
| RESEARCH ARTICLE

Business Performance Optimization through Literacy Finance and Technology Finance with Role Government as Moderation in Small and Medium Enterprises Regency South Nias

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| ABSTRACT

Study this aim for test and analyze influence positive and significant literacy finance to performance SME business, influence positive and significant technology finance to performance SME business, role government moderate influence positive and significant literacy finance with performance SME business and its role government moderate influence positive and significant technology finance with performance SME business. Population in study as many as 523 perpetrators SME business while sample as many as 242 perpetrators SME business. Method deep data analysis study This use method Structural Equation Model (SEM) with approach Partial Least Square (PLS). Research results show that literacy finance influential positive strong and significant in increase performance business SMEs, technology finance influential negative and no significant to performance SME business, role government moderate negative and significant between influence literacy finance to performance SME business and its role government moderate negative and no significant between influence technology finance with performance SME business. It is hoped that to SME actors to increase ability literacy finance, utilizing service formal finance and integrating technology finance in activity business. Share government area expanding inclusion programs finance, providing means literacy finance and compiling integrated policies between inclusion finance, literacy finance, and utilization technology finance. Share institution banking increase innovation product finance, strengthening role consultative and collaborative with technology finance.

| KEYWORDS

Performance business; literacy finance; technology finance; role government.

| ARTICLE INFORMATION

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1. Introduction

Small and Medium Enterprises (SME) sector provides role significant in move the world and regional economy in particular create field jobs, and raise Product Domestic Gross Domestic Product (GDP). SMEs contribute significant to GDP, value plus industry, and absorption power Work (Fajarika et al., 2024)UKM represents around 90% of the total business and contributes more from 50% of the total field Work globally. (World Bank, 2019)International Labor Organization (ILO) report that in some parts large number of countries included in Organization for Economic Co-operation and Development (OECD) SMEs contribute more of 50% of GDP, and some global estimates show number reached 70% (ILO, 2019). SMEs represent 90% of all company and produce almost 70% of jobs and GDP globally, showing role importance of SMEs in trading international (World Economic Forum, 2023). The same thing expressed (Jagtap, 2019) importance SME sector in growth the economies of developing countries in the Asian region and (Arifin et al., 2021) SMEs play a role role important in growth economy national and regional.

SME sector is machine driving force economy in many countries. SMEs play a role big in creation field work, reduction poverty, and increasing welfare national (Malesu & Syrovátka, 2025). SMEs have significant contribution to economy in some countries, in India the SME sector has significant contribution to the country's economy (Mund, 2020)and in Nigeria found that the SME

sector has connection strong positive with growth economy national (Oluremi & Maku, 2024). SMEs are considered as sector strategic important in Sri Lanka because his contribution to development economy (Liyanage & Liyanage, 2023). Thus as in Ethiopia, SMEs are sector important that contributes to growth economy and reduction poverty, in three administration the country's urban areas (Gamo & Gollagari, 2020).

Sector in Indonesia provides contribution in economy Enough large. The number of SMEs in Indonesia in 2024 will reach around 66 million business units, which covers 99% of the total business units (Jatmika, 2024). Studies literature stating that MSMEs in Indonesia contribute >61% of GDP and employ 97% of the workforce Work (Sinha et al., 2024). UKM plays role strategic in economy national through creation field work, improvement income, and poverty alleviation poverty (Jagtap, 2019). SMEs in Indonesia absorb around 120 million power work, or about 97% of the total power Work national (Ananda, 2024). The contribution of SMEs to GDP is also increasing from year to year, shows importance the role of SMEs in development economy (Harini et al., 2018; Kavitha & Gopinath, 2020). SMEs also provide contribution around 61% of Product Domestic Indonesia's Gross Domestic Product (GDP), with mark amounting to Rp 9,580 trillion in 2023 (Limanseto, 2023). Likewise, SMEs contribute around 15.7% of total exports national, show potential big in increase Power competition product local in the international market (Limanseto, 2023).

Outline SMEs often face challenge big that causes the difficulty of SMEs to growing and sustainable. This is caused by limitations financing, lack of capacity managerial, challenges in adoption technology new and innovative products, regulations and policies complicated government, and pressure for business sustainable, as well as skills and abilities management finances that are still not enough (Beck et al., 2020; Berger & Udell, 2021). Some SME countries are experiencing constraint in increase performance business and growth his business. Report (OECD, 2024) highlight that access to financing still become obstacle significant for growth of SMEs. Many SMEs are experiencing difficulty in access financing Because lack of literacy financial and not fulfil condition application financing. This is hinder development and competition of SMEs in the market (Miswanto et al., 2024). The same thing was also conveyed (Jagtap, 2019) say that one of constraint main issues faced sector This is access to lack of formal bank financing adequate and inadequate appropriate time. According to (Kavitha & Gopinath, 2020) Small businesses in Tamil Nadu often face difficulty in access financing from commercial banks. Likewise(Charfeddine et al., 2024) problem limitations credit faced by Micro, Small, and Medium Enterprises (MSME) importers in Qatar.

Another thing that causes performance UKM business does not maximum and even SMEs do not can know development performance his business is lack of knowledge about finance. Many business people UKM does not know Lots about things base about management finance, such as recording finance, planning budget and management cash flow. This cause decision bad finances and stop growth company (Ardiansyah, 2020). Business SMEs in the region remote or rural often No affected by training and education programs existing finances (UKM, 2020). Inclusion unfinished finances comprehensive too challenge large. Many SMEs in rural areas or remote Not yet get adequate access to service finance official, sort of banking, insurance, and service digital (Firmansyah et al., 2022) payments. Complicated administrative processes as well as payment big for open account or submit loan So obstacle for SMEs to access service finance (Charfeddine et al., 2024). The same thing was also expressed (Eton et al., 2021) payment big and procedures evaluation environmental risks So barrier main for SMEs in rural areas for access service finance official. Utilization technology finances that are still low too problem . Many SMEs have not use technology finance because lack of access to digital infrastructure, such as normal internet and feature technology (Wulandari, 2020). At least the data and guidance overwrite properties as well as method usage service technology finance make many SMEs are reluctant or Not yet able shift to solution technology finance (Susilowati, 2021).

Utilization technology finance Still low among SMEs. Even though in several countries such as the United Arab Emirates (UAE), technology finance has become strength main in development system finance through initiatives and policies for support ecosystem technology finance (Elsayed et al., 2024). This matter caused by lack of digital literacy and skills technical requirements for use service technology finance. In fact, technology financial can become solution for overcome limitations access to service finance traditional. The same thing was also expressed by (Kumar et al., 2023; Mothobi & Kebotsamang, 2024; Ngong et al., 2024; Sahdan & Sardju, 2024; Silalahi et al., 2024; Singh et al., 2024; Umami et al., 2023; Widyakto et al., 2024).

For increase performance business and sustainability of SMEs must involving UKM actors prepare and equip self in various knowledge literacy finance, inclusion finance and technology finance. Research previously say that literacy big finances can improve skill management SME finances which lead to an increase profitability as well as sustainability business (Hanasri et al., 2023a). Regarding in tune found by(Lusardi & Mitchell, 2020) that the UKM owner with levels literacy more finances big tend more effective in manage finance as well as more able overcome challenge financial. Other research results say that literacy finance influential positive and significant to performance UKM (Aritonang et al., 2023; Imran et al., 2020; Khan et al., 2023; Kurnia et al., 2024; Lusardi, A., 2020; Mantik & Dian Kristy Simanjuntak, 2024; Miswanto et al., 2024; Okon, 2024; Orbaningsih et al., 2024; Singh et al., 2024; Supriyadi et al., 2024; Wen et al., 2024) business. The same thing was also expressed by (A.

Hermawan & Suharsono, 2024) literacy finance own influence significant and positive to growth of MSMEs in the Regency Trenggalek.

In some results study other opposite with results the research above. The results of the research conducted (Mushtaq et al., 2021) display that although literacy finance means, no always result positive on access finance for SMEs. Regarding In the same vein, research by (Fatoki & Oni, 2021) say that literacy finance No always correlated positive with performance SME business. Likewise (Tubastuvi & Purwidiyanti, 2023) said that literacy finance No own influence significant direct to SME performance. (Fatoki, O., Oni, 2021; Lubis & Irawati, 2022; Mushtaq, R., Ali, H., Naeem, 2024; Qhodriyah, 2022; say that literacy finance No influential positive and significant to performance SME business.

Adoption technology finance can helping SMEs improve efficiency as well as access to a bigger market wide. Use technology finance own influence positive significant to inclusion finance. Study (Wijaya, 2023) say that adoption technology finance by SMEs increase efficiency operational as well as strength competitiveness in the global market. Likewise, research (Rehman et al., 2023a) said that SMEs that use technology platforms finance face it increase significant in productivity as well as strength competition international. Other research results say that adoption technology finance Can helping SMEs improve efficiency as well as access to a bigger market wide (Cristia et al., 2024; Ezeocha, 2024; Ngong et al., 2024; Ozili et al., 2024; Rehman et al., 2023b; Silalahi et al., 2024; Widyakto et al., 2024).

There are some results research that is not in tune with research above. Research (Kumar et al., 2023; Nkundabanyanga et al., 2020) inclusion finance No influential and not always improve performance SME business. Likewise, research by (He et al., 2021) and (Sheng, 2021) say that adoption technology finance No always bring consequence positive for SMEs. Another study by Sahdan and Sardju (2024) stated that that adoption technology finance No always bring consequence positive For improve SME performance.

Other solutions for increase performance SME business is involvement various stakeholders interest in the form of an institution. The role government can play position moderation past supportive policies and urgent regulations literacy finance, inclusion finance , and adoption technology finance to performance business . Research from (Priyanto & Anwar, 2022) say that increase inclusion finance past policy government as well as Work The same with institution finance can improve SME access to financing as well as service other financial research (Rahman, 2023), intervention government in form of literacy program finance as well as increase infrastructure finance Already contribute in a way significant to increase performance SME business. Likewise, research (Allen et al., 2021a) say that initiative government in provide training literacy finance as well as strengthen infrastructure finance in a way significant improve performance SME business. Research other say government Can play position moderation past supportive policies as well as urgent regulations literacy finance, inclusion finance, as well as adoption technology finance (Ahdanisa & Tarmidi, 2024; Arifin et al., 2021; Ezeocha, 2024; Harini et al., 2018; Harmadji et al., 2022; A. Hermawan & Suharsono, 2024; Lembono & Layman, 2023; Prasetyo, 2021; Rahayu, 2022; M. M. Rahman, 2024; Tirtayasa et al., 2021; Wahyono & Hutahayan, 2021).

Role government may or may not be possible become solution in increase performance SME business through literacy finance, inclusion finance and technology finance. Research results (Mamun et al., 2021a) say that intervention government No always efficient in improve performance SME business and research by (Charfeddine et al., 2024c) say that intervention government that does not coordinated as well as not enough special to need Local SMEs often do not efficient. Research other (Charfeddine et al., 2024a; Gamo & Gollagari, 2020; Mamun et al., 2021b; Nareswari et al., 2023) say intervention government No always efficient in increase performance SME business.

Based on cases and problems experienced by SMEs and inconsistencies in several study The foregoing stated above is the basis study this. Besides that theory The Resource-Based View (RBV) theory reveals that superiority competitive company obtained through management source unique and valuable internal strengths, including skills, technology, and knowledge (Barney, 1991). Literacy finance, inclusion finance and technology finance is source expected internal power can increase performance SME business. Through study This expected get solution on problems faced by SMEs and can increase its performance.

2. Theoretical Review and Hypotheses

The Resource-Based View (RBV) theory states that superiority competitive company obtained through management source unique and valuable internal strengths, including skills, technology, and knowledge (Barney, 1991). Literacy finance in RBV context can seen as one of the source Power important thing that SMEs have. The more tall level literacy finance businessman or SME managers, increasingly both SMEs in manage finance SME business, making decision smart investing, and planning for the future finance company so that will increase performance his business .

Literacy finances are suspected can increase performance business. This is strengthened with a number of results study say that literacy finance help migrant rural - urban in make decision more business good, manage source Power finance with more effective, and improve quality SME (Mohd et al., 2024; Wen et al., 2024) entrepreneurship. Individuals who have literacy more finances tall tend own welfare more finances Good (Singh et al., 2024). The more tall literacy finance among SME actors then can increase performance SME business. This is in line with study (Hermawan & Suharsono, 2024) say that literacy finance impact positive to SME growth and performance business literacy finance own influence positive and significant to performance UKM (Aritonang et al., 2023; Hanasri et al., 2023b; Imran et al., 2020; Lusardi, A., 2021; Mantik & Dian Kristy Simanjuntak, 2024; Miswanto et al., 2024) business. Based on results research and theory above so be arranged hypothesis one (H1) as following:

H1: Literacy finance influential positive and significant to performance SME business

Growth economy in a area signify that performance business something business also in good condition in term long. There are connection positive term significant length between use technology finance like ATM machines , ownership debit cards , and internet banking with growth economy . Every improvement in use ATM machines, ownership debit cards, and internet banking contributed to the increase growth economy (Ngong et al., 2024). Interest to information technology finance found more high in developed countries during pandemic. This show that people in these countries more active look for information about technology digital (Ozili et al., 2024) finance. Technology finance has play a very important role in increase inclusion finance in Nigeria (Ezeocha, 2024).

Technology finance function as source power that can increase efficiency SME operations, enabling SMEs to do transaction finance in a way more fast, safe, and cheap. This is can increase performance SME business. In RBV, capabilities for adopt technology finance (such as digital payments, processing transaction automatic, management finance based application) becomes source very important power for create superiority competitive, especially in optimize performance business in this digital era. Based on results research and theory above so be arranged hypothesis two (H2) as following:

H2: Technology finance influential positive and significant to performance SME business

Theory support institutional put forward that support from institutions, such as government, it is very important For success implementation of business strategies. Support This can in the form of supportive regulations, adequate infrastructure, and assistance programs financial or training. In context study this, theory this help explain how role moderation government can strengthen impact literacy finance to performance SME (North, 1990; Scott, 2014) business.

A number of study say that support government capable mediate connection between literacy finance and performance SME (Ahdanisa & Tarmidi, 2024) business. Likewise, entrepreneurship own effect mediation positive in a way partial between literacy finances and intentions entrepreneurship (Kang et al., 2024). Tolerance risk finance mediate connection between threat finance and behavior finance as well as between beliefs and behavior finance (Owusu et al., 2023). Literacy finance moderate influence technology finance based payment gateway to performance MSME (Laurensia et al., 2024) finance. Withdrawal decision finance mediate connection between literacy finance and performance SME finances during crisis (Kalapriya, 2024). Literacy finance own impact positive and significant to support government (Ahdanisa & Tarmidi, 2024). Based on results research and theory above so be arranged hypothesis study as following:

H3: Role government moderate influence positive and significant literacy finance with performance SME business

Theory support institutional put forward that support from institutions, such as government, it is very important for success implementation of business strategies. Support This can in the form of supportive regulations, adequate infrastructure, and assistance programs financial or training. In context study this, theory This help explain How role moderation government can strengthen technology finance to performance SME (North, 1990; Scott, 2014) business.

Entrepreneurship own effect mediation positive between digital capabilities and intentions entrepreneurship (Kang et al., 2024). Literacy finance moderate influence technology finance payment gateway based on performance MSME (Laurensia et al., 2024) finance. Poverty energy also moderates influence borrowing Technology finance to growth economy (M. M. Rahman, 2024). inclusion finance mediate influence literacy finance and adoption technology to SME (Tubastuvi & Purwidiанти, 2023) performance. Adoption technology finance (technology financial) in significant moderate connection between literacy finance and well-being finance (Singh et al., 2024). Facilities provided by the government local is very influential in support development of SMEs (Arifin et al., 2021). Support perceived regulation moderate connection between use technology finance and inclusion finance, strengthening connection the when support regulations felt tall (Amnas et al., 2024). Readiness infrastructure technology

and policy government support is very important for success adoption of digital business programs by businesses micro (Putra, 2017). Based on results research and theory above so be arranged hypothesis study as following:

H4: Role government moderate influence positive and significant technology finance with performance SME business

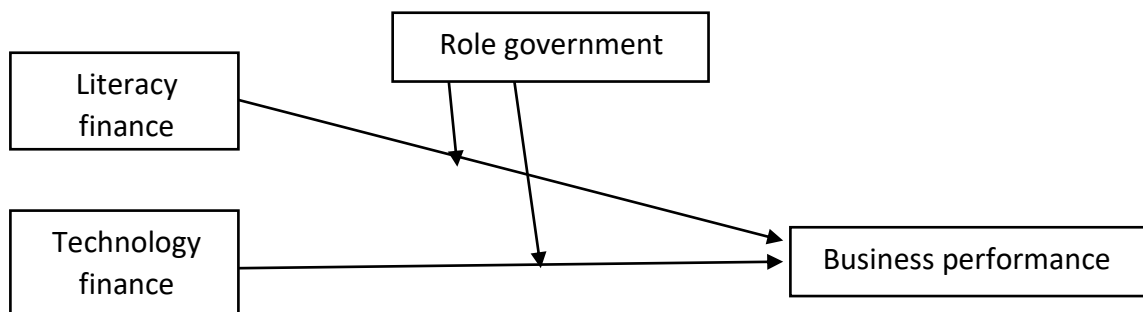
3. Method

Population in study This as many as 523 while samples used as many as 242 SME actors. The determination technique sample use cluster sampling. Research design is collective data sourced from appropriate target population with criteria research, next done measurement with valid and reliable instruments and analyzed with use device soft certain, for get empirical output. The data source is primary data originating from from respondents. Data collection techniques: questionnaires (surveys) submitted direct to respondents for filled based on each respondent's perception from UKM actors and ask for it back to the date that has been promised by the respondent. Data analysis techniques used is a statistical test of Structural Equation Modeling (SEM) with approach Partial Least Squares (PLS).

The model feasibility test consists of from the measurement model test (outer model) and the structural model test (inner model). According to (Hussein, 2015; Kline, 2016) measurement model test (outer model) consists of from convergent validity test is the factor loading value on the latent variable with its expected indicators is >0.50; discriminant validity is useful cross loading factor values For know whether construction have adequate discriminant that is with method compare loading value on the target construct must more big compared to with loading value with other constructs ; composite reliability is an indicator for measure something constructs that can seen in the latent coefficients view . If own composite reliability > 0.70 has high reliability; Average Variance Extracted (AVE) is the average of the variances whose value is expected >0.50; and Cronbach's alpha is tests conducted for support results from composite reliability. A variable can stated reliable if own mark Cronbach's alpha > 0.70.

Structural model test (inner model) consists of from coefficient determination (R2) is coefficient determination of endogenous constructs "criteria limitation mark R square This in three classification, namely 0.67 as substantial; 0.33 as moderate and 0.19 as weak". Predictive Relevance Test (Q2 or known with Stone-Geiser's is a test for know capability prediction how much Good resulting value. If The values obtained were 0.02 (small); 0.15 (medium) and 0.35 (large); and Goodness of Fit Index (GoF) used For know goodness of fit model. interpretation mark f square that is 0.02 has influence small; 0.15 has influence moderate and 0.35 has influence large at the structural level (Hair et al., 2022).

Method data analysis used is the Structural Equation Modeling (SEM) test and hypothesis testing. The Structural Equation Modeling (SEM) test is technique statistics comprehensive used for inspect connection complex between variables, especially latent constructs (variables that are not observed) indicated by the variable observed (Dash & Paul, 2021). Formula For test influence moderation in PLS-SEM as following: $Y = \beta_0 + \beta_1$ Testing Hypothesis using statistics, for alpha 5% the t - statistic value used is 1.96. So criteria acceptance / rejection hypothesis is Ha accepted when the t- statistic >1.96 and the p- value <0.05 (Creswell & Creswell, 2018).



Picture 1
Framework Study

4. Results and Discussion

Measurement model test is evaluation to connection between constructs with the indicators. Based on results data processing found that connection between construct with the indicators are valid and reliable. The value convergent validity from latent variables with indicators > 0.50 so they are valid; discriminant validity shows loading value on the target construct more big

compared to with loading value with other constructs so that it is valid; composite reliability > 0.70 so that reliable; Average Variance Extracted (AVE) > 0.50 so that reliable; and Cronbach's alpha > 0.70 so that reliable.

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
Business performance (Y)	0.939	0.942	0.946	0.593
Literacy finance (X1)	0.942	0.944	0.948	0.534
Technology finance (X2)	0.952	0.955	0.957	0.598
Role government (M)	0.948	0.951	0.954	0.636

Table 2
Construct Reality and Validity

Structural model test focus on testing connection between latent construct with notice mark R-square (R²), Q-square (Q²)/Predictive Relevance, and Goodness of Fit (GoF) or Effect Size (f²). Based on results data processing found that mark R-square (R²) is 0.641 categorized to in level moderate until strong. Q-square (Q²) value or Predictive Relevance 0.641 which means own ability high prediction to endogenous variables. Goodness of Fit (GoF) value or Effect Size (f²) as big as 0.615 models in study This big or very good.

Based on data analysis used obtained Structural Equation Modeling (SEM) moderation test results $Y = \beta_0 + 0.687X_1 + 0.066X_2 - 0.019(X_1 \times M) + 0.085(X_2 \times M)$. Literacy finance own more influence big compared to technology finance. Besides that, the role government proven functioning as variables moderation, where role government weaken influence literacy finance to performance business, but strengthen influence technology finance to performance business. With thus, support government is very important especially in increase effectiveness use technology finance for perpetrator business.

Testing hypothesis in SEM-PLS is carried out with notice coefficient path coefficient which shows direction and strength connection between latent variables, as well as level significance statistics from connection the.

Connection Variables	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)
Literacy Finance -> Business Performance	0.687	0.687	0.062
Technology Finance -> Business Performance	0.066	0.065	0.078
Role Government x Literacy Finance -> Business Performance	-0.019	-0.022	0.053
Role Government x Technology Finance -> Business Performance	0.085	0.087	0.051

Table 3
Paetc Results Coefficient

Analysis results show that literacy finance own influence positive and strong to performance business with mark coefficient of 0.687. This is show that improvement literacy finance perpetrator business will increase performance business in a way significant. Meanwhile that, technology finance own influence positive but very weak to performance business with mark coefficient of 0.066.

Role government as variables moderation show different results. Interaction between role government and literacy finance own mark coefficient negative of -0.019, which shows that role government No strengthen connection between literacy finance and performance business. On the other hand, interactions between role government and technology finance own mark coefficient positive of 0.085, which shows that role government A little strengthen influence technology finance to performance business, even though its influence Still classified as weak.

5. Conclusion

Literacy finance influential positive strong and significant increase performance business. This indicates that ability UKM actors in understanding base about finance, ability for managing debt and financing and managing capital and investment with Good can increase growth income and working capital, increase operational business, improve quality source Power human beings and maintain performance sustainable SME business.

Technology finance influential negative and no significant to performance business. This is show that although access to technology finance inclusive for SMEs in the region remote improved, sustainability with technology friendly environment and increasing education digital finance for SMEs No can can increase growth income and working capital, no can increase operational business, no can increase quality source Power human and not can maintain performance sustainable SME business .

Role government moderate negative and significant between influence literacy finance to performance business. This indicates that ability UKM actors in understanding base about finance , ability For managing debt and financing and managing capital and investment with Good through policy support finance and financing , development skills and education For source Power SME human , policy infrastructure that supports SMEs and convenience and promotion UKM products weaken in growth revenue and working capital , operational business , quality source Power human and not can maintain performance sustainable SME business.

Role government moderate negative and no significant between influence technology finance with performance business. This is show that although access to technology finance inclusive for SMEs in the region remote improved , sustainability with technology friendly environment and increasing education digital finance for SMEs through policy support finance and financing, development skills and education For source Power SME human , policy infrastructure that supports SMEs and convenience and promotion UKM products weaken in growth revenue and working capital , operational business , quality source Power human and not can maintain performance sustainable SME business.

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