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Empowering small and medium enterprises: A model for digital literacy and credit utilization

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ABSTRACT

This study aims to analyze the development of SMEs based on literacy and the use of credit facilities for innovative and competitive business development. The research was conducted using the survey method, and the data were analyzed for quantitative modeling. The population in this study consisted of *Jakpreneur* MSMEs totaling 1,251 individuals. The sample size was set at 275 participants. The analysis focused on SME development factors related to digital literacy and the utilization of credit facilities, emphasizing the process of access to finance for SMEs in developing their businesses both financially and productively. The conclusion indicates that digital literacy has a significant impact on the use of credit facilities and business development. The use of credit facilities also mediates the relationship between digital literacy and business growth, partially explaining how digital literacy contributes to business development. This research provides practical implications for the importance of enhancing digital literacy among MSMEs by optimizing the benefits of credit facilities for business development, as it can increase access to productive finance. Future researchers are encouraged to examine variables such as location, education and training, creativity, innovation, and other aspects related to digital Industry 4.0 capabilities.

Contribution/Originality: This research contributes to the understanding of SMEs' financial literacy, identifies training needs that support financial management, use of credit facilities, credit optimization for SME growth, and challenges faced. It models SME development based on digital literacy and credit facilities, offers a modeling basis for policies and programs, and the quantitative data obtained supports decision-making with a clear picture of SMEs' status and challenges. It makes an important contribution to the academic literature.

1. INTRODUCTION

Small and Medium Enterprises (SMEs) developed in the digital era by relying on knowledge and optimizing capital utilization have proven to be significant in influencing a country's economic growth, driving the real economy, and forming productive communities (Ambad & Damit, 2016). They contribute to reducing unemployment (Heinonen & Poikkijoki, 2006) and can even become an economic culture of empowerment (Van Gelderen et al., 2008). SMEs are growing and becoming more competitive in the global and digital era. This research is conducted under the UNJ Research Master Plan, which encompasses the fields of social humanities, cultural arts, and the creative economy, with the theme of SME Welfare Economics and Finance.

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SMEs play a crucial strategic role in the Indonesian economy by creating employment and investment opportunities. They significantly increase employment opportunities, support income equality, and play a role in rural economic development. In addition, SMEs contribute to the increase in non-oil and gas exports and have a major impact on the country's Gross Domestic Product (GDP). With local economic growth, SMEs can either enhance the national economic structure or support the overall well-being of society. A preliminary work confirmed the importance of SMEs in driving economic and social progress at both the local and national levels (Sujarwo, Tristanti, & Kusumawardani, 2022).

Digital literacy is crucial for entrepreneurs in thinking, behaving, and actions that enhance production and marketing processes, leading to increased efficiency and innovation in accessing greater profits (Coco, Colapinto, & Finotto, 2024). Hence, sufficient knowledge and digital literacy are needed for MSME actors to access credit. The basic rationale is that MSMEs will be able to manage their finances and businesses as efficiently as possible if they have sufficient knowledge of economics and finance. Currently, the digital era requires MSME actors to understand how to manage finances and investments (Jindrichovska, 2013; Rubens, 2002) online.

On the other hand, digital literacy strongly influences one's ability to access credit (Marini, Hanum, & Sulistiyo, 2020; Servon & Kaestner, 2008). Entrepreneurs with high digital literacy can more effectively understand, operate, and develop digital-based electronic media, which is crucial in the process of applying for and managing credit. The ease of access to credit must be balanced with in-depth knowledge of the process of its use, access, and budget management. With good digital literacy, entrepreneurs can make optimal use of credit facilities, improve operational efficiency, and maximize the growth potential of their businesses.

The Government's efforts in encouraging the digitalization of MSMEs aim to increase access to financing for MSMEs, channeled through financial institutions with guarantee patterns such as Micro Waqf Banks, UMKM-MU, and Securities Crowdfunding. Digital financial literacy is a service that can provide benefits in encouraging community financial inclusion easily and quickly. Thanks to access to digital financial services or products, either through applications such as e-wallets, m-banking, or e-commerce. Based on the above studies, researchers are interested in developing studies and research: Small and Medium Enterprises Development Model Based on Digital Literacy and Use of Credit Facilities.

Research on MSMEs development based on digital literacy and credit utilization is important for several theoretical and practical reasons. From the perspective of theory, this research can enhance arguments related to factors that influence MSMEs development, such as digital literacy and credit utilization. Digital literacy proposes that business actors with greater understanding in various uses of credit can better leverage these resources. This access includes learning lessons for successful business practices through various media. Therefore, this research is expected to provide theoretical references in modeling digital literacy as an application for business actors in the digital era. Additionally, this research produces a model that is tested and validated using a structural equation model (SEM), which can offer input for measuring indicators for each variable digital literacy, credit access, and business development that are currently underdeveloped, allowing for targeted improvements for MSMEs.

While in practical matters, the results of this research offer empirical insight into the influence of digital literacy and the use of credit facilities on MSMEs development. The results will contribute to the understanding that the use of credit facilities can raise MSME growth. It will provide knowledge-based guidance for MSMEs to identify areas that need improvement, such as digital literacy analysis and credit utilization strategies. Credit access through digital media as a best practice is expected to be a finding of this research. This will indicate that high digital literacy will increase access and utilization of credit.

Lastly, this research fills the gap that literacy is important for financial management, especially digital access capabilities (Kumar, Pillai, Kumar, & Tabash, 2023). However, entrepreneur literacy is diverse, such as industry 4.0 literacy (Suparno, Purwana, Wibowo, & Narmaditya, 2023), SME financial literacy (Sulistianingsih & Santi, 2023) even credit literacy (Courchane, Gailey, & Zorn, 2008). The influence of digital literacy on business development has

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been studied as having a significant direct effect. However, to answer how the process works, it is suspected that mediation skills, creativity, attitude, and even just intention (Asriati, Syamsuri, Thoharudin, Wardani, & Kusuma Putra, 2022).

2. LITERATURE REVIEW

Business development in the digital era has become a popular study in the Industry 4.0 era. Researchers examine the main literature on how business can be developed as a theory (Romanenko & Rakhuba, 2019) to support and develop SME businesses to become successful (Friedman, Miles, & Adams, 2000; Hong & Sullivan, 2009; Ligthelm, 2008; Romanenko & Rakhuba, 2019). Small Business Development is an Innovative Economy (Bibarsov, Kretova, & Popova, 2017), that business development is the process of developing a business towards success, is an innovative economic endeavor (Bibarsov et al., 2017; Leyden, 2016).

Business theories and models as frameworks that help in understanding, analyzing, and improving business performance (Jamali, 2008). It helps us to communicate vision (Maignan, Ferrell, & Ferrell, 2005), strategy and goals provide information to users in decision-making, including employees and customers (Al-Debei & Avison, 2010; Mayfield, Mayfield, & Sharbrough III, 2015; Wongrassamee, Simmons, & Gardiner, 2003). Drucker and Sloan (1994) in 'Critical Evaluations in Business' state that business development belongs to the finance and industry of urban communities (Datta, 2021; Wagner-Tsukamoto, 2024). Business theory can be used to describe markets, competition, innovation, and organizational culture (Hogan & Coote, 2014; Linnenluecke & Griffiths, 2010). In an attempt to create a grand theory of business development, business development is defined as the creation of long-term value for an organization through customers, markets, and relationships (Loesche & Torre, 2020; Mattera, Alba Ruiz-Morales, Gava, & Soto, 2022; Pacheco, Dean, & Payne, 2010). Business development is an activity that provides goods or services needed by consumers while making a profit.

2.1. SMEs Development

Small and Medium Enterprises (SMEs) are a form of business that is recognized on a scale ranging from home-based businesses to small businesses. Small businesses typically have 1-19 employees and a net worth exceeding IDR 500,000,000, not including land and buildings used by the company (Udayana, Farida, Lukitaningsih, Tjahjono, & Nuryakin, 2021). The development of SMEs is not related to increasing production, expanding business units, enhancing sales, or achieving profit targets. The key points are increasing production, developing business units, increasing sales volume, and profit (Bataineh, Al-Hawari, Alshraideh, & Dalalah, 2019; Brown & Dev, 2000; Surya et al., 2021). Business development is a process and activity that provides goods or services (Lindholm, Laine, & Suomala, 2017; Witell, Gustafsson, & Johnson, 2014) needed by consumers while making a profit (Khajeheian, 2013).

Analytical preparation of potential growth opportunities, support, and oversight of the implementation of business growth opportunities are tasks and processes known as business development. However, business development does not include decision-making on the strategy and execution of business growth opportunities. Business development can be defined as any investment or time that impacts the growth and expansion of a business, as well as any activity that increases or aims to increase the production, profit, or service potential of a business. Enterprise development is an endeavor to ensure that a business remains productive and profitable in the long term. In other words, business development is the organizational shaping of the customers, markets, and interactions involved. Based on the opinion of the expert above, business development is the activity of providing goods or services needed by consumers while making a profit in managing resources according to predetermined goals as measured by indicators: 1) increase in production, 2) development of business units, 3) increase in the number of sales, and 4) business profits earned.

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2.2. Digital Literacy

SMEs face technological developments that need to be responded to quickly and appropriately because they offer opportunities and challenges (Ellitan, 2020). The digital era is a condition of presenting information in real-time and at high speed online (Mancha & Shankaranarayanan, 2021). Digital literacy is the ability to use computers as information and communication tools, access, manage, integrate, analyze, and evaluate information, acquire new knowledge, and communicate with others (Maphosa & Bhebhe, 2019; Martin & Grudziecki, 2006; Mohammadyari & Singh, 2015; Shopova, 2014).

Digital literacy is the ability of users to utilize digital media, such as communication tools, internet networks, and other digital resources. Digital literacy facilitates digital communication, including text-based forums, audio, digital design, and online video. By using these digital media, people can collaborate and work together on the same project. This emphasizes the importance of digital literacy for the productive use of media in SME management.

Digital literacy affects credit facilities (Charfeddine, Umlai, & El-Masri, 2024; Gautam et al., 2022) all because a person's ability to use data will affect the response to various credit facilities, which are currently mostly online. This is by the statement (Mahmood, Batool, Rafiq, & Safdar, 2022; Nedungadi, Menon, Gutjahr, Erickson, & Raman, 2018). Digital literacy also affects SME development (Frimpong, Agyapong, & Agyapong, 2022; Mohammadyari & Singh, 2015; Sariwulan, Suparno, Disman, Ahman, & Suwatno, 2020; Zahoor, Zopiatis, Adomako, & Lamprinakos, 2023). This occurs because, with digital literacy, an entrepreneur will be able to develop his business in marketing (Fahmi & Savira, 2023; Olsson & Bernhard, 2021), access finance, analyze markets, and even take economic profit opportunities in various financial situations (Brunetti et al., 2020; Carayannis, Popescu, Sipp, & Stewart, 2006).

2.3. Credit Facility

One of the purposes and functions of credit is to advance the economy and empower the community. The use of credit, in this case, involves the utilization of credit facilities through plans for both modular work and investment (Kusi, Yussif, & Ismail, 2019; Sovacool, 2018). Credit facilities are used as a means of funding, and financing involves the utilization of pre-approved credit or loans that allow borrowers to borrow money on an ongoing basis over a period of time. Being able to apply for a new loan each time the borrower needs more funds helps the company maintain an efficient cash conversion cycle (Truby, 2018).

A financing arrangement that allows a person or business entity to borrow money to buy a product and pay it back over some time, a financial arrangement that allows a person or company to borrow money to buy a product and pay it back with interest over some time. Based on Law Number 10 of 1998 concerning banking, article 1 point 11, credit can be defined as the 'Provision of money or bills that can be equated with it, based on an agreement or loan and borrowing agreement between a bank and another party which requires the borrower to pay off his debt after a certain period with interest'. Indicators of the use of credit facilities include aspects of accuracy of use, aspects of accuracy of credit load, and aspects of accuracy of credit amount.

Credit facility affects SME development (Osano & Languitone, 2016). Credit facilities directly influence SME development. Therefore, based on the research rationale, creditability mediates the effect of digital literacy on SME development. Based on the review of theory, literature, previous research, and the hypotheses proposed in this study, the proposed research model framework can be presented as follows:

1. *Hypothesis 1 (H1). CRF positive influence on END.*
2. *Hypothesis 2 (H2). DLT positive influence on CRF*
3. *Hypothesis 3 (H3). DLT positive influence on END*
4. *Hypothesis 4 (H4). CRF positively mediates the impact of DLT on END*

Figure 1 illustrates the process of digital literacy's influence on SME development with credit facilities. The proposed model hypothesizes a direct positive influence of digital literacy on SME development. To understand the process of this influence, credit facilities are identified as a mediating variable in the SME development process. It is

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hypothesized that there is a direct positive influence of digital literacy on credit facilities, credit facilities on SME development, and digital literacy on SME development, with credit facilities as a mediating variable as a process or indirect influence in the modeling.

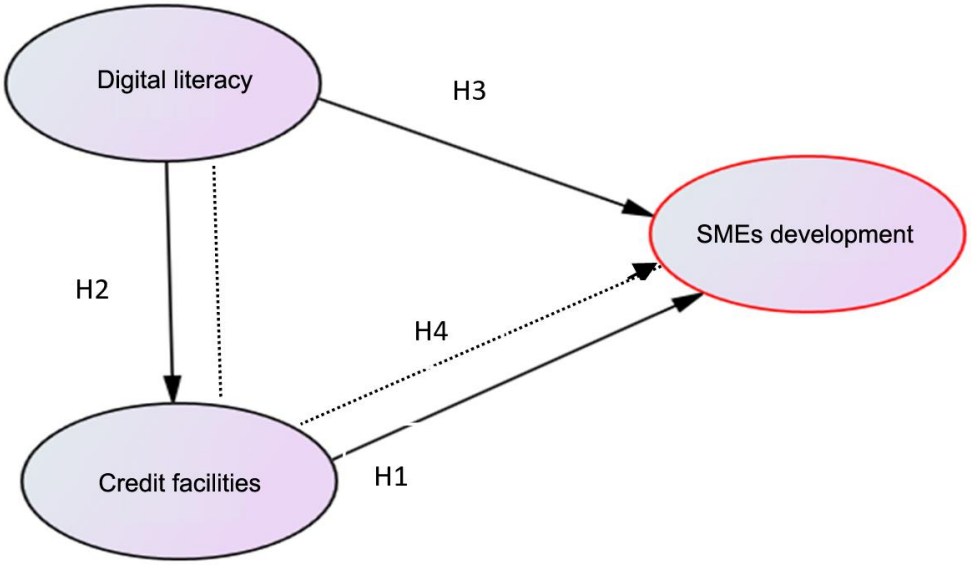

Figure 1. Proposed model of small and medium enterprise development.

3. METHODOLOGY

This research aims to answer how the literacy process as knowledge in the digital era can provide credit utilization for SMEs in developing their businesses. The novelty of this study is that there are no previous researchers who have integrated the variables of digital literacy, credit access, and business development using theoretical modeling. It has identified an effective theoretical model of the total effect of digital literacy on increasing business development through credit access. This research also offers recommendations for measurement tools for these three variables and empirically identified low measurable indicators. Knowledge interventions and financial access are expected to support the SME sector in surviving and developing in the digital era, especially for start-up businesses that are growing rapidly and facing fierce competition.

This research aims to obtain information about the causal relationship and the strength of the relationship between the research variables from reliable data and empirically proven. A research model of SME development has been developed, based on digital literacy and the use of credit facilities. The study examines the effect of digital literacy on SME development, the impact of digital literacy on the use of credit facilities, the influence of credit facilities on SME development, and whether the use of credit facilities mediates the effect of digital literacy on SME development.

3.1. Participants

The population in this study consisted of Jakpreneur MSME players in Jakarta. To determine the sample size, 5% of the total population of 1,251 was used, resulting in a sample of 275 SMEs. The research employed a quantitative method with survey data collection techniques, and the data obtained were processed using a causal approach. The analysis of the relationship pattern between variables aimed to identify the direct or indirect effects between exogenous and endogenous variables using SEM (Structural Equation Modeling).

3.2. Data Analysis

The data analysis technique in this study uses Partial Least Squares (PLS). PLS is a powerful analytical method because it is not based on many assumptions that data must be normally distributed, and the sample does not have to be large. The purpose of PLS-SEM is to develop or build a theory with a prediction orientation (Shmueli et al., 2019).

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PLS can be used to describe whether there is a relationship between latent variables. This study has a complex model and a limited number of samples, so data analysis is conducted using SmartPLS software. SmartPLS employs the bootstrapping method or random resampling. Therefore, the normality assumption is not a concern. Additionally, by bootstrapping, SmartPLS does not require a minimum number of samples, making it suitable for research with a small sample size (Willaby, Costa, Burns, MacCann, & Roberts, 2015).

Test the validity and reliability of construct measurement models with Cronbach score criteria equal to or higher than 0.6 (Hair, William, Babin, & Anderson, 2006) and acceptable scores above 0.5, with a threshold of 0.7 when it is equal to or higher than that value (Hair Jr, Babin, & Krey, 2017). Furthermore, hypothesis testing is carried out with the prerequisite tests of data normality, linearity, and significance of the regression coefficient and correlation. To test the goodness-of-fit model, several measurement criteria must be met with probability > 0.5 (Gäde & Schermelleh-Engel, 2023), RMSEA < 0.05, and CFI > 0.95 (Hu & Bentler, 1999), CMIN / DF values < 2 (Tabachnick & Fidell, 2007). The mediating effect of variables used the Hayes model, which can measure the partial and total effects of research with moderator and mediator variables (Hayes, 2015).

3.3. Outer Model Evaluation

The outer model or measurement model defines how each indicator block is related to each manifest variable in the form of indicators or instruments related to the latent variable. Latent variables in PLS-SEM have the meaning of quantitative value variables that cannot be observed directly but can be inferred using mathematical methods from other variables that are being measured directly. Meanwhile, manifest variables are defined as variables whose quantitative magnitude can be known directly, which in this research is in the form of respondents' scores on each questionnaire.

3.4. Inner Model Evaluation

Testing this model involves the development of a concept- and theory-based model to analyze the relationship between exogenous and endogenous variables, as described in the conceptual framework. Exogenous latent variables are independent variables, while endogenous latent variables are variables that were previously dependent variables. Thus, the testing of the structural model is evaluated using R-square, f-square, and variance inflation factor (VIF).

3.5. Hypothesis Testing

According to Carrión, Nitzl, and Roldán (2017), analyzing the mediation effect is necessary to examine changes in the influence of direct and indirect relationships. This indirect effect tests the hypothesis of an indirect influence of an independent variable on a dependent variable mediated by a third variable, as evidenced by bootstrapping results. In the specific indirect effect column, the purpose is to understand how the intervening variable influences the relationship between the independent and dependent variables. To evaluate the relationships within the proposed model, the research employed exploratory factor analysis (EFA) followed by confirmatory factor analysis (CFA). Predictor variables, outcome variables, and mediator variables are arranged according to standard procedures for testing and developing theory, which enhances scientific understanding of the mechanisms linking independent (predictor) and dependent (outcome) variables.

4. RESULTS AND DISCUSSION

4.1. Respondents

The data description provides a general overview of the results of data processing from four research variables. The population in this study consisted of Jakpreneur MSME actors in Jakarta, totaling 1,251 individuals, from which a sample of 275 UKM actors was selected. Data on digital literacy variables, use of credit facilities, and SME development were obtained through primary data collection using a questionnaire with an inferential semantic scale.

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The scale ranged from 1 to 5, where 1 indicates rarity or low frequency, and 5 indicates high frequency. The respondent data are presented as follows Table 1:

Table 1. Characteristics of research respondent data.

Description		Number of samples	Percentage
Gender	Woman	194	29
	Man	81	71
Age	20 < 35	35	5.5
	36 - 40	38	16
	41 - 45	98	44
	46 - 50	68	26.5
	51 - 55	26	28
	>55	10	4
Education	Junior high school	13	4
	Senior High School	98	36
	Diploma	46	17
	Bachelor	118	43
Length of business	3 - 5 years	164	60
	6 - 8 years	93	34
	9 - 11 years	14	5
	Over 11 years	4	1
Credit	< Rp 10.000.000	92	33
	Rp 10.000.000 - Rp 30.000.000	103	37
	Rp 31.000.000 - Rp 50.000.000	64	23
	> Rp 50.000.000	16	6

4.1. Evaluation of the Outer Model

Evaluation of outer model measurements is used to assess the validity and reliability of the model and also discriminant validity. Based on Table 2, It is known that there are three variables, namely the use of credit facilities, digital literacy, and MSME development.

The credit facility use variable has 8 indicators, digital literacy has 16 indicators, and the MSME development variable has 12 indicators. Based on the convergent validity test that has been carried out, it is known that all variables for the use of credit facilities, indicators for digital literacy variables, and MSME development have factor loading values in the range of 0.704 – 0.976. It can be stated that none of the indicators in the variable use of credit facilities have been deleted or excluded because they have factor loading values above 0.70 or > 0.70. Thus, all indicators on the variable use of credit facilities meet convergent validity.

The AVE value of the credit facility use variable is 0.900, which is greater than 0.50, indicating that it meets discriminant validity. The CR and Cronbach's Alpha (α) values for the variable use of credit facilities are 0.924 and 0.984, respectively, both exceeding the threshold of 0.70, thus confirming composite reliability. The results of the convergent validity test for the digital literacy variables, MSME development, and use of credit facilities show that the indicator factor loadings are above 0.70. Therefore, all indicators in the research variables have met the criteria for convergent validity.

The variables of credit facilities use, digital literacy, and MSME development have AVE values of 0.900, 0.643, and 0.624, respectively, fulfilling discriminant validity. The use of credit facilities, digital literacy, and MSME development have CR values of 0.924, 0.925, and 0.928, and Cronbach's Alpha values of 0.984, 0.966, and 0.948, respectively, all exceeding 0.70, thus meeting the criteria for composite reliability. The complete outer model measurement results can be seen in Table 2:

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Table 2. Outer measurement results of the research model for small and medium enterprise development.

Code	Questionnaire item	λ	α	CR	AVE
Use of credit facilities					
CRF1	I received credit funds as requested	0.930	0.984	0.924	0.900
CRF2	The credit funds I received were sufficient to cover the effects of changes in raw material prices.	0.976			
CRF3	The credit helps me buy raw materials	0.953			
CRF4	Credit allows the renewal of business equipment.	0.947			
CRF5	I made a plan to optimize the allocation of credit funds.	0.887			
CRF6	I used credit funds to open a new branch	0.966			
CRF7	Low credit burden, so I pay my installments on time.	0.965			
CRF8	I can pay the credit burden with the company's capabilities.	0.963			
Digital literacy					
DLT1	I understand how to search for information via the internet for business.	0.805	0.966	0.925	0.643
DLT2	I use the browser app well to download files for business.	0.860			
DLT3	I use the online Web to expand my business.	0.744			
DLT4	I understand the characteristics of web pages, such as HTTP, HTML, and URL.	0.820			
DLT5	I understand the differences in types of websites according to their function.	0.780			
DLT6	I utilize digital business development tools.	0.791			
DLT7	I analyze the validity of information sources	0.815			
DLT8	I double-checked the information from the internet.	0.872			
DLT9	I created a business information discussion forum on social media.	0.792			
DLT10	I use a computer and cellphone for business references.	0.797			
DLT11	I search for sources and creators of information on the internet.	0.789			
DLT12	I am looking for business management through digital tools.	0.799			
DLT13	I learned business development from e-books.	0.795			
DLT14	I read the news through various online media.	0.745			
DLT15	I use social media for business.	0.813			
DLT16	I download, upload, and edit videos.	0.806			
SME development					
END1	The demand for my products increases over time.	0.726	0.948	0.928	0.624
END2	I increased capital for business production capacity.	0.817			
END3	The amount of production in my business has increased in the last two years.	0.878			
END4	Use of credit for quality raw materials for my products.	0.828			
END5	My business products have attractive variations, appearance, and packaging.	0.721			
END6	My number of new customers increased.	0.773			
END7	My old customers are coming back.	0.706			
END8	My customer reach expanded and opened up expansion opportunities.	0.892			
END9	I opened a new business branch.	0.750			
END10	Sales of my products increase revenue.	0.726			
END11	I added new branches in the last three years.	0.892			
END12	I added expert employees in the production sector.	0.704			

Based on research results, the cross-loading value of the variables for the use of credit facilities, digital literacy, and MSME development is more than 0.70. The square root of AVE is greater than the correlation between latent

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constructs. Thus, the variables' use of credit facilities, digital literacy, and MSME development meet discriminant validity. The complete discriminant validity test results can be seen in Table 3:

Table 3. Discriminant validity test results of the small and medium enterprise development research model.

Variable	CRF	DLT	END
Use of credit facilities (CRF)	0.949		
Digital literacy (DLT)	0.878	0.802	
MSME development (END)	0.610	0.625	0.790

Source: Data processed by researchers, 2024

4.2. Evaluation of the Inner Model

In evaluating the structural model, a collinearity test is conducted to determine whether there is high collinearity between variables. The Variance Inflation Factor (VIF) value must be less than 5.00. The VIF values obtained for the variables CRF (4.356), DLT (1.000), and END (4.356) were all below 5.00, indicating no collinearity issues and confirming that all indicators of the constructs being tested are valid. In PLS-SEM, bootstrap resampling is used to obtain t-statistics or t-values. The bootstrap results demonstrate the stability of the PLS-SEM testing. In this research, the data was processed using 5,000 bootstrap samples. The path coefficient (p-value) for the three relationships between variables ranged from 0.000 to 0.029, all below the significance threshold of 0.05, indicating statistically significant relationships.

The R-squared level test assesses the strength of accuracy or prediction. The R^2 value for the credit facility use variable is 0.770, indicating that 77.0% of the variance in credit facility use can be explained by the digital literacy and MSME development variables, which is considered a moderate level. The R^2 value for the digital literacy variable is 0.407, meaning that 40.7% of the digital literacy variance can be explained at a moderate level. In testing the effect size (f^2) of each predictor latent variable on the structural model, it was found that the f^2 value of creativity on the product innovation variable is 0.388, indicating a large effect size. Additionally, the f^2 value of entrepreneurial education on product innovation is 0.048, which reflects a weak effect size. Finally, the f^2 value of entrepreneurial education on creativity is 0.129, demonstrating a medium effect size.

4.1. Hypothesis Testing

Based on the results of the structural model test in this research, it was found that the four relationships between variables had a t-value greater than 1.97. Therefore, it can be concluded that all the variable relationships in the hypothesis are significant and can also be analyzed for mediation effects. The following is the output from data processing of a small and medium enterprise development model based on digital literacy and the use of credit facilities with SEM-PLS.

Table 4. Hypothesis testing.

Hypothesis testing	Variable relations	Original sample	Sample mean	Standard deviation	T-value	P value	Decision
H_1	CRF → END	0.267	0.252	0.122	2.189	0.029	Accepted
H_2	DLT → CRF	0.878	0.877	0.023	38.704	0.000	Accepted
H_3	DLT → END	0.391	0.402	0.128	3.047	0.002	Accepted
H_4	DLT →CRF→END	0.234	0.221	0.107	2.182	0.030	Accepted

Source: Data processed by researchers, 2024

Based on Table 4, It can be seen that direct hypothesis testing, namely the first hypothesis, was declared accepted with a P value of 0.029. Then the second hypothesis was declared accepted with a P value of 0.000. Furthermore, the third hypothesis was declared accepted with a P value of 0.002. Indirect hypothesis testing, namely the fourth hypothesis, was declared accepted with a P value of 0.030. Therefore, it can be concluded that the test results of the

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four research hypotheses indicate that the use of credit facilities significantly influences the development of MSMEs. Based on the test results in Table 4, it is known that the H1 t-value is 2.189 > 1.97, which is significant.

Digital literacy significantly influences the use of credit facilities. Based on the test results, it is known that the H2 t-value is 38.704 > 1.97, which is significant. Digital literacy significantly influences the development of MSMEs. Based on the test results, it is known that the H3 t-value is 3.047 > 1.97, which is significant. Digital literacy has a significant influence through the use of credit facilities on the development of MSMEs. Based on the test results, it is known that the H4 t-value is 2.182 > 1.97, which is significant. Based on hypothesis testing of the independent variable on the dependent variable, which results in the independent variable directly influencing the dependent variable, it can be concluded that the variable use of credit facilities can partially mediate digital literacy in the development of MSMEs. The complete picture of hypothesis testing with PLS is as follows:

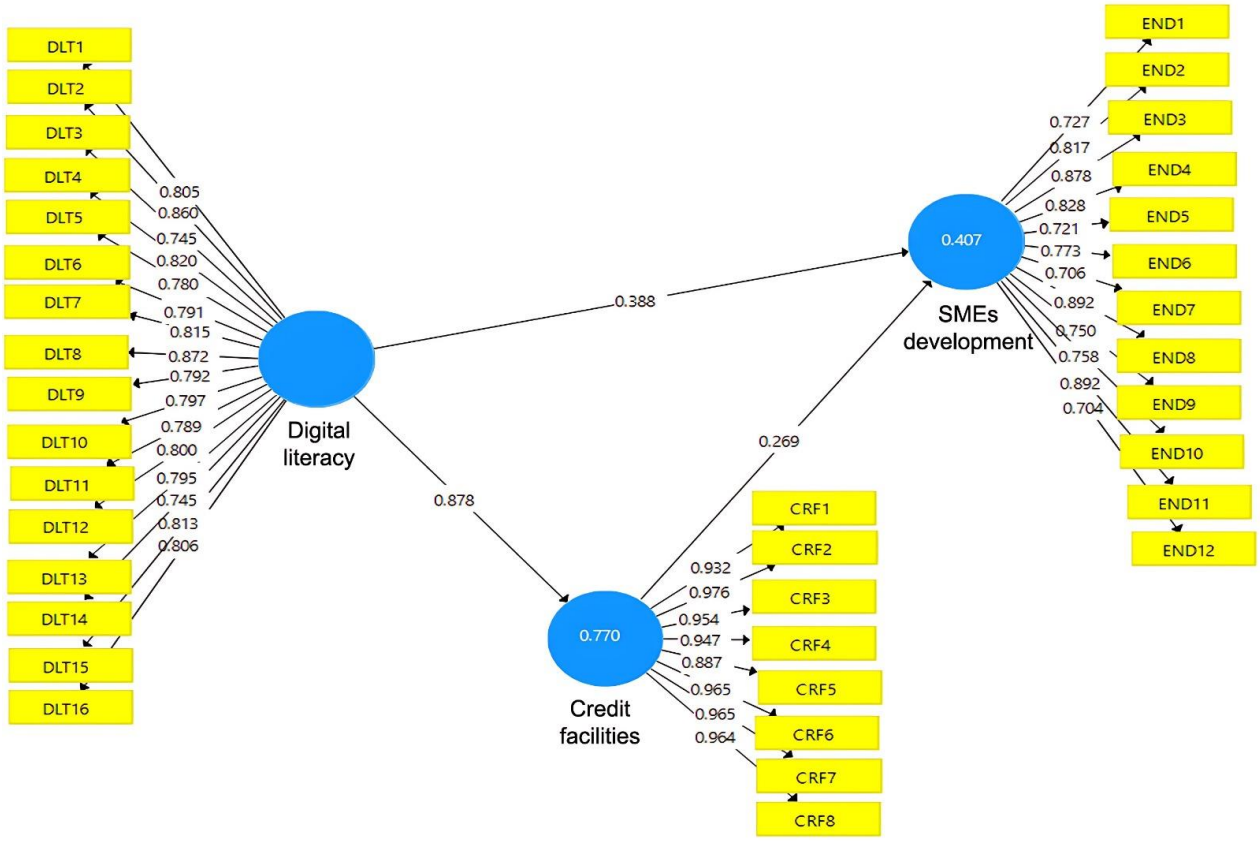

Figure 2. Structural model of small and medium enterprise development research.

Source: Research data processing, 2024.

Figure 2 illustrates the results of the Structural Model of Small and Medium Enterprise Development Research. Based on the EFA test results obtained in the DLT variable, all instruments have met the loading factor criteria above 0.7 with 16 instrument items. Likewise, the CRF variable with 8 instrument items has a loading factor above 0.7, and END with 12 instrument items also has a loading factor above 0.7. This confirms that the instrument is capable of measuring the variables in the modeling. Furthermore, based on the CFA test, the influence between variables shows that CRF on END is 0.267, DLT on CRF is 0.878, DLT on END is 0.391, and DLT on CRF on END is 0.234.

Based on the data description, data analysis testing, and hypothesis testing, it can be seen that the four hypotheses proposed in this research were accepted. The use of credit facilities influences the development of MSMEs. Digital literacy significantly influences the use of credit facilities. Digital literacy significantly influences the development of MSMEs. Digital literacy has a significant influence through the use of credit facilities on the development of MSMEs. Based on hypothesis testing of the independent variable on the dependent variable, which

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results in the independent variable directly influencing the dependent variable, it can be concluded that the variable use of credit facilities can partially mediate digital literacy in the development of MSMEs.

Based on the results of the research variable study, Use of Credit Facilities in a Business Context, it can be concluded that the majority of respondents were satisfied with the use of the credit funds they received, which were by their application and were adequate to overcome changes in raw material prices. The credit provided has proven to help purchase raw materials and enable the renewal of business equipment. Although some face challenges in planning the allocation of credit funds, many have succeeded in using these funds to open new branches and meet credit burdens on time. Overall, the credit burden is considered low and can be managed well, although there are several obstacles in paying the credit burden according to the company's capabilities.

In the digital literacy variable, differences in scores indicate unequal abilities in using and assessing digital information. The highest score on item DLT11, which states "I can search for internet sources and creators of information via the internet," shows that the individual is quite proficient in searching for and identifying information sources. However, the lowest score on item DLT7, which states "I can analyze the sources of information I obtain to ensure the validity of those sources," indicates a deficiency in the ability to critically analyze the validity of information sources. This highlights the need to improve the ability to assess and analyze information to ensure that the information received is truly reliable and of good quality.

In the context of MSMEs development, the highest score on item END1, which states "Experiencing an increase in demand for products from time to time," indicates a positive development in product demand, which is the main indicator of business growth. However, the lowest score on item END5, which states "My business has increasingly attractive product variations, appearance, and packaging," shows that product variety and innovation in appearance and packaging are still given less attention. It indicates that increasing market demand needs to be followed by product and packaging innovation as a variation of SME products to drive long-term consumer attention.

The next finding indicated acceptance of the fourth hypothesis. The development of MSMEs can be explained by the use of credit facilities, including operational capacity and increased innovation. Previous studies by Beck, Demirgüç-Kunt, and Maksimovic (2005) indicated that access to credit can promote MSMEs' performance as it provides a venue to invest in new technologies and improve operational capacity. Similarly, Banerjee and Duflo (2014) remarked that MSMEs can obtain some benefits from the provision of microcredit to deal with financial challenges and business development. The ability of MSMEs to manage liquidity and expand their business scale increases as a result of access to credit. Modigliani and Miller (1958) mentioned that capital structure theory is also relevant in this context because this theory states that investment decisions and company growth can be influenced by access to financial resources.

In addition, having access to credit enables MSMEs to develop and diversify their products. This aligns with the Chandler (1962) theory of organic growth, which states that adequate capital is essential for the growth and development of a business. Microcredit expands the market for MSMEs and helps them compete in larger markets. Later, Singh and Saini (2018) noted that well-managed credit can stimulate innovation and improve the financial performance of MSMEs. Indifferently, Jensen and Meckling (1976) Investment Decision Theory is relevant in this case because it explains how investment decisions and resource allocation are influenced by access to capital.

Digital literacy skills are often linked to how people use credit facilities. Digital literacy plays a key role in credit utilization in the context of an individual's or business's ability to access and interpret financial information. A prior study by Lusardi and Mitchell (2014) stated that knowledge and skills in managing financial information are vital in the credit-related decision-making process. In this regard, adequate digital capabilities will help people to assess and compare various credit offers online as well as to make sound economic decisions. Decision-Making Theory in Information Technology (IT Decision-Making Theory) also supports this and indicates how access to and understanding of technological information can influence financial decisions.

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Digital literacy has a significant influence on the growth of MSMEs. The importance of digital literacy in the development of Micro, Small, and Medium Enterprises (MSMEs) cannot be underestimated, because their ability to access and utilize digital technology can expand markets and increase operational efficiency. MSMEs with high digital literacy tend to be more prepared to adopt new technologies that can enhance their productivity and efficiency. Additionally, digital skills enable MSMEs to utilize e-commerce platforms, which not only help expand market reach but also increase sales and profitability. This is in line with the Diffusion Technology Adoption theory put forward by Rogers (2003), which states that the use of new technology has a significant impact on business performance and growth (Atkin, Hunt, & Lin, 2018).

Digital literacy also plays a significant role in the development of MSMEs, primarily by enhancing their ability to analyze and utilize business information. With this digital capability, MSMEs can better analyze the market and adapt to changes. According to the Dynamic Capability Theory put forward by Teece (2007), organizations that can handle information effectively can adapt to changes in their surrounding environment. Furthermore, digital literacy will help MSMEs access various resources and networks that can further contribute to their growth. The Social Network Theory introduced by Granovetter (1973) supports this finding and shows how networks and relationships are prominent in enhancing access to resources and opportunities.

The finding also shows that credit facilities can bridge the linkage between digital literacy with the progress of MSMEs. To support this, Gichuki and Mungai (2019) stated that MSMEs with digital literacy will wisely involve credit facilities, which can promote growth and expansion of businesses. In addition, Ghosh and Das (2021) underlined that digital skills can increase the ease of applying for loans online and better manage credit facilities. The Technology Adoption Theory, which was coined by Davis (1989), can also explain that the ease of use and advantages of digital technology influence the decision to adopt credit facilities, which positively impacts the development of MSMEs.

The influence of digital skills on the development of MSMEs is enhanced through the use of appropriate credit facilities. Prior research confirms that credit facilities combined with digital capabilities can contribute to improving performance and expanding the capacity of MSMEs (Taneja, Goyal, & Singh, 2018). The Dynamic Capability Theory by Teece (2007) is relevant for explaining the use of digital resources in adapting to changes. Additionally, credit facilities can serve as a bridge between digital skills and the development of MSMEs. Research by Kemi and Abiola (2022) confirmed that credit facility utilization can be beneficial to escalate the application of digital technology which drives the growth of MSMEs in international markets. Social Network Theory by Granovetter (1973) can provide an understanding of how digital skills strengthen the ability of MSMEs to establish relationships with financial institutions and business partners, which supports access to credit and opportunities in the market.

5. CONCLUSION

This research has tested the four hypotheses proposed, and the results of the modeling test can be accepted as both theoretical and empirical findings. It also addresses the research question of how the literacy process affects MSME business development through credit facilities. Significantly, the credit facility is proven to be a mediating variable, as well as having a significant direct impact on MSME actors in improving their businesses. Tests show that digital literacy influences the ability to use credit facilities effectively, which in turn supports the growth of MSMEs. Although digital literacy makes a positive contribution, inequalities in digital information analysis capabilities need to be addressed. The use of credit facilities also functions as an important mediator, strengthening the positive effects of digital literacy on MSME development by providing better access to financial resources and markets. Therefore, to maximize MSME development, it is important to increase digital literacy and optimize the use of credit facilities.

The variable descriptions of digital literacy, use of credit facilities, and development of Jakpreneur MSME actors in Jakarta are measured as high. Empirically, the variable of credit facilities is used to find creative solutions to face business challenges. Digital literacy refers to the ability to analyze sources of information obtained to ensure their

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validity, whether from trusted sources or unconvincing ones. The MSME development variable is measured as low, indicating that SMEs have a variety of products, appearance, and packaging that are increasingly attractive. Empirical results show that SME actors have planned schedules to implement new creative ideas, have been able to search for information via the internet, and have experienced an increase in demand for their products.

This research experiences limitations in that the research subjects only come from one group of SMEs, so it does not describe the research results in general. The variables used to measure SME development in this research are only three: credit access and facilities, digital literacy, and SME development. It is hoped that future researchers will be able to examine the development of MSMEs using the variables of location, education and training, creativity and innovation, as well as other aspects involving the digital capabilities of Industry 4.0.

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Transparency: The authors state that the manuscript is honest, truthful, and transparent, that no key aspects of the investigation have been omitted, and that any differences from the study as planned have been clarified. This study followed all writing ethics.
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