



Understanding MSMEs' Intentions to Apply for Formal Loans Through Behavioral Perspectives

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Abstract

This study explores the factors influencing Micro, Small, and Medium Enterprise (MSME) owners' intentions to apply for formal loans in Indonesia by integrating financial literacy and perceived access to finance into the Theory of Planned Behavior. Using a quantitative approach, data was collected from 215 MSME owners and analyzed via Partial Least Squares Structural Equation Modeling (PLS-SEM). Results show that financial literacy, perceived access to finance, and attitudes toward formal loans significantly increase loan application intentions—indicating that more financially capable owners and those with positive perceptions of formal credit are more likely to apply. Interestingly, perceived difficulties in accessing finance actually increase intention, suggesting a need-driven response. In contrast, social norms and perceived behavioral control have negligible effects. These findings highlight the importance of strengthening financial education, reshaping perceptions of credit accessibility, and improving attitudes toward formal financing. The study recommends policy initiatives that simplify loan processes, expand inclusive financial programs, and enhance financial literacy to better support MSME growth in Indonesia.

Keywords: *Financial literacy, loan application intention, MSME financing, perceived access to finance, Theory of Planned Behavior*

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1. INTRODUCTION

Micro, small, and medium enterprises (MSMEs) are the foundation of the Indonesian economy, accounting for more than 60 percent of the Gross Domestic Product (GDP) and playing a pivotal role in fostering inclusive and sustainable economic growth (Coordinating Ministry for Economic Affairs of the Republic of Indonesia, 2025). In addition to their role in job creation, MSMEs play a crucial role in reducing unemployment and supporting national economic development. Nevertheless, MSME growth continues to face financing constraints. In instances where a business's capital is limited, its ability to expand may be hindered. In such cases, accessing formal credit can serve as a strategic solution. As Kaya (2024) demonstrate, credit functions not only as a secure and sustainable source of funding, but also as a mechanism that fosters economic stability.

Despite the implementation of diverse credit schemes by financial institutions for MSMEs (Abu et al., 2025), utilization remains limited. Complicated requirements, lengthy administrative procedures, and the perceived risk of default have been identified as factors that discourage MSMEs from applying for loans (Bronzini et al., 2025). Moreover, inadequate financial literacy functions as an impediment, as MSMEs are deficient in comprehending the advantages of credit and the means to fulfill the stipulations (Al-Shami et al., 2024). Preliminary studies indicate a potential relationship between financial literacy and the behavior exhibited by individuals in the context of applying for credit. However, the findings are not uniform, and further research is necessary to ascertain the direction of any causal relationship. A number of studies have yielded conflicting results, with some reporting a positive effect (Liu et al., 2025) and others indicating an adverse effect (Aristei et al., 2024). This discrepancy in findings creates a significant research gap that merits further investigation to clarify the underlying mechanisms and implications for clinical practice.

In addition to financial literacy, attitudes toward formal loans are also a significant factor. As posited by Hu et al. (2024), negative attitudes are often precipitated by perceived risk and distrust of financial institutions. However, research by Naegels et al. (2022) found that female MSME owners still intended to apply for loans despite negative attitudes toward credit, especially when the funding need was urgent. This finding suggests that situational factors, such as the urgency of funding, can supersede negative attitudes, thereby influencing credit application intentions. This underscores the necessity for a more comprehensive model to elucidate the mechanisms underlying credit decision-making behavior.

To address this complexity, the present study employs the Theory of Planned Behavior (TPB) as its primary framework. The TPB posits that the intention to engage in a particular behavior is influenced by three factors: attitude toward the behavior, subjective norms, and perceived behavioral control (Jiao et al., 2025). Attitude is defined as a positive or negative evaluation of behavior, subjective norms are defined as perceived social pressure, and perceived behavioral control refers to an individual's beliefs about the ease or difficulty of performing the behavior (Jiao et al., 2025). The TPB has been employed extensively in the field of financial behavior prediction. However, in the context of MSMEs, it has not fully accommodated factors such as perceived access to finance and financial literacy, particularly in Indonesia, a developing country.

This study incorporates two novel variables into the TPB framework: perceived access to finance and financial literacy. The perception of access to finance is indicative of MSMEs' confidence and capacity to secure external funding (Canton et al., 2013; Charfeddine et al., 2024). Financial literacy is defined as MSMEs' comprehension of financial concepts and risk management (Charfeddine et al., 2024). Integrating these two variables is expected to enrich the TPB model and provide a more comprehensive understanding of the determinants of credit application intentions.

The objective of this study is to examine the impact of perceived access to finance, financial literacy, attitudes toward formal loans, perceptions of social norms, and perceived behavioral control on the intentions of MSMEs to apply for formal loans. Moreover, this study identifies policy implications to improve inclusive access to financing.

2. LITERATURE REVIEW

The Theory of Planned Behavior (TPB), developed by Ajzen (1991), posits that the intention to engage in a particular behavior is influenced by three primary factors: attitude toward the behavior, subjective norms, and perceived behavioral control. Attitude is defined as a positive or negative evaluation of behavior, subjective norms are defined as perceived social pressure, and perceived behavioral control refers to an individual's beliefs about the ease or difficulty of performing the behavior (Ajzen, 1991). The TPB has been extensively utilized to predict behavior across various contexts, including entrepreneurship and financial decision-making. Research by Doanh & Bernat (2019) emphasized that the TPB enables the analysis of cognitive processes in decision-making, while Relente & Capistrano (2024) found that attitude, self-efficacy, and perceived behavioral control positively influence entrepreneurial intention. In the context of financing, Ključnikov et al. (2025) employed the TPB to analyze barriers to entrepreneurship and access to bank credit, while Patiro & Budiyantri (2016) examined the intentions of young entrepreneurs in Indonesia, which were influenced by attitudes, social norms, and behavioral control. The TPB framework is pertinent to explaining MSMEs' intentions to apply for formal loans because these intentions are influenced not only by economic rationality but also by attitudes, social pressure, and perceived control. However, in practice, loan application decisions are often contingent on a choice between formal and informal loans. Formal loans, which are characterized by their stringent administrative requirements and physical collateral, are typically originated from financial institutions such as banks. Conversely, informal loans are characterized by reliance on social collateral rather than physical collateral (Dang et al., 2023). Informal loans from family, friends, or private lenders are a key feature of credit markets in developing countries (Kislat, 2015). Despite the lower interest rates associated with formal loans, low-income individuals frequently opt for informal loans due to the perception that informal transactions incur lower costs and are less complex (Guirkingner, 2008). Research by Correia et al. (2022) indicates that informal lenders do not engage in rigorous eligibility screening, thereby placing greater reliance on social relationships in the context of informal credit contracts. According to Karaivanov & Kessler (2018), the enforcement of obligations in informal loans is carried out through social pressure, such as the threat of damaging relationships with family or friends if the borrower fails to repay. This practice contrasts with formal loans, which rely on legal contracts to enforce installment payments. This discrepancy suggests that, in addition to economic factors, social aspects also influence MSMEs' decisions regarding financing sources.

The divergent characteristics of formal and informal loans have been demonstrated to influence the perceptions of MSMEs regarding access to finance. Informal loans from family members, friends, or neighbors, as well as private moneylenders and private traders, are a hallmark feature of rural credit markets in developing countries, a phenomenon that extends to Indonesia (Kislat, 2015). Despite the lower interest rates associated with formal loans, lower-middle-class households demonstrate a preference for informal loans, perceiving them to entail reduced transaction costs (Guirkingner, 2008). In this context, the TPB provides a robust theoretical framework for understanding how attitudes, social norms, and perceived behavioral control influence credit application intentions. This study contributes to the TPB by incorporating two novel variables: perceived access to finance and financial literacy. This integration aims to offer a more comprehensive understanding of the determinants influencing MSME actors' inclination to seek formal loans.

The perception of access to finance is indicative of the confidence and ability of MSMEs to obtain external funding (Canton et al., 2013; Charfeddine et al., 2024). Limited access to external financing is often a significant obstacle for MSMEs due to market imperfections caused by information asymmetry, insufficient collateral, and relatively small funding needs (Kaya, 2024). This condition has the potential to curtail investment opportunities and impede business growth (Aristei et al., 2024). When financial institutions regard MSMEs as high-risk, they often implement more stringent requirements, elevated interest rates, and diminished loan amounts, thereby exacerbating business actors' perceptions of access to finance (Bhattacharyya & Subrahmanya, 2024).

Perceived access to finance (PAF) and perceived behavioral control (PBC) are conceptually related but analytically distinct constructs. PAF is defined as an individual's or firm's perception of the availability and ease of obtaining external financial resources, such as bank loans, credit lines, grants, or informal financing. It is context-specific and resource-oriented, focusing on external constraints imposed by financial institutions, market conditions, collateral requirements, and lending procedures (Carpenter & Petersen, 2002). Consequently, PAF captures perceptions regarding financial system accessibility rather than personal agency.

In contrast, PBC derived from the TPB represents a broader psychological construct reflecting an individual's perceived ability to perform a given behavior, based on both internal factors (i.e., skills, knowledge, confidence) and external conditions (i.e., time, money, opportunities). The concept of perceived control (PBC) transcends the confines of finance, encompassing the broader spectrum of perceived autonomy in executing actions, such as the initiation of business ventures or the adoption of technological advancements (Beck & Demirgüç, 2006). Although PAF may function as one antecedent of PBC, particularly in entrepreneurship or innovation contexts, it does not fully substitute for PBC. PBC incorporates a multifaceted array of control mechanisms that extend beyond mere financial access, encompassing managerial competence and self-efficacy. Therefore, despite the presence of partial overlap, PAF is best conceptualized as a domain-specific external resource perception, whereas PBC is a global control belief influencing intention and behavior. The distinction between perceived access to finance and perceived behavioral control can be observed in Table 1.

TABLE 1 | Conceptual and Measurement Differences between Perceived Access to Finance and Perceived Behavioral Control

Aspect	Perceived Access to Finance	Perceived Behavioral Control
Definition	An individual's or firm's perception of how easy or difficult it is to obtain financial resources such as loans, credit, or investment funds.	An individual's perception of their ability to perform a specific behavior, considering both internal capabilities and external constraints.
Theoretical Origin	Financial constraint theory, credit rationing theory, entrepreneurship and SME finance literature.	Theory of Planned Behavior (Ajzen, 1991).
Main Focus	Availability and accessibility of external financial resources.	Overall perceived control over performing a behavior.
Scope of Control	Narrow and specific to financial resources.	Broad and covers multiple factors beyond finance.
Key Components	Access to bank loans, microfinance, venture capital, government funding, financial institutions' requirements.	Skills, knowledge, experience, self-efficacy, time, money, opportunities, and environmental constraints.
Nature of Perception	Mostly external (institutional and market-related barriers).	Combination of internal (personal capability) and external (situational constraints).
Level of Analysis	Financial environment and institutional support.	Individual or managerial level.
Common Research Contexts	SME performance, entrepreneurial finance, innovation adoption, business growth.	Entrepreneurial intention, green behavior, innovation adoption, compliance behavior.
Typical Measurement Indicators	Ease of obtaining loans, affordability of interest rates, availability of financial support programs.	Perceived ability, confidence, control, and ease in performing a specific action.

Source: Schlaegel & Koenig (2014); (Beck & Demirgüç, 2006) modification

Previous research has shown that perceived access to financing, particularly when conceptualized as constraints to accessing formal credit, influences loan application behavior. Charfeddine et al. (2024) found that perceived difficulty accessing funding increases the likelihood that micro, small, and medium enterprises (MSMEs) will be reluctant to apply for loans. However, these perceptions do not necessarily eliminate loan application intentions, particularly when urgent funding is needed. Naegels et al. (2022) confirmed that female MSME owners intend to apply for formal loans despite negative perceptions of credit, particularly when urgent funding needs arise and more viable financing alternatives are unavailable. These findings suggest that perceived access to finance, as reflected by perceived access barriers, significantly influences the intention to apply for formal loans.

H1: Perceived access to finance influences MSME owners' intention to apply for formal loans.

Financial literacy is a key factor in increasing financial inclusion and long-term financial security (Lyons & Kass-Hanna, 2021). Financial literacy reflects an individual's level of awareness, knowledge, and skills in managing finances. This includes the ability to make informed decisions and develop sound financial practices (Kass-Hanna et al., 2022). An individual must possess sufficient knowledge and skills to choose financial products and services wisely to be considered financially literate (Huston, 2010).

In the context of MSMEs, financial literacy is crucial for entrepreneurs to navigate complex financing options. Sound financial knowledge can increase the likelihood of obtaining loans and reduce credit constraints (Charfeddine et al., 2024), as well as mitigate market imperfections caused by information asymmetry (Aristei et al., 2024). Conversely, low financial literacy can lead to discouragement, increase risk perception, and reduce confidence in applying for loans (Balana et al., 2022; Morales, 2022). Aristei et al. (2024) also found that entrepreneurs with limited financial literacy are reluctant to apply for new financing due to concerns about costs and complex procedures.

Thus, financial literacy influences not only technical financial management skills, but also shapes MSMEs' beliefs and attitudes toward applying for formal loans. The higher the financial literacy, the more likely MSMEs are to intend to access formal financing.

H2: Financial literacy influences MSMEs' intention to apply for formal loans.

Attitudes toward formal loans reflect MSMEs' evaluation of the consequences of using formal loans as either positive or negative (Clement, 2019; Makpotche et al., 2015). Utilitarian beliefs, moral principles, and social influences typically shape these evaluations. Individuals with low incomes tend to have negative attitudes toward loans due to concerns about repayment burdens (Mortenson, 1989). The perception that loan repayment will negatively impact quality of life is directly related to attitudes toward loans (Salas-Velasco, 2024).

Several studies have found that individuals with good knowledge of loans can still have negative attitudes toward repayment obligations (Abu Bakar et al., 2006). This negative attitude often acts as a powerful heuristic, inhibiting the decision to borrow (Morales, 2022). Anti-debt attitudes often arise from stress and concerns about the risk of defaulting on loans (Salas-Velasco, 2024). In fact, borrowers with multiple sources of credit are more vulnerable to default (Bing, 2012). These findings suggest that attitudes toward formal loans significantly impact loan application intentions.

H3: Attitudes toward formal loans influence MSMEs' intentions to apply for them.

Social norms are unwritten rules that influence individuals to behave in ways that conform to societal expectations. In the context of formal lending, perceptions of social norms measure the extent to which MSMEs perceive their peers as supporting the use of formal loans (Clement, 2019; Makpotche et al., 2015). When making financial decisions, individuals tend to conform to the social norms they believe are acceptable in order to gain social acceptance (Bailey et al., 2003). According to Dannals and Li (2024), perceptions of social norms form through three stages: (1) an initial egocentric perception, (2) weighing normative information with varying degrees of specificity, and (3) integrating initial expectations with new information. Changes in perceptions of social norms can lead to significant behavioral changes (Cialdini & Jacobson, 2021).

Cultural values and social norms influence general behavior and financial decisions, including loan applications (Schmid & Sender, 2021; Selmier, 2016). Naegels et al. (2022) found that entrepreneurs' perceptions of social norms can reduce their intention to apply for formal loans. Social norms also influence credit risk management practices and loan portfolio quality (Rahmania et al., 2024). Furthermore, heterogeneous social norms can influence lending decisions through monitoring, reputation, and social sanctions (Li et al., 2023). These findings confirm that perceptions of social norms significantly influence MSMEs' intentions to apply for formal loans.

H4: Perceptions of social norms influence MSMEs' intention to apply for formal loans.

Perceived behavioral control (PBC) is a key component of the SDGs, reflecting the extent to which individuals feel capable of performing a behavior. In the context of loan applications, perceived behavioral control (PBC) refers to MSMEs' perceived ease or difficulty in applying for formal loans (Clement, 2019; Makpotche et al., 2015). The greater the perceived control, the greater the confidence in applying for loans.

Research shows that PBC positively affects the intention to use formal financial services. Widaninggar et al. (2023) emphasized that self-efficacy, a component of PBC, is influenced by perceived preparation and perceived barriers. These factors shape the intention to use loan facilities. Hussain et al. (2021) also found that individuals' perceived ability to use banking technology increases their intention to adopt such services. Nisar et al. (2023) found that internal assessments of feelings of control significantly influence financial behavior, including the decision to apply for a loan.

Thus, perceived behavioral control shapes self-confidence and serves as a crucial factor in MSMEs' intention to access formal financing. The greater the perceived control, the more likely MSMEs are to apply for a loan.

H5: Perceived behavioral control influences MSMEs' intention to apply for a formal loan.

3. RESEARCH METHOD

Using a positivist paradigm and a causal-associative quantitative approach, this study examines how perceived access to finance, financial literacy, attitudes toward formal loans, perceived social norms, and perceived behavioral control influence MSMEs' intention to apply for formal loans. The study population consisted of Indonesian MSME owners who had sought financing within the past year. The research sample was selected using a combination of purposive and convenience sampling methods. Data were collected in October 2025 from 227 MSME respondents who completed the questionnaire. Eleven respondents indicated that they did not require additional funding for their businesses, and one response was deemed invalid. Thus, 215 valid responses were retained for analysis. Efforts to mitigate bias included screening quotas for enterprise size (micro, small, or medium) and ownership demographics (gender of owner/manager). After data collection, the responses were weighted to reflect the national MSME profile reported by the Ministry of Cooperatives and Small and Medium Enterprises. According to this profile, micro enterprises constitute the majority. Participation from all main regions was also aligned with national distributions. These steps increased comparability and reduced systemic sampling bias.

Primary data were collected through an online questionnaire comprising two parts. The first part contained respondents' demographic data, and the second part contained questions that formed the constructs used to test the research hypotheses. The conceptual and operational definitions of these constructs are based on previous research. Attitude toward formal loans (AFL, four items) and perceptions of social norms (PSN, three items) refer to Clement (2019) and Makpotche et al. (2015). Perceived behavioral control (PBC, six items) refers to Makpotche et al. (2015). Perceived access to finance (PAF, nine items) and financial literacy (FL, 13 items) refer to Canton et al. (2013) and Charfeddine et al. (2024), respectively. In this study, perceived access to finance captures MSMEs' subjective perceptions of constraints and barriers to accessing formal financial services rather than ease of access. The construct measuring intention to apply for formal loans (IAL, four items) was defined based on Clement (2019) and Makpotche et al. (2015). All items were measured on a 1–5 Likert scale, with 1 indicating "strongly disagree" or "very unlikely" and 5 indicating "strongly agree" or "very likely." Specifically, Likert scale values are grouped into meaningful categories: 1–2 indicates a low level; 3 indicates a neutral or moderate position; and 4–5 indicates a high level. By establishing these thresholds at the outset, the interpretation of descriptive statistics and empirical findings becomes more systematic and transparent. Consistently applying these categories across variables and constructs helps avoid ambiguity, enhances comparability between results, and ensures that conclusions drawn from the data accurately reflect the underlying measurement scale.

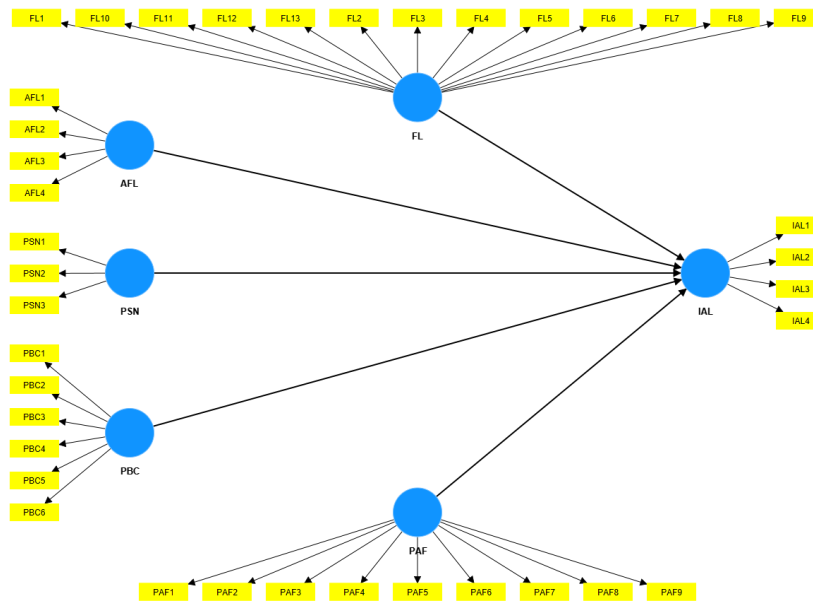


Figure 1. Research Path Model

The data analysis employed the PLS-SEM method (Hair et al., 2022), which included constructing a path model, evaluating the measurement model through validity and reliability tests, and assessing the structural model using VIF, path coefficients with bootstrapping, R^2 , f^2 , and Q^2 . PLS-SEM was chosen because it can handle complex models with many constructs and indicators, and it is suitable for studies with small to medium sample sizes (Hair et al., 2022).

4. RESULTS AND DISCUSSION

4.1 RESULTS

The majority of respondents were small business owners, as defined by Government Regulation Number 7 of 2021. This was indicated by their capital and annual sales value. Most businesses had capital of no more than one billion rupiah and annual sales of no more than two billion rupiah. These figures reflect the characteristics of MSMEs in this study that still face financing constraints.

Funding sources were diverse and non-exclusive, with businesses relying on more than one source, such as a combination of equity and formal loans from financial institutions. This pattern suggests that limited access to formal financing encourages the use of alternative funding sources, such as personal capital and informal loans.

Most respondents owned businesses that were relatively young, aged one to five years. This indicates that MSMEs are still in the development stage and require financial support to strengthen their capital structures and expand their markets. Older businesses tend to have better access to funding, yet they still struggle to meet formal loan requirements. In terms of business type, most operate in the trade sector, which is a common characteristic of MSMEs in Indonesia. This sector requires high working capital to maintain smooth operations, leading to greater dependence on external funding, including formal loans.

TABLE 2 | Respondent Profile Characteristics

Characteristics		Count	%
Firm sector	Processing industry	22	10.23
	Services	26	12.09
	Trade	131	60.93
	Fisheries	4	1.86
	Plantations	4	1.86
	Agriculture	6	2.79
	Livestock	4	1.86
	Other sectors	18	8.37
Firm age	Less than one year	8	3.72
	1-5 years	155	72.09
	6-10 years	17	7.91
	11-15 years	15	6.98
	16-20 years	10	4.65
	21-25 years	4	1.86
	26-30 years	6	2.79
Current capital amount	IDR 1,000,000,000 or less	182	84.65
	More than IDR 1,000,000,000 – IDR 5,000,000,000	22	10.23
	More than IDR 5,000,000,000 – IDR 10,000,000,000	8	3.72
	More than IDR 10,000,000,000	3	1.40
Sales in the last year	IDR 2,000,000,000 or less	174	80.93
	More than IDR 2,000,000,000 – IDR 15,000,000,000	34	15.81
	More than IDR 15,000,000,000 – IDR 50,000,000,000	4	1.86
	More than IDR 50,000,000,000	3	1.40
Current sources of financing	Equity	146	67.91
	Formal loans	125	58.14
	Informal loans	56	26.05

Source: Data Processed (2025)

4.1.1 Measurement Model Evaluation

A measurement model evaluation was conducted to ensure the validity and reliability of the indicators used in the study. First, the reliability of the indicators was tested through the outer loading (OL) value. According to Hair et al. (2022), an indicator is considered reliable if its OL value is greater than or equal to 0.7. Test results showed that most indicators met this criterion except PBC3. As Hair et al. (2022) recommended, indicators with low OL values were evaluated based on their influence on the average variance extracted (AVE). After removing PBC3, the AVE value of the PBC construct increased from 0.574 to 0.613. Reevaluation resulted in outer loading values above 0.7 for each item, indicating reliability (Table 3). Internal reliability was measured using Cronbach's alpha (α), composite reliability (ρ_C), and reliability coefficient (ρ_A). The test results show that all constructs have α , ρ_C , and ρ_A values greater than 0.6, indicating very high reliability (Table 3).

Convergent validity was then assessed to ensure that the indicators of a construct were positively correlated. The results showed that all constructs had AVE values above 0.5, indicating that the indicators explained more than half of the variance of the measured constructs (Table 3). Discriminant validity was tested using the Fornell-Larcker criterion, which states that the square root of the AVE of each construct must be greater than its highest correlation with other constructs. The test results (Table 4) met this criterion. Furthermore, cross-loading analysis showed that each indicator had the highest loading on the measured construct. HTMT (Heterotrait-Monotrait Ratio) testing showed that all values were less than 0.9 (Table 5), indicating that discriminant validity was met. Overall, the test results indicated that, after removing the PBC3 indicator, the outer model met all validity and reliability criteria.

TABLE 3 | The Results of Measurement Model Evaluation

Constructs	Items	OL 1	OL 2	α	ρ_A	ρ_C	AVE
Attitude towards formal loans (AFL)	AFL1	0.890	0.890	0.899	0.929	0.901	0.767
	AFL2	0.875	0.875				
	AFL3	0.874	0.874				
	AFL4	0.865	0.865				
Financial literacy (FL)	FL1	0.746	0.746	0.935	0.944	0.939	0.564
	FL2	0.711	0.711				
	FL3	0.755	0.755				
	FL4	0.717	0.717				
	FL5	0.704	0.704				
	FL6	0.722	0.722				
	FL7	0.851	0.851				
	FL8	0.795	0.795				
	FL9	0.789	0.789				
	FL10	0.776	0.776				
	FL11	0.724	0.724				
	FL12	0.749	0.749				
	FL13	0.714	0.714				
Intention to apply for formal loans (IAL)	IAL1	0.927	0.927	0.945	0.96	0.945	0.858
	IAL2	0.932	0.932				
	IAL3	0.930	0.929				
	IAL4	0.916	0.917				
Perceived access to finance (PAF)	PAF1	0.736	0.736	0.935	0.938	0.962	0.629
	PAF2	0.818	0.818				
	PAF3	0.808	0.808				
	PAF4	0.856	0.856				
	PAF5	0.756	0.756				
	PAF6	0.773	0.773				
	PAF7	0.784	0.784				
	PAF8	0.750	0.750				
	PAF9	0.846	0.846				
Perceived behavioral control (PBC)	PBC1	0.836	0.847	0.842	0.887	0.861	0.613
	PBC2	0.838	0.856				
	PBC3	0.654	-				
	PBC4	0.710	0.717				
	PBC5	0.779	0.776				
	PBC6	0.707	0.707				
Perceptions of social norms (PSN)	PSN1	0.945	0.945	0.915	0.946	0.946	0.853
	PSN2	0.941	0.941				
	PSN3	0.883	0.883				

Note: OL 1 Outer loadings of all items, OL 2 Outer loadings of items after eliminating PBC3

Source: Data Processed (2025)

TABLE 4 | The Results of the Fornell-Larcker Criterion Test

Constructs	AFL	FL	IAL	PAF	PBC	PSN
AFL	0.876					
FL	0.615	0.751				
IAL	0.618	0.550	0.926			
PAF	0.232	0.154	0.216	0.793		
PBC	0.739	0.724	0.573	0.253	0.783	
PSN	0.049	0.149	0.036	0.683	0.126	0.924

Source: Data Processed (2025)

TABLE 5 | Heterotrait-Monotrait Ratio of the Constructs

Constructs	AFL	FL	IAL	PAF	PBC	PSN
AFL						
FL	0.666					
IAL	0.668	0.574				
PAF	0.185	0.151	0.167			
PBC	0.829	0.806	0.632	0.220		
PSN	0.068	0.156	0.049	0.760	0.150	

Source: Data Processed (2025)

4.1.2 Structural Model Evaluation

In this study, the evaluation of the structural model began with a test for collinearity between the independent and dependent variables using variance inflation factor (VIF) values. All VIF values in the inner model were below 5 (see Table 6), indicating that there were no issues of collinearity among the tested constructs. Therefore, the parameter estimates in the model can be interpreted without concern for bias due to multicollinearity.

Path coefficients were tested to determine the significance of the relationships between the independent and dependent

variables (Table 6). The analysis showed that micro, small, and medium enterprises' (MSMEs) perceptions of access to finance, financial literacy, and attitudes toward formal loans positively and significantly influenced their intention to apply for formal loans. Conversely, perceptions of social norms and behavioral control did not significantly influence this intention. These results suggest that internal factors, such as perceived access, literacy, and attitudes, are more influential in shaping MSMEs' intentions to access formal financing than external factors, such as social norms or perceived control.

TABLE 6 | The Results of Structural Model Evaluation

Hypotheses	Total Effect	T statistics	P values	VIF	f ²	R ²	R ² Adjusted
PAF -> IAL	0.171	1.742*	0.082	2.087	0.025	0.449	0.436
FL -> IAL	0.253	1.792*	0.073	2.253	0.052		
AFL -> IAL	0.352	2.929***	0.003	2.363	0.095		
PSN -> IAL	-0.149	1.536	0.125	1.997	0.020		
PBC -> IAL	0.105	0.849	0.396	3.027	0.007		

Source: Data Processed (2025)

The model's explanatory power was measured by the coefficient of determination (R²), which was 0.449 with an adjusted R² of 0.436. This indicates that about 44.9% of the variation in MSMEs' intention to apply for formal loans is explained by the five independent variables in the model. This value is considered moderate and sufficient for research focusing on individual behavior. Furthermore, the effect sizes (f²) for each path show that most of the independent variables have a small impact on the dependent variable, while one has no measurable effect. These results are consistent with the previously described path significance findings.

TABLE 7 | The Results of the Model's Predictive Power

Items	PLS-SEM		LM	
	RMSE	MAE	RMSE	MAE
IAL1	0.636	0.431	0.666	0.479
IAL2	0.638	0.452	0.706	0.526
IAL3	0.639	0.447	0.685	0.505
IAL4	0.650	0.464	0.678	0.493

Source: Data Processed (2025)

We evaluated the predictive power of the model by comparing the RMSE and MAE values of the PLS-SEM and LM models. The results revealed that the PLS-SEM model yielded smaller RMSE and MAE values than the LM model for all indicators of formal loan application intention (see Table 7). These results suggest that the developed model not only explains theoretical relationships between variables, but also has a strong predictive ability for new data outside the study sample..

4.2 DISCUSSION

The results of the structural model evaluation indicate that internal factors, such as financial literacy, attitudes toward formal loans, and perceived access to financing, significantly influence micro, small, and medium enterprises' (MSMEs) intention to apply for formal loans. Conversely, external factors, such as social norms and perceived behavioral control, did not show significant influence. These findings confirm that the decisions of MSMEs to access formal financing are primarily determined by their readiness and confidence rather than social pressure.

4.2.1 The influence of perceived access to finance on the intention of MSMEs to apply for formal loans

In this study, perceived access to finance refers to the subjective perceptions of constraints and barriers that MSMEs face when accessing formal financial services, rather than the ease of access. Perceived access to finance significantly and positively affects MSMEs' intention to apply for formal loans. This suggests that the more challenging it is for MSMEs to obtain funding, the stronger their motivation to seek formal loans becomes. The Perceived Access to Finance (PAF) index reflects MSMEs' subjective perceptions and serves as a benchmark for their confidence in accessing financial products and services (Charfeddine

et al., 2024). Many factors influence loan application decisions and behavior, including access to loan services (Uthaileang & Kiattisin, 2023). The availability of sustainable external funding is a crucial factor (Casey & O’Toole, 2014); inadequate access for MSMEs impacts their business activities (Charfeddine et al., 2024).

TABLE 8 | Respondents’ Perceptions of Access to Finance

Items	Item Descriptions	Mean
PAF1	Lack of credit history will make it difficult to borrow money from banks and financial institutions.	3.73
PAF2	Banks will be reluctant to finance our business because of the high risk involved.	3.20
PAF3	Banks and financial institutions will charge high interest rates.	3.32
PAF4	The size of our business will affect its ability to access funding.	3.17
PAF5	The credit application process is too complex.	3.42
PAF6	The credit application process requires too much paperwork.	3.59
PAF7	The waiting period to get external finance is too long.	3.38
PAF8	Collateral requirements are too strict.	3.59
PAF9	We did not think it would be approved.	3.09
Total		3.39

Source: Data Processed (2025)

The results of the questionnaire demonstrate that MSMEs have a high level of awareness of the importance of a credit track record for accessing formal financing. However, they acknowledge procedural barriers, as evidenced by the high average scores for statements PAF6 and PAF8. These statements indicate that the formal loan application process requires extensive documentation and stringent collateral requirements. Despite these obstacles, MSMEs are not entirely pessimistic about the possibility of having their formal loan applications approved. Instead, they tend to be neutral about the likelihood of loan approval. In conclusion, these positive results indicate that, despite the numerous requirements and difficulties involved in applying for formal loans, PAF continues to influence MSME managers’ intentions to apply for loans in the future. These findings empirically support Naegels et al.’s (2022) proposition that MSMEs, particularly women, remain committed to applying for formal loans despite negative perceptions of them. The reasons are (1) they genuinely need funding and (2) there are no other viable financing alternatives.

4.2.2 The influence of financial literacy on the intention of MSMEs to apply for formal loans

Financial literacy significantly increases MSMEs’ intention to apply for formal loans. The more financially literate MSMEs are, the more likely they are to apply for formal loans. Financial literacy is crucial in developing the skills and abilities of small business owners as they safely navigate complex financial platforms (Ramalho & Forte, 2019; Bejaković & Mrnjavac, 2020). Financial literacy is defined as having the awareness, knowledge, and skills necessary to make informed financial decisions and develop sound financial practices (Lyons & Kass-Hanna, 2021).

TABLE 9 | Respondents’ Financial Literacy

Items	Item Descriptions	Mean
FL1	Our firm analyzes its financial performance periodically.	4.35
FL2	Our firm prepares monthly income statements.	4.46
FL3	We received training on book-keeping.	4.2
FL4	Our firm has bought formal insurance for our business.	3.91
FL5	The management of our firm can compute the cost of its loan capital.	4.2
FL6	Our firm has a savings account.	4.35
FL7	Our management can prepare basic accounting books.	4.28
FL8	Our firm is aware of the required documents to get a bank loan in order to fulfil our financial needs.	4.32
FL9	Our firm is aware of the costs and benefits of accessing credit.	4.33
FL10	Our firm is able to calculate interest rates and loan payments correctly.	4.29
FL11	Our finance team have the skills required to assess the financial outlook for the firm.	4.33
FL12	Our finance team has skill for minimizing losses by minimizing bad debts.	4.29
FL13	The managers of our firm have basic accounting knowledge.	4.35
Total		4.28

Source: Data Processed (2025)

Positive results suggest that MSMEs with good financial literacy should consider applying for formal loans in the future. The questionnaire results also reflect this, indicating that MSMEs generally have excellent financial awareness. This is evidenced

by the highest average score on indicator FL2, which indicates consistency in the formal recording and evaluation of business finances. Additionally, MSMEs received high scores on FL6 and FL13, reflecting ownership of a dedicated business account and adequate basic accounting knowledge. Financial knowledge and motivation are interrelated and contribute to the development of skills and abilities among small entrepreneurs (Uthaileang & Kiattisin, 2023). Financial literacy can increase the likelihood of obtaining loans and reduce credit constraints (Charfeddine et al., 2024), thereby mitigating credit market imperfections (Aristei et al., 2024).

4.2.3 The influence of attitude towards formal loans on the intention of MSMEs to apply for formal loans

MSME owners' attitudes toward formal loans significantly influence their intention to apply for them. These results demonstrate that MSME owners with more positive attitudes toward formal loans are more likely to apply for them.

TABLE 10 | Respondents' Attitudes towards Formal Loans

Items	Item Descriptions	Mean
AFL1	I consider the use of bank loans a good idea.	4.13
AFL2	I believe bank loan is a useful way of financing businesses.	4.14
AFL3	In my opinion the use of bank loan is wise.	4.07
AFL4	Financing investments through bank loan is beneficial.	4.04
Total		4.09

Source: Data Processed (2025)

Overall, respondents demonstrated a positive attitude toward formal loans as a financing source, as evidenced by a high mean AFL indicating agreement that formal loans are beneficial, wise, and profitable. This positive attitude was most evident in AFL2 and AFL1, which suggest that most respondents view formal loans as a positive means of strengthening capital and a reasonable way to expand business capacity. Indicators AFL3 and AFL4 also remained in the "agree" category, confirming respondents' belief that using formal loans is wise and profitable for business development. Micro, small, and medium-sized enterprises (MSMEs) can evaluate different beliefs, such as utilitarian, moral, and social influence, which are unidimensional and positively correlated with positive attitudinal evaluations of loans (Gamble et al., 2019).

Attitude plays a crucial role in financial behavior, enabling individuals to develop positive attitudes toward debt and financial management (Bialowolski & Weziak-Bialowolska, 2021; Gärling et al., 2020). Considering positive attitudes as a mediator between financial literacy and loan repayment intentions is important (Hamid et al., 2025).

4.2.4 The influence of perceptions of social norms on the intention of MSMEs to apply for formal loans

Existing social norms do not influence micro, small, and medium enterprises' (MSMEs) intentions to apply for formal loans in their environment. This finding aligns with that of Hamid et al. (2025), who demonstrated that descriptive norms do not influence loan intentions. Descriptive norms are an individual's attitudes, decisions, and behaviors regarding the repayment of personal loans based on significant others' support or rejection (Ali et al., 2015; Vaona, 2008). The PSN measures the extent to which MSMEs assess their peers' support for their use of formal loans (Clement, 2019; Makpotche et al., 2015).

TABLE 11 | Respondents' Perceptions of Social Norms

Items	Item Descriptions	Mean
PSN1	Most people who are important to me would think that I should not make use of bank loan to finance my business.	3.30
PSN2	Most business owners I know would think that it is not a good idea for me to use bank loan.	3.23
PSN3	My close family members believe it is not a good idea for me to use bank loan.	3.21
Total		3.25

Source: Data Processed (2025)

This lack of influence may stem from respondents' tendency to remain neutral about the views of their social environment. The highest mean score on PSN1 indicates awareness of conservative views from key stakeholders, but this awareness does not particularly influence decision-making. Overall, the moderate means on PSN1, PSN2, and PSN3 suggest that social pressure or

support are not dominant factors in micro, small, and medium enterprises' (MSMEs) decisions to apply for formal loans. Rather, their decisions are driven by internal factors, such as capital needs and financial capabilities.

From a behavioral and social psychology perspective, social norms are theoretically understood to comprise both injunctive norms, reflecting perceptions of what significant others approve or disapprove of, and descriptive norms, reflecting perceptions of what others actually do (Cialdini et al., 1990). In this study, however, the operationalization of social norms primarily captures discouraging or restrictive views toward formal borrowing. Supportive or enabling normative cues, such as encouragement from family members, fellow entrepreneurs, or community institutions, are not incorporated into the measurement. This unidirectional focus may bias the construct toward negativity and limit its ability to fully represent the normative environment surrounding MSMEs' financing decisions.

Previous studies have shown that positive normative pressure can legitimize certain behaviors, reduce perceived risk, and strengthen behavioral intentions, especially in contexts involving uncertainty and financial vulnerability (Ajzen, 1991; Bicchieri, 2006). Consequently, the absence of supportive normative indicators may partially explain the nonsignificant effect of social norms observed in this study. This measurement limitation threatens construct validity and may lead to an underestimation of the true influence of social norms on loan application behavior.

To address this limitation, future research should adopt a balanced, theoretically grounded operationalization of social norms, incorporating positive and negative cues and distinguishing between injunctive and descriptive norms. This approach would allow for a more comprehensive assessment of how social environments influence MSMEs' financial decision-making processes and provide a clearer understanding of the conditions under which social norms facilitate or constrain access to formal financing.

4.2.5 The influence of perceived behavioral control on the intention of MSMEs to apply for formal loans

MSMEs' intention to apply for formal loans is not influenced by their behavioral control. Perceived behavioral control (PBC) refers to the perceived ease or difficulty of MSMEs applying for formal loans (Clement, 2019; Makpotche et al., 2015). In other words, the perceived ease or difficulty of the application process does not significantly impact their intention to apply for formal loans.

TABLE 12 | Respondents' Perceptions of Behavioral Control

Items	Item Descriptions	Mean
PBC1	I think bank processes makes it easy for businesses like mine to access loans.	4.14
PBC2	I believe bank requirements make it easy for businesses like mine to access bank loans.	4.11
PBC3	I believe the repayment plan for bank loans creates uncertainty for businesses seeking bank loan.	3.87
PBC4	I know people who work in the bank that can help me secure a bank loan.	3.61
PBC5	I believe it is easy for me to get a bank loan if my company needs it.	3.86
PBC6	I have full control over the decision to use or not to use bank loan.	4.14
Total		3.96

Source: Data Processed (2025)

This finding is supported by the presence of specific perceived barriers in the external support indicator (PBC5) and the ease of obtaining loans when needed (PBC4). These results suggest that despite internal confidence, external challenges in accessing information and support networks persist. These challenges may explain why PBC does not significantly influence intention. These results align with Clement's (2019) research, which also found no effect of behavioral control on the intention to use bank loans.

4.2.6 Behavioral and Psychological Considerations in MSMEs' Loan Application Intention

According to the theory of planned behavior (TPB), individuals' attitudes, normative beliefs, and perceived behavioral control jointly determine their intentions and subsequent behaviors regarding financial actions, such as applying for loans or engaging with formal financial systems. Attitudes toward formal loans reflect cognitive and affective evaluations of borrowing.

Positive attitudes increase the intention to seek funding. Perceived social norms represent the social pressures or expectations from peers, family, or the community that influence micro, small, and medium enterprise (MSME) owners' choices. Perceived behavioral control captures MSME owners' self-efficacy in accessing and managing financing, which can significantly impact credit uptake and financial management practices. Recent research applying TPB to financial behaviors in MSMEs and similar contexts supports these constructs.

Financial literacy is a vital cognitive resource that shapes both attitudes and perceived control. Higher financial literacy enhances understanding of loan products and confidence in managing finances, thereby reducing barriers to formal credit engagement. Empirical studies confirm that financial knowledge influences financial behavior through psychological constructs such as attitudes and control beliefs. Introducing additional behavioral constructs, such as perceived risk and fear of loan default, enriches the explanatory power of models examining financial decision-making and performance outcomes, particularly among SMEs and micro-entrepreneurs. These constructs may function as suppressor variables, clarifying hidden relationships between independent variables (e.g., financial capability, innovation orientation, or access to finance) and dependent variables, such as firm performance or loan uptake.

Perceived risk reflects an individual's subjective assessment of uncertainty and potential loss when engaging in financial activities. Even when entrepreneurs have adequate resources or capabilities, high perceived risk can weaken or distort the positive effects of these factors on performance. Similarly, loan default fear, defined as anxiety or concern over the inability to meet repayment obligations, may discourage the productive use of credit or reduce the willingness to apply for formal loans. As a suppressor variable, loan default fear can mask the positive impact of access to financing by introducing psychological resistance operating in the opposite direction (Clement, 2019; Makpotche et al., 2015).

Incorporating these behavioral constructs aligns with behavioral finance and behavioral economics perspectives, which emphasize that economic agents do not always act rationally. By controlling for perceived risk and loan default fear, empirical models can better isolate the "net effect" of strategic or capability-based variables, resulting in more robust, theoretically grounded findings. This approach is particularly relevant in contexts characterized by environmental uncertainty and limited financial literacy.

5. CONCLUSION

This study concludes that internal factors, such as financial literacy, positive attitudes toward formal loans, and perceived access to financing, primarily influence micro, small, and medium enterprises' (MSMEs) intention to apply for formal loans in Indonesia. Conversely, neither social norms nor perceived behavioral control show significant influence. These results suggest that improving financial capacity and fostering positive attitudes toward formal loans are crucial in encouraging MSME access to financial institutions. Based on these results, the study recommends improving financial literacy, simplifying formal financing processes and requirements, and developing mentoring programs to strengthen MSMEs' ability to appropriately use credit, including optimizing government-provided financing schemes, such as the People's Business Credit (Kredit Usaha Rakyat). Opportunities for further research include examining contextual variables not covered here, conducting longitudinal analyses, and expanding the scope of sectors and regions to better understand MSME financing behavior and provide a stronger scientific foundation for inclusive and sustainable financing policies.

6. LIMITATION AND IMPLICATION

This study has several limitations that should be considered when interpreting the results. First, the non-probability

sampling method limits the generalizability of the results because the respondents do not fully reflect the diversity of the MSME population in Indonesia. Additionally, the variables used only cover constructs within the extended Theory of Planned Behavior framework. Thus, other factors, such as trust in financial institutions, risk perception, and borrowing experience, are not accounted for. Additionally, the use of electronic questionnaires and the cross-sectional research design preclude tracking behavioral changes over time and may introduce response bias. Funding and time constraints limited the depth of data collection and prevented the study from being expanded through qualitative or mixed-methods approaches.

Another limitation of this study is that the analysis focuses solely on one type of social norm and does not distinguish between injunctive and descriptive norms. Injunctive norms refer to individuals' perceptions of which behaviors are socially approved or disapproved of, while descriptive norms relate to perceptions of which behaviors are most common. By not incorporating both dimensions, the study may not fully capture the complexity of social normative influences on individual behavior. Consequently, the findings may underestimate or oversimplify the role of social norms in shaping attitudes, intentions, or performance outcomes.

Using a single normative perspective exclusively also limits the explanatory power of the research model and reduces its generalizability across different social and organizational contexts. In real-world settings, individuals often respond differently to perceived social approval and to the observed behaviors of others. Ignoring this distinction may lead to incomplete conclusions about the effects of norms. Therefore, future studies are encouraged to include both injunctive and descriptive norms simultaneously to provide a more comprehensive understanding of social influence mechanisms. Incorporating these two dimensions would enrich the theoretical framework, improve measurement accuracy, and strengthen the robustness of empirical findings.

Despite these limitations, this study contributes significantly to the development of MSME financing theory and practice. The finding that financial literacy, perceived access to finance, and positive attitudes toward formal loans significantly influence the intention to apply for formal loans reinforces the behavioral approach's relevance in explaining financing decisions. The results also suggest that internal factors dominate social norms and behavioral control, paving the way for a more context-specific theoretical model for MSMEs in Indonesia. These findings can be applied practically to improve the effectiveness of financing policies by simplifying access to People's Business Credit (KUR), digitizing credit assessment services, and expanding financing schemes for unbankable MSMEs. Financial institutions and MSME facilitators can use these findings to improve financial education and business consulting services and encourage productive credit utilization. Thus, this research enriches academic understanding and opens up opportunities for real-world implementation by fostering synergy among policymakers, financial institutions, and MSME communities to create an inclusive, sustainable financing ecosystem.

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