



Financial Literacy, Technology, and SME Performance in Indonesia: The Role of Financial Access

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Abstract. This study aims to analyze the role of financial literacy and technology on the performance of Small and Medium Enterprises (SMEs) in Indonesia, as well as explore the role of financial access moderation in this relationship. Using the survey method and structural equation model (SEM) using SmartPLS 4, data was collected from 257 SMEs owners in various sectors. The results of the study show that both financial literacy and technological innovation have a significant positive influence on the performance of SMEs. In addition, access to finance has been shown to moderate the relationship between financial literacy and performance, as well as between technology and performance, by increasing the positive impact of both variables. These findings highlight the importance of increasing financial literacy and technological innovation, as well as better access to finance to support the growth and competitiveness of SMEs in Indonesia. This research provides implications for policymakers and stakeholders to design programs that support the capacity building of SMEs in managing finances and adopting new technologies..

Keywords: financial literacy, technology innovation, financial access, SMEs performance.

1 Introduction

Industry and web technology Businesses now have new ways to research, educate, and enhance customer contact while offering and selling goods and services thanks to 4.0 innovations, which will help them maintain their leadership position in the market going forward. Digital technology has changed the lives of most people. Nowadays, social media and smartphone apps occupy a large portion of people's free time. As a result, managers take great initiative to comprehend the behaviour of digital consumers, provide them with improved goods and services, and uphold client interactions via digital channels.

The quick expansion of digitalization, social media, internet marketing, and app-based marketing in small, medium, and big businesses is being studied by academics more and more [25]. Digital marketing has expanded beyond product promotion to include events, organizations, and operations [31, 34]. Internet advertising is a dynamic strategy that allows small businesses to work together with partners and clients to get the greatest results and deliver long-term value. Through innovative customer interactions and experiences in cutting-edge technical settings, digital

technology helps SMEs develop new adaptive processes that generate wealth [2, 30]. In order to accommodate the varied interests of SMEs, social media, which has been available for more than ten years, now includes new information management and communication features including blogging, mobile networking, and image and video sharing [16; 20]. The e-marketing landscape is being created by digital technology-driven advertising, which includes augmented reality, virtual reality, multi-channel systems, and artificial intelligence services. This indicates new research areas in SMEs.

SMEs are crucial for entrepreneurship, job creation, and business growth in developing economies. The importance of SMEs is highlighted by the global economy. They comprise 90% of all firms globally, have a major influence on job growth and economic sustainability, accounting for more than 50% of employment and account for nearly 40% of GDP in developing nations (Forum, 2024). Notably, micro-enterprises employ one out of every three workers, whereas SMEs employ two out of every three workers, contributing to the value created in the economy [11].

Because of their ability to maintain market advantage and economic effect, SMEs are being researched more and more. Since the Internet era's rapid advancements in ICT have altered consumer purchasing patterns, digital marketing is crucial for companies looking to reach the right clients. Using technology in economic operations and promotion campaigns to promote items via the web, apps, and display adverts is known as digital marketing. Data-driven marketing provides a range of strategies for using internet advertising to draw in, revive, delight, and drive customers. Notwithstanding their significance, SMEs have challenged such limited access to vital resources, such as trained staff, funding, experience, chances for innovation, and pertinent information and training [6]. Kafetzopoulos [14] assert that the resources of their owners are the foundation for SMEs' success. Therefore, small and medium-sized business owners' financial literacy is crucial [1; Gur et al., 2023].

Multifaceted financial literacy, however, can mean many things. It is typically associated with the financial expertise of a small business owner or manager regarding the best financing goods and services, as well as the proper financing choices that would inevitably impact the performance of the business as it progresses through various stages [6]. Since SMEs play a major role in job creation, innovation, and overall economic growth, their performance is an essential component of economic development. According to [1], there has been a strong correlation in recent years between SME funding access and financial literacy. To properly manage their finances and income, SMEs require financial literacy, claims Fatoki [10]. According to Mayr et al. [19], SME managers and owners require greater financial knowledge in order to prevent loans that could lead to insolvency. Due to their inability to create and defend appropriate financial reporting, SMEs that lack financial literacy find it challenging to secure funding. Improved financial literacy is necessary to help SMEs provide timely financial data so that debt providers can assess and make wise financial decisions, according to Hussain et al. [12]. In light of this link, SMEs need to improve their financial literacy to make it easier for them to get outside capital [1, 6].

According to the literature, SMEs can improve their product development process, expand their market reach, utilize operational work [16] and acquire fresh customer insights (by utilizing ICT. As a result, they have greater commercial competition.

According to existing research, SMEs encounter certain obstacles when attempting to adapt and utilize new technologies. Marinelli et al. [20] revealed that when certain environmental inputs (financial, knowledge, social assets, and institutions) are properly exploited to increase technology adoption, important outcomes, i.e., the competitiveness of SMEs and the creation and development of new technology-based ventures are generated [15, 33]. However, Rajala & Hautala-Kankaanpää [26] could not discover a direct correlation between the operational performance of SMEs and the deployment of technology.

By filling in the evidence, contextual, and knowledge gaps between technology and SMEs' business performance in emerging markets, as well as how SMEs can enhance their operational policies, value creation, and customer satisfaction in EMs, this study adds to the body of literature on marketing and entrepreneurship.

2 Literature Review

2.1 Small and medium-sized businesses and economic expansion

SMEs are created as a result of the entrepreneurial process. While some use the phrase MSMEs (micro, small, and medium-sized enterprises), others call them small businesses. Depending on the preferences of the person or organization, the phrases SME and MSME are sometimes used interchangeably. SMEs have a critical role in promoting economic development and progress, particularly in developing nations. Numerous studies have emphasized how important SMEs are to local economic growth, poverty alleviation, and job creation. SMEs are the most common type of business worldwide, not only a specialized segment of the commercial environment. SMEs make up about 99 percent of all enterprises in its member nations, according to the OECD (2023). According to data from the Ministry of Cooperation and Small and Medium Enterprises (Ministry of SMEs), there were 64.2 million SMEs operating in Indonesia in 2021, contributing IDR 8,573.89 trillion, or 61.07 percent, to the country's GDP. SMEs are able to absorb 97 percent of the entire workforce and are able to gather up to 60.4 percent of total investment in Indonesia.

2.2 Financial literacy

Particularly in emerging nations, financial literacy has become a crucial factor in determining how well SMEs perform. Several studies show that financial literacy improves access to financing [23] and risk management [32], and that it has a favorable relationship with SMEs success [1, 6]. Financial literacy is "the ability of managers to comprehend and analyze financial data to make financial choices," according to Marriott & Mellett [21]. However, it is defined by Hung et al. [13] as "the financial knowledge, attitude, and awareness that improve organization performance." According to [27], it is a wide notion that encompasses critical thinking abilities, character characteristics, behaviour, and character qualities that evolve over time. One needs to be aware of and understand financial concepts, products and services.

Literacy has a variety of effects on SMEs. It impacts their capacity to obtain capital, effectively handle money, and put plans into action. In light of this, the authors describe financial literacy as the integration of the information, attitudes, behaviors, and awareness required to make successful and efficient financial decisions. The authors go on to explain that as the financial landscape has grown more complex, financial literacy has become essential to surviving in such a setting. Furthermore, financial institutions that are in charge of giving customers the financial products and services they need make the error of assuming that customers are already financially literate and that they possess the knowledge, abilities, and skills needed to engage in related financial activities. Knowledge improves decision-making and boosts corporate effectiveness, according to research. For instance, according to Adomako et al. (2016), SMEs' ability to manage their money and obtain financing, which leads to business results, depends on their level of sound financial literacy. According to [6] information enables SMEs to make informed decisions, steer clear of financial difficulties, and take advantage of expansion prospects. The following components of financial literacy were included in this study: According to Sabana [29], accounting literacy, savings literacy, debt literacy, investment literacy, and insurance literacy.

2.3 Technology Innovation

However, as the competitiveness in the global market increases, SMEs are encountering new difficulties on a daily basis [8]. SMEs must now take into account the critical role that information and communication technology (ICT) plays in business development because their operations are impacted on a daily basis [4, 20]. According to [9], SMEs are predicted to have greater sustainable competitiveness and growth the more they can utilize digital technologies. Research on the adoption of technology in SMEs is therefore receiving increased attention as a result of the digital transformation that many SMEs undergo [5].

Innovation has five technological features, according to Rogers [28]. An innovation's relative advantage is the extent to which prospective adopters believe it to be superior to the alternatives. How well it works with other technologies that are already in use within the company is known as compatibility. While difficulty decides whether an invention is considered difficult to use, observability assesses whether the results of deploying an innovation are visible to others (i.e., whether other organizations and individuals can recognize that the technology has assisted them). Finally, trialability refers to how easily an invention may be assessed before being adopted.

2.4 Financial Access

SMEs' operating capabilities and growth potential are strongly impacted by their access to financing [22], making it a critical component in determining their performance. The ability to obtain and utilize services, or access to funding, is a factor in SMEs' success. Having access to resources also facilitates daily operations, fosters innovation, and creates opportunities for expansion. SMEs, as opposed to corporations, frequently require assistance in securing capital. SMEs can also expand

their enterprises and undertake initiatives with the help of financing. Since it provides the funds required to invest in technology, penetrate new markets, and boost productivity, financial access is essential for SMEs' growth [6]. Furthermore, by providing businesses with the tools they need to effectively lessen economic shocks and uncertainties, funding may assist SMEs in managing risks.

According to earlier research, small businesses have considerable disadvantages when it comes to obtaining financing, particularly bank financing, as compared to larger companies. Put another way, despite the fact that small firms support both established and developing nations' economy, their size restricts their ability to obtain outside finance more than that of larger companies. Therefore, it is essential to comprehend the issue of SME financing and look into the financial access indicators. According to [6], financing is considered a prerequisite for starting and growing a business, developing new products, investing in manufacturing, and recruiting additional staff. It is crucial that small firms have access to sufficient and easily accessible funding in order to support their ongoing growth. Access and financial literacy have been shown to be related. SME finance is more likely to be obtained by those with financial management expertise, which improves their capacity for innovation and growth [1]. Access to cash is ensured by knowledge. could result in bankruptcy [1]. By lowering entrance barriers, better managing risks, and encouraging activity, increased access to financing has been demonstrated to boost corporate performance in emerging economies.

2.5 Theoretical framework and hypothesis development

A useful methodology that examines the relationship between technical investment and the strategic value of information technology (IT) based on various resource features and company performance capabilities in emerging markets (EMs) is social network theory (SNT). SNT was initially applied in the 1890s to examine the organizational structures of society and enterprises. After being made popular by Jacob Moreno in the 1930s, SNT was mathematically codified in the 1950s to examine the interpersonal relationships among SMEs in EMs [18]. SNT is a theoretical paradigm that emphasizes the importance of social interactions for business in EMs, a complex, interdisciplinary topic that combines aspects of psychology and sociology [18]. SNT in EMs suggests that social actors are influenced by the interpersonal connections of people in their personal networks, according to Liu et al. [18]. Technology has been studied and established as social interactions in the form of links and nodes through SNT for SME success in EMs. Figure 1 illustrates the research model that was created using the SNT theory.

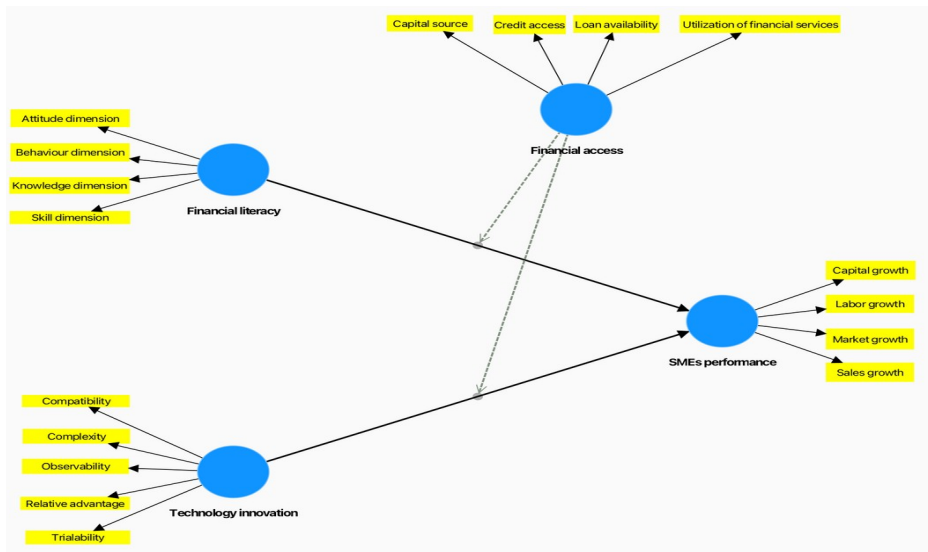


Fig. 1. Research model

2.6 The performance of SMEs and financial literacy

The outcomes of recent attempts by academics to carry out financial literacy studies have also shown the connection between financial literacy and financial decision-making. The vast majority of these studies demonstrate a strong positive relationship between financial literacy and performance. According to [3], financial literacy is crucial for SMEs to stay afloat and adjust to the swift changes in the market. [17] state that businesses can use financial literacy as a flexible talent to carry out a range of financial operations in a safe and efficient manner. It can help turn resources into other things and encourage entrepreneurs to be creative. Due to a number of obstacles, such as the need for collateral when requesting financing, high interest rates, a lack of financial knowledge, and strict regulations, SMEs require financial experts. Adequate financial literacy and comprehension are necessary for businesses to identify the best funding source for their efficient operation.

Thus, we postulate (H1) that financial literacy considerably enhances Indonesian SMEs' performance.

2.7 Innovation in technology and the performance of SMEs

SMEs may leverage cutting-edge technical products, services, and processes to attain long-term success and performance in EMs, according to technology orientation in EMs, also referred to as innovation orientation. Similar to how consumer orientation is crucial for SMEs in EMs to perform better, SMEs in EMs who wish to do so must also research technical orientation. In order to be competitive and stay dynamic in the market environment in EMs, SMEs must swiftly adopt technological advancements if they want to improve their performance. It is recommended that SMEs adopt a

technical orientation as a key strategic decision to improve their performance and remain competitive. [9] examined the effects of e-marketing orientation, technology orientation, and learning competence on the performance of SMEs. They came to the conclusion that the performance of SMEs was significantly impacted by these factors. Both technology and customer orientation are crucial for increasing firms' digital capabilities, according to Pan et al. [24], who looked into the importance of strategic technical and consumer orientation. [7] Examine how technological innovation affects the performance of SMEs. He investigated how technological innovation directly improves the performance of SMEs.

Thus, we postulate (H2) that technological innovation considerably enhances Indonesian SMEs' performance.

2.8 The performance of SMEs, financial literacy, and financial access

Financial literacy can significantly expand the amount of finance available to SMEs, claims [1]. As a result, SME financing opportunities are improved when owners and managers have greater financial literacy. According to [6] the biggest obstacle to SMEs' growth is probably their inadequate access to financing. A lack of financial expertise puts SMEs' development in developing countries at risk. According to the World Bank (2022), financial literacy enhances the effectiveness and quality of services. By rerouting idle assets to creative ways and processes, financial access enables the firm to explore new growth routes, hence facilitating the pursuit of costly development plans [23]. However, because they seldom meet bank standards, such as having good business plans and fulfilling all collateral conditions, SMEs are unable to easily get bank financing. Maintaining competitiveness is crucial in a market that is changing quickly. It's also crucial to note that the significantly low utilization of financial services by small enterprises may be explained by supply and demand considerations. When SMEs have profitable investment ideas but are unable to obtain sufficient external capital, supply-side problems arise.

Thus, we postulate (H3) that the connection between financial literacy and SMEs' performance is moderated by financial availability.

2.9 Technology innovation, financial access and SMEs performance

Access to good financing allows SMEs to invest in new technologies. Without financial support, many SMEs may struggle to adopt the technological innovations necessary to improve efficiency and productivity. With better financial capabilities, SMEs can explore new markets and introduce innovative products that suit customer needs. This can drive more innovations that focus on market demand. Sustainable financing allows SMEs to not only invest in early innovations, but also to make continuous updates and improvements to existing technologies [4, 23].

Thus, we postulate (H4) that the connection between technology innovation and SMEs' success is moderated by financial availability.

3 Research methodology

3.1 Measurement

A variety of validated and previously tested questionnaires were used to build the research measures [1; 21]. There are five divisions and 93 elements in the study measurement. Information about the respondent and their company is included in Section A. This section contains closed-ended questions with a predetermined format for answers. Concurrently, unidimensional methodologies are used to produce the questions in sections B, C, D, and E that address financial literacy and technological innovation (an independent construct), financial access (a moderate construct), and the performance of SMEs (a dependent construct). Using this method, hypotheses were generated by associating the measured variables with a certain concept. A five-point Likert scale, with 1 denoting strong disagreement and 5 denoting strong agreement, was used to evaluate the primary variables.

For this study, a business performance scale was created. Due to the challenges small firms face in obtaining financial data, the questions evaluate impressions rather than objective measurements. This information is probably unavailable, untrustworthy, or challenging to cross-check in the majority of situations [4]. Perception-based responses are typically regarded as trustworthy and have been demonstrated in earlier research to yield outcomes that align with objective measurements [10; 8]. To provide sufficient dependability, a minimum of three items were employed for each construct [9].

3.2 Sampling approach and data collection

Our study's use of snowball sampling encouraged sample retrieval for a number of reasons. First, timely participant identification and reliable recommendations were offered. Second, because the referrals come from a large data source, the technique is more accessible and less expensive. The maximal arrows pointing to the endogenous construct, power ($1-\beta$), significance (α), and effect size (f^2) in Smart-PLS 4 determine the sample size. States that at the 0.05 α level, business research should have a statistical power of at least 0.8 [22]. This study exceeded the threshold requirements by collecting the intended sample with a statistical power of at least 0.95 and an α level of 0.1. We survey managers and owners of SMEs in a variety of sectors in Indonesia.

3.3 Statistical analysis methods

Excel version 13 looked at the participants' demographics and business profiles. SmartPLS software version 4 and partial least squares structural equation modeling (PLS-SEM) were used to analyze the data. The process of analyzing the data was divided into two stages. The reflective and formative measurement methods were used in the first phase to evaluate the created questionnaire's validity and reliability. The Fornell–Larcker Criterion, which evaluates the discriminant validity, composite reliability (CR), outer loading, and average variance extracted (AVE), was therefore

used to evaluate the reflective measurement model. The variance inflation factor (VIF), outer weight, and p-values were used to assess the formative measurement model. In the second step, a comprehensive structural model that connects independent, dependent, and moderate constructs was examined using the path coefficient, p-value, and R2. The $Y1 = X1 + X2$ and $Y2 = X1 * M + X2 * M$ formulae were used to evaluate the direct and moderation relationship.

4 Result and Discussion

Results of demographic analysis. This survey involved 115 SME owners and managers in total. There were 55% men and 45% women. In terms of age categories, 58% of our respondents have bachelor's degrees, and 45% of them are between the ages of 25 and 35. In terms of company kind, 32% and 25% of respondents, respectively, are in charge of retail and service businesses. 17% of businesses are involved in trade and commerce.

Descriptive analysis results. Table 1 displays the primary variables, skewness, kurtosis, and standard deviation. Participants had a favorable assessment of every variable, as evidenced by the fact that each variable's average score was more than 3.0. The standard deviation, which quantifies the amount of expected variation around the mean of random variables, showed that sales growth had the biggest variance (1,634), indicating considerable diversity in the performance of SMEs. On the other hand, credit access has the lowest standard deviation (1.312), indicating that SMEs have more consistent access to financing. A low standard deviation may indicate that financial institutions have a consistent financing strategy, which facilitates SMEs' access to loans with minimal fluctuation. Kurtosis is typical since every variable falls between -3 and +3. The negative slope of every variable indicates the distribution of the left-sided tail.

Table 1. Results of descriptive analysis

Variables	Mean	SD	Skewness	Kurtosis
<i>Financial literacy</i>				
1. Behaviour dimension	4.202	1.594	-0.416	-1.519
2. Skill dimension	4.074	1.499	-0.449	-1.991
3. Knowledge dimension	4.542	1.580	-0.491	-1.311
4. Attitude dimension	4.044	1.473	-0.412	-1.474
<i>Technology innovation</i>				
1. Relative advantage	4.581	1.604	-0.169	-1.018
2. Compatibility	4.621	1.622	-0.129	-1.967
3. Complexity	4.399	1.484	-0.230	-1.474
4. Trialability	4.419	1.486	-0.374	-1.879
5. Observability	4.379	1.473	-0.149	-1.669
<i>Financial access</i>				
1. Credit access	3.512	1.312	-0.576	-1.558
2. Capital source	3.842	1.479	-0.589	-1.922
3. Loan availability	3.911	1.484	-0.374	-1.474
4. Utilization of financial services	3.712	1.480	-0.606	-1.669
<i>SMEs performance</i>				

2. Sales growth	4.571	1.634	-0.491	-1.922
3. Capital growth	4.512	1.602	-0.452	-1.838
4. Labor growth	4.473	1.523	-0.491	-1.052
5. Market growth	4.507	1.615	-0.412	-1.558

Source: SmartPLS 4.0 data processing results

Results from measuring models. As indicated in Table 2, the outcomes of a reflective measurement model indicated that all outside loading was greater than 0.6, with the exception of six items that were eliminated because of their low loading. Table 2 shows that each variable had a CR more than 0.6 and an AVE greater than 0.5. Furthermore, based on the Fornell–Lucker criterion results, which are displayed in Table 3, the square root of the AVE for each variable was greater than its highest correlation with any other variable. The noteworthy outcomes of the reflecting measurement model show how valid and reliable the measurements are.

Table 2. Results of the measurement model

Items	Outer loadings	CR	AVE
Critical values	>0.7	>0.6	>0.5
<i>Financial Literacy</i>		0.927	0.524
<i>Behaviour dimension (BD)</i>			
BD1	0.779		
BD2	0.746		
BD3	0.705		
<i>Skill dimension (SD)</i>			
SD1	Deleted		
SD2	0.714		
SD3	0.768		
<i>Knowledge dimension (KD)</i>			
KD1	0.760		
KD2	0.734		
KD3	0.710		
<i>Attitude dimension (AD)</i>			
AD1	0.760		
AD2	Deleted		
AD3	0.727		
Technology innovation		0.920	0.536
<i>Relative advantage (RA)</i>			
RA1	0.812		
RA2	0.770		
RA3	0.716		
RA4	0.731		
RA5	0.816		
RA6	Deleted		
<i>Compatibility (CT)</i>			
CT1	0.898		
CT2	0.861		
CT3	0.899		
CT4	0.845		
CT5	0.815		

<i>Complexity (CX)</i>			
CX1	0.799		
CX2	0.845		
CX3	0.794		
CX4	0.733		
CX5	0.721		
<i>Trialability (TR)</i>			
TR1	0.851		
TR2	0.865		
TR3	0.878		
TR4	0.895		
<i>Observability (OB)</i>			
OB1	0.883		
OB2	0.808		
OB3	0.869		
OB4	0.721		
Financial access		0.951	0.694
<i>Credit access (CA)</i>			
CA1	0.833		
CA2	0.924		
CA3	0.921		
<i>Capital source (CS)</i>			
CS1	0.922		
CS2	Deleted		
CS3	0.884		
CS4	0.809		
CS5	0.910		
<i>Loan availability (LA)</i>			
LA1	Deleted		
LA2	0.821		
LA3	0.815		
LA4	0.828		
LA5	0.850		
<i>Utilization of financial services (FS)</i>			
FS1	0.838		
FS2	0.881		
FS3	0.869		
FS4	0.821		
SMEs performance		0.933	0.672
<i>Sales growth (SG)</i>			
SG1	0.913		
SG2	0.910		
SG3	0.921		
<i>Capital growth (CG)</i>			
CG1	Deleted		
CG2	0.884		
CG3	0.910		
<i>Labor growth (LG)</i>			
LG1	0.801		
LG2	0.823		
<i>Market growth (MG)</i>			
MG1	0.829		

MG2	0.803
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Source: SmartPLS 4.0 data processing results

Table 3. Fornell-Larcker criterion results

Variables	Financial literacy	Technology innovation	Financial access	SMEs performance
Financial literacy	0.724			
Technology innovation	0.976	0.732		
Financial access	0.897	0.813	0.833	
SMEs performance	0.893	0.829	0.871	0.820

Source: SmartPLS 4.0 data processing results

Findings of structural model. Determining the influence between the model's latent variables is the goal of the structural model evaluation. The value of the path coefficient, R-squared/Adjusted R-squared, was examined in order to assess the inner model. The prediction ability of structural models is gauged using R-Square. The impact of some exogenous latent factors on endogenous latent variables is described by R-Square. Strong, moderate, and weak models are indicated by R-Square values of 0.67, 0.33, and 0-19 (Chin et al., 1998). The R-squared estimation findings are displayed in Table 4.

Table 4. R-Square results

Variabel	R-square	R-square adjusted
SMEs Performance	0.984	0.784

Source: SmartPLS 4.0 data processing results

The R-square (R2) value of SMEs' performance is 0.784, indicating that financial literacy, technological innovation, and financial access have a significant impact on SMEs' performance, accounting for 78.4% of the variance, with other factors outside the study model influencing the remaining 21.6 percent. A high R2 value suggests that the performance of SMEs is significantly impacted by the combination of these three factors.

Results of the hypothesis test. Making decisions on hypothesis testing involves considering t-statistics, p-values, and the significance values between constructs. In this manner, the estimated measurement values and standard errors are determined using actual data rather than statistical hypotheses. If, using the bootstrap resampling approach, the t-value is larger than 1.96 and/or the p-value is less than 0.05, the hypothesis is considered accepted, and H0 is rejected. Table 5 displays the findings of the hypothesis testing.

Table 5. Hypothesis testing results

	Variabel	t-values	p-values
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Critical values		>1.96 0	<0.050
H 1	Financial literacy → SMEs Performance	3.775	0.000
H 2	Technology innovation → SMEs Performance	2.333	0.020
H 3	Financial literacy → Financial access → SMEs Performance	2.283	0.022
H 4	Technology innovation → Financial access → SMEs Performance	3.253	0.000

Source: SmartPLS 4.0 data processing results

4.1 Discussion

This study looks at how technology innovation and financial literacy affect the performance of SMEs, with a particular emphasis on the moderating effect of financial access. The suggested hypothesis (H1) is supported by the structural model analysis, which shows that financial literacy improves SMEs' performance. The findings support H1 by showing that financial literacy has a significant and favorable influence on SMEs' performance ($p = 0.000$, $t = 3.775$). These results are in line with other studies that connected the success of SMEs to financial literacy [3]. [17]. SME owners can handle their bookkeeping, savings, debt, investments, and insurance with improved financial literacy. Furthermore, the findings imply that increased financial literacy among SMEs promotes better performance, company development, and market expansion.

The study backs up the premise (H2) that SMEs' performance is positively impacted by technological innovation. The findings support H2 by showing that technological innovation has a substantial and favorable influence on SMEs' performance ($p = 0.020$, $t = 2.333$). These results are in line with other studies that connected the success of SMEs to technological innovation [7] [9]. Innovation in technology frequently results in increased operational efficiency, which enable SMEs to cut expenses [26] and simplify procedures. According to Arroyabe et al. [4], there is proof that social media expands brand engagement [20], which can boost SMEs' sales [4].

Financial access supports hypotheses (H3) and (H4) by moderating the impact of technological innovation and financial literacy on the performance of SMEs. This result is in line with other studies [1, 6]. According to our research, having sufficient financial literacy makes it easier to obtain financial services. These findings are supported by [30], who suggested that a variety of firm capacity elements, including the acquisition of assets, market exposure, and the adoption of new technologies, are impacted by availability to capital. These characteristics are all critical to a company's survival and growth. As a result, increasing access to funding is crucial for SMEs to increase performance and break free from poverty constraints. [23].

Given this, the current study confirms past conclusions that financial literacy is essential to the long-term viability of small businesses. Conversely, a lack of financial knowledge may lead to SME failure [6]. This study thus provides strong support for

the findings of [1], who identified financial literacy and access as crucial indicators of SME growth.

5 Conclusion

The performance of SMEs in Indonesia was investigated in this study in connection to financial literacy, technological innovation, and the moderating impact of financial access. The results provide a substantial contribution to the existing research by highlighting the critical role that financial access plays in bolstering the link between financial literacy and technological innovation and the success of SMEs. Indonesian SMEs exhibit commendable financial behavior, suggesting a prudent approach to budgeting and spending. They plan their business, avoid making rash purchases, and closely monitor their financial spending. SMEs have more freedom to embrace and develop technology when they have access to financing. For SMEs looking to boost productivity and maintain their competitiveness, technology orientation is a crucial strategic decision. Technology has a significant influence on SMEs in Indonesia, helping them develop their digital skills to stay competitive and stay dynamic in the market.

The Government of Indonesia and SMEs in Indonesia may find these insights helpful in enhancing their financial literacy and technological orientation in order to achieve sustained performance and a competitive edge. Targeted financial literacy programs can greatly enhance SME results, especially in Indonesia, where poor financial access continues to be a key obstacle to SME growth, according to the demonstrated positive association between financial literacy and SME performance. The established positive correlation between SME performance and technology innovation suggests that SME managers should use technology and the market environment's potential to enhance performance, while SME policymakers should use technology to offer their target market high-quality goods and services. According to the modest role of financial access, financial literacy policies may help SMEs profit from financial literacy by directing them toward better financial management and decision-making.

This study includes a number of limitations in addition to all of these contributions and implications. First, the current model research does not adequately reflect the dynamic relationship between financial literacy and SME performance over time. These drawbacks emphasize the necessity of using longitudinal designs in future studies to look at impacts over time, maybe as knowledge grows. Second, the study didn't look at how company strategy and technology adoption relate to one other. It will be intriguing to watch if businesses whose tactics encourage the use of technological applications see a greater impact on their bottom line.

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