance their business capabilities.

Social factors (Y) do not influence the performance of MSMEs (Y)

It is known that the third hypothesis in this research, which states that social factors do not influence the performance of MSMEs, is supported by the results of data analysis with a parameter coefficient of -0.116, a t-count value of 0.749 (smaller than the t-table of 2.0085), and a P value of 0.456 (greater than 0.05). Namely, social factors such as age and business length, as well as individual motivation, do not always have a significant impact on MSME performance, as other factors, including managerial ability, access to technology, and marketing strategy, also influence performance. These results are in line with research by (Fitriani & Arijanto, 2021), which found that the age of business actors does not affect performance if they already understand digital financial literacy, as well as research by (Melania & Sofyan, 2023), which states that the length of business does not always correlate with increased performance or income. Since the duration of a business's operation does not directly impact its performance, research by Helmawati et al. (2017) indicates that the influence of individual motivation and attitude on performance in MSMEs is not significant.

These findings suggest that although MSMEs have a strong drive to work hard, this motivation is not necessarily sufficient to enhance their business performance. MSME actors may face limitations that cannot be overcome simply by motivation or a positive attitude. For example, the limitations of modern technology or an extensive marketing network; however, this is different from research results (Wastuti et al., 2021), which reveal that social factors such as age, length of business and work motivation influence the performance of MSME businesses, which states that those aged around 30 years are both productive and consumptive in the market. Dynamic enough to easily absorb information and technology. Then, the length of time this business takes has a significant influence on its success, as experience gained increases, allowing strategies, knowledge, and skills to mature. Individual motivation and attitudes are essential because motivation is something that can drive, channel, and support someone to work hard.

Social Factors (X) do not Directly Have a Significant Impact on MSME Performance (Y)

H4 analysis, with a parameter value of 0.427, yields a calculated t-value of 3.693 (larger than the t-table value) and a p-value of 0.000 (smaller than 0.05), indicating that social factors do not have a direct and significant impact on variable Y. However, The positive influence occurs through the mediating variable, namely variable Z. This means that social factors provide an initial influence, which is then processed or translated through specific mechanisms (which are represented by variable Z) so that they ultimately have a significant impact on variable Y. Factors Social factors such as age, length of business, and individual motivation contribute to the performance of MSMEs in Gorontalo. However, their influence becomes

significant only through the mediating role of variable Z, such as innovation or adoption of digital technology. Age provides experience for older business actors and adaptability for younger ones, as they have long tried to increase their understanding of the market. Individual motivation drives business and commitment.

However, this contribution will not have a direct impact on performance if it is not mediated by the Z variable, which translates to the experience, understanding, and encouragement of applying technology, thereby significantly improving the performance of MSMEs.This research aligns with Hartanto (2022) study on the Influence of Social Media on MSME Performance and Innovation Capability as a mediating variable. The findings indicate that although social media can impact MSME performance, this influence becomes more pronounced when mediated by innovation capability or technology adoption. Social media provides opportunities for MSMEs to market products more widely and interact with customers, but to have a greater impact on performance, MSMEs need to turn these interactions into innovations in products, services, or marketing strategies. Innovation capability acts as a mediating variable that links the potential generated from social media to strategic actions that increase competitiveness and business efficiency.

Although social factors continue to contribute to MSME performance, their impact becomes significant and direct only when mediated by more strategic variables, such as innovation, technology adoption, or changes in business strategy. In the absence of such mediators, social factors alone may be insufficient to enhance MSME outcomes.

This study reveals that social aspects, including age and business longevity, do not exert a significant impact on MSME performance. These findings imply that although older or more established enterprises possess extensive experience, they continue to encounter obstacles in boosting performance if not reinforced by technological adoption (Fanani & Fitrayati, 2021).

CONCLUSION

This study concludes that social dimensions, including age, length of business operation, social context, and individual attributes, exert a positive and significant effect on the digital financial literacy of MSME actors in Gorontalo City. From a theoretical perspective, this outcome reinforces the idea that social dimensions play a crucial role in shaping individuals' readiness and capacity to embrace technology, particularly in financial practices. Age, duration of business, social context, and individual attributes collectively demonstrate a meaningful and positive influence on MSMEs' digital financial literacy. Theoretically, these results affirm that social aspects are central in fostering individuals' preparedness and ability to adopt innovations, especially in digital financial activities. Digital financial literacy is shaped not only through formal education or structured training but is also determined by entrepreneurial experience, social networks, and environmental support.

Accordingly, the theoretical contribution of this study lies in reinforcing the linkage between social attributes and technology adoption behaviour in the MSME setting, thereby expanding the scope of technology adoption and financial literacy theories. On a practical level, improving digital financial literacy has been shown to

enhance the efficiency and effectiveness of MSME operations, particularly in bookkeeping, digital transactions, and online platform-based marketing strategies. This advancement further drives business growth and profitability. Based on these insights, it is advised to establish educational and mentoring initiatives that integrate training in digital financial management, the use of financial applications, and e-commerce for product promotion.

Based on the findings, enhancing digital financial literacy is an urgent requirement for MSMEs to remain competitive in the digital age. Thus, a more focused and contextualized strategy is essential, taking into account the characteristics of MSMEs in the local area.

First, local authorities and training providers are encouraged to deliver capacity-building programs adapted to the unique needs of MSMEs. For instance, young business owners may benefit from digital interactive tools such as video tutorials and mobile-based applications, while in-person sessions tend to be more effective for older entrepreneurs. Start-up MSMEs should prioritise basic training in digital financial bookkeeping, whereas more mature MSMEs need guidance on e-commerce practices and digital payment integration.

Second, Second, the establishment of a digital MSME advisory hub (Digital Business Clinic) at the village or sub-district level is recommended, functioning as a platform for technical guidance and direct consultation on financial application selection, digital security, and online marketing strategies. This clinic can be collaboratively managed by cooperatives, universities, and local community organisations.

Third, collaborative strategies are also essential through commercial partnerships between MSMEs and local fintech or e-commerce companies. Fintech companies can offer specialised service packages, including low subscription fees, application training, and complimentary digital promotions. This can encourage the widespread and even adoption of technology among MSMEs.

Fourth, the government can also implement a community-based approach through the MSME Digital Champion program, which involves appointing business actors who have successfully implemented digital technology as mentors or training facilitators for other MSMEs in their area. This approach is participatory and can strengthen self-confidence and the spirit of learning among business actors.

AUTHOR CONTRIBUTION STATEMENT

All authors have made an equal contribution to the development of the research approach. [Author 1]: responsible for drafting the first conceptual ideas of the manuscript, research design, data analysis and discussion. [Author 2]: responsible for writing in the introduction, data collection, and managing online submissions of articles. [Author 3]: responsible for completing manuscripts, conclusion, and suggestions.

DECLARATION OF COMPETING INTEREST

The authors declared that no competing financial or conflicting interests influenced the completion and publication of this research.

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ETHIC STATEMENT

Ethical review and approval were deemed unnecessary for this study, as it involved no intervention and posed minimal risk to participants. Nonetheless, informed consent was obtained from all respondents prior to their involvement, and all collected data were anonymized and treated with strict confidentiality.

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