

The Paradox of Digital Financial Inclusion: Unpacking the Alternative Credit Scoring Gap for MSMEs in FinTech Lending

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Abstract: FinTech lending utilizes alternative credit scoring (ACS) based on digital footprints to expand financial inclusion for Micro, Small, and Medium Enterprises (MSMEs). However, this approach risks excluding marginalized MSMEs that lack extensive digital data. This study explores the paradoxical digital divide in MSME credit assessment and examines the potential of Accounting Information Systems (AIS) to bridge this gap. Employing a descriptive-exploratory qualitative approach, multiple case studies were conducted involving 15 MSME actors with varying digitalization levels in Parepare City, Indonesia. The findings reveal a "signal recognition gap": although most MSMEs possess adequate digital footprints and disciplined financial records, they still receive disproportionately low FinTech financing limits. Current FinTech algorithms appear to assess basic identity and loan history rather than actual business performance or structured accounting signals. Consequently, FinTech lending currently provides only "nominal inclusion" without substantive financial impact. Integrating AIS-generated financial reports into ACS algorithms is critical to provide accurate credit signals, mitigate information asymmetry, and achieve genuine financial inclusion for MSMEs.

Keywords: MSMEs, fintech lending, alternative credit scoring, financial inclusion, accounting information system

1. INTRODUCTION

Micro, Small, and Medium Enterprises (MSMEs) make a significant contribution to the Indonesian economy through job creation, increased public income, and national economic growth (Fatimah & Nadra, 2025). MSMEs play a vital role in driving economic growth and creating employment in Indonesia. Digitalization has become key to business success in the modern era, yet the process of digital adaptation remains a major obstacle for MSME actors (Nugraha F. et al., 2025). Nonetheless, limited access to financing remains one of the primary barriers faced by MSMEs in developing their businesses. Various studies show that the majority of MSMEs struggle to obtain formal financing because they are unable to meet the administrative requirements set by financial institutions particularly those relating to credit history in the Financial Information Service System (SLIK) of the Financial Services Authority (OJK), a minimum of one year of business operation, the availability of physical collateral, and bank account mutation recaps for the past three months (ojk.go.id). These requirements are structurally difficult to fulfill for micro-business operators, most of whom still operate informally.

From the perspective of information asymmetry theory, as put forward by Akerlof, G. A. (1970), this situation can be explained as a consequence of the imbalance of information between financing providers and prospective borrowers. Financial institutions cannot directly observe the quality of a prospective borrower's business, and therefore must rely on indirect signals such as financial statements, credit history, and collateral to assess risk. When such signals are unavailable as is commonly the case with MSMEs financial institutions tend to categorize prospective borrowers as high-risk without considering the actual state of the business (Rahayu S.K., 2024). As a result, the phenomena of adverse selection and credit rationing emerge: even productive MSMEs can be excluded from formal financing simply because they are unable to produce credible informational signals for lenders.

The emergence of financial technology (FinTech) lending platforms over the past decade has brought new hope for resolving this problem. Unlike conventional banking, most FinTech lending platforms have developed credit assessment models known as alternative credit scoring a method that utilizes non-traditional data such as e-commerce transaction history, payment patterns through the Quick Response Code Indonesian Standard (QRIS), frequency of e-wallet usage, social media activity, and other digital behavioral traces as the basis for risk assessment. This approach proceeds from the idea that digital footprints can serve as a relevant proxy for the quality and sustainability of a business, even when the prospective borrower has no formal financial statements (M Distian, 2025).

Various empirical studies support the effectiveness of this approach. Research by Berg et al. (2020), published in the Review of Financial Studies, found that machine learning models using digital data traces were able to predict default risk with accuracy comparable to and in some conditions surpassing conventional credit models based on financial statements and credit bureaus. These findings reinforce the argument that data digitalization can serve as a way out of the information constraints that have long hampered MSME access to financing.

However, the effectiveness of alternative credit scoring in practice is conditional: the model can only function optimally for subjects who have already generated sufficiently structured and consistent digital data traces. Borrowers with minimal data histories (thin-file borrowers) are routinely excluded from conventional credit assessment systems that rely on historical payment records and formal financial traces, and the same problem risks recurring in alternative credit scoring systems if those subjects also fail to generate adequate digital footprints. This creates an unacknowledged natural selection within the FinTech lending ecosystem: MSMEs that actively sell on marketplaces, regularly receive payments through e-wallets, and record their transactions digitally will automatically have a track record that algorithms can assess. By contrast, small grocery stall operators who still conduct cash transactions, street vendors without marketplace accounts, or home-

based craftspeople and livestock farmers who transact via WhatsApp messages without any digital recording remain invisible to digital-data-based credit scoring systems, even though their businesses are factually operating and generating income every day.

This is precisely where the paradox that lies at the heart of this research emerges. FinTech lending was introduced with the promise of democratizing access to finance, yet its credit assessment mechanisms indirectly require that prospective borrowers must first be "digitally connected" to a certain degree. Pushing informal MSMEs to first use marketplaces or digital wallets before they can be deemed eligible for financing is not a solution to the problem of financial exclusion, it is merely a displacement of that problem to an earlier stage. The MSMEs that are most in need of capital those at the very bottom with limited access to technology, are precisely the ones generating the least digital data, and therefore the most difficult for FinTech systems to assess. Consequently, the benefits of alternative credit scoring are empirically enjoyed more by MSMEs that are already at a more advanced stage of digitalization, while the most marginalized MSMEs remain excluded from any formal financing system, whether conventional banking or FinTech lending.

It is in this context that Accounting Information Systems (AIS) become relevant to explore further. AIS does not merely function as a tool for recording transactions, but also as a mechanism for transforming raw data into information that is relevant, reliable, and trustworthy. Through the processes of recording, classifying, processing, and reporting, transaction data scattered across various digital and non-digital channels can potentially be converted into financial information that reflects the actual state of a business more comprehensively and can thus serve as an additional signal for financing providers in assessing the business quality and credit risk of prospective borrowers (Apriyani et al., 2025). Unfortunately, research that specifically explores how this digital divide phenomenon unfolds in practice and what position AIS occupies within it remains relatively limited. Most prior research has tended to focus separately, either on the influence of FinTech on MSME access to financing, or on the influence of AIS implementation on MSME financial performance, without bridging both sides within a unified conceptual framework concerning the exclusion-within-inclusion phenomenon in the FinTech lending ecosystem.

On the basis of the foregoing, this study aims to explore in depth how the digital divide phenomenon occurs in practice within the credit eligibility assessment of MSMEs in the FinTech lending ecosystem encompassing the experiences of MSMEs at varying levels of digitalization, the operational logic of alternative credit scoring algorithms, and the actual and potential role of Accounting Information Systems as infrastructure for the formation of credit signals. This study is positioned as a preliminary exploratory investigation that will serve as a foundation for subsequent research, particularly in the development of a more inclusive AIS integration model within the FinTech lending system.

2. LITERATURE REVIEW

2.1 Information Asymmetry Theory in the Context of MSME Financing

Information asymmetry theory explains the condition in which one party in a transaction possesses more complete information than the other, thereby creating an imbalance in decision-making. In the context of financing, information asymmetry arises because lenders cannot directly observe the quality of a prospective borrower's business or their good intentions, and must therefore rely on indirect signals as the basis for assessment. When the available signals are inadequate or unreliable, two primary consequences may occur: adverse selection, in which lenders are unable to distinguish high-quality borrowers from high-risk ones and thus tend to impose uniform and stringent requirements on all applicants; and moral hazard, in which borrowers who have already obtained financing behave differently from what was expected due to minimal oversight. (Ramadona 2025) In turn, this condition leads lenders to engage in credit rationing, restricting the disbursement of credit

to groups whose risk cannot be adequately verified even though such groups in reality include many productive businesses. MSMEs are structurally positioned in a vulnerable state with respect to these consequences of information asymmetry. Their inability to provide audited financial reports, formal credit history, or adequate collateral makes it difficult for MSMEs to generate signals that conventional financial institutions can rely upon. Information asymmetry theory thus serves as a relevant foundational framework for understanding why limited access to MSME financing is persistent, as well as for examining whether new approaches based on digital data are truly capable of resolving this issue or merely displacing it into a new form.

2.2 Alternative Credit Scoring and Digital Footprint

Alternative credit scoring is a credit assessment approach that utilizes non-traditional data beyond financial reports and formal credit history such as digital transaction data, mobile application usage, social media activity, bill payment patterns, and other digital behavioral traces. This approach enables financial institutions to assess creditworthiness beyond conventional metrics, thereby allowing for more accurate profiles of individuals and businesses with limited formal financial traces, and thus expanding credit access for groups previously underserved by banking. The research by Berg et al. (2020) stands as one of the primary references on this issue. Through a machine learning model tested in the German context, it was found that simple digital footprints including the type of device used, operating system, transaction timing, and similar data were capable of producing default risk predictions that were comparable to or better than conventional credit bureau-based scoring models. Consistent findings were also demonstrated by Agarwal et al. (2019), who studied FinTech institutions in India. That study documented that alternative data derived from individuals' digital presence such as the number and type of installed applications and the size of social connections can serve as a substitute for conventional credit bureau scores in credit risk evaluation and can enhance financial inclusion.

Furthermore, through counterfactual analysis based on machine learning, it was found that alternative credit scoring based on individual digital presence can expand credit access to groups that previously had no credit score, without significantly worsening default outcomes. Nevertheless, several studies also caution that the benefits of alternative credit scoring are neither neutral nor evenly distributed across all borrower groups. Borrowers with minimal data history (thin-file borrowers) are routinely excluded from conventional bureau-based credit assessment systems that rely on historical payment records and formal financial traces. The question then becomes whether digital footprint-based approaches truly resolve this thin-file problem, or instead give rise to a new category of thin-file borrowers, namely those who also have a minimal digital footprint. At the policy level, studies examining the Indonesian context further note that fragmented ministerial data hinders the national consolidation of MSME data, thereby weakening the analytical foundation of such innovative credit assessment systems, and that the mere availability of infrastructure is insufficient, as low digital literacy actually increases vulnerability to fraud and exclusion. These findings reinforce the argument that the existence of digital data alone does not automatically produce equitable inclusion, but may instead create new stratification among MSMEs based on their level of digital maturity.

2.3 Accounting Information Systems as Credit Signal Infrastructure

An Accounting Information System (AIS) is generally defined as an integrated set of procedures, human resources, and technology designed to collect, record, classify, process, and report transaction data into financial information that is relevant for decision-making, both by internal and external parties of an organization. In the context of MSMEs, the implementation of AIS is frequently associated with improved financial performance. Studies conducted in the Indonesian MSME context have found that both financial literacy and the implementation of accounting information systems

have a significant influence on MSME financial performance, with both variables collectively explaining a substantial portion of the observed variation in financial performance. Relatively consistent findings have also been identified in research from other regions in Indonesia, linking the implementation of mobile application-based AIS with MSME financial performance.

The majority of these studies, however, position AIS as a variable that affects internal business performance, such as recording efficiency, reporting accuracy, or managerial decision-making and have not extensively explored the role of AIS as infrastructure that generates credit signals for external parties, particularly FinTech financing providers. Yet conceptually, the quality of financial information produced through AIS in terms of its reliability, consistency, and completeness has the potential to serve as a complement to, or even a counterbalance for, the digital trace data that alternative credit scoring algorithms have come to rely upon. MSMEs that consistently implement AIS-based recording, even if some of their transactions still occur in non-cash or informal settings, have the potential to produce a more structured information trail compared to MSMEs that rely entirely on memory or unsystematic manual records. This gap in the literature constitutes one of the important foundations of the present study: there has been little research that explicitly bridges the discourse on digital footprint-based alternative credit scoring with the discourse on AIS implementation in MSMEs even though both discourses are fundamentally concerned with how reliable information can serve as a solution to the problem of information asymmetry in MSME financing.

2.4 Conceptual Framework

Based on the literature review above, this study is structured around the following conceptual framework. First, the limited access to MSME financing is rooted in the problem of information asymmetry between MSMEs and financing providers. Second, FinTech lending attempts to address this problem through alternative credit scoring based on digital data traces, and this approach has proven technically effective in predicting default risk. Third, this effectiveness is conditional on the availability of structured digital traces, such that MSMEs with minimal digitalization are at risk of experiencing a new form of exclusion even though the substance of their businesses may be genuinely worth financing. Fourth, Accounting Information Systems have the potential to serve as an alternative or complementary infrastructure capable of bridging this gap, yet their role within the FinTech lending ecosystem has not been extensively explored empirically. This conceptual framework serves as the foundation for the exploratory examination of the phenomenon conducted in the methods and discussion sections that follow.

3. RESEARCH METHOD

3.1 Research Approach and Type

This study employs a qualitative approach with a descriptive-exploratory research design. The qualitative approach was chosen because the aim of the research is to gain a deep understanding of how the digital divide phenomenon is experienced and interpreted by MSME actors and relevant stakeholders something more appropriately explored through contextual understanding than through numerical measurement alone. The design used is a multiple case study to allow for comparison of experiences across MSMEs with varying levels of digitalization (N. Budiyo et al., 2025).

3.2 Research Subjects and Location

The research subjects consist of two groups. The first group comprises MSME actors who will be categorized according to their level of business digitalization, including: (a) MSMEs with a high level of digitalization, characterized by active selling on marketplace platforms and/or routine receipt of digital payments; (b) MSMEs with a moderate level of digitalization, which use some digital

channels but not consistently; and (c) MSMEs with a low or negligible level of digitalization, which still conduct transactions in cash and/or through informal communication channels such as instant messaging. The second group consists of supporting informants from the financing provider side, which may include representatives of FinTech lending platforms and/or marketing staff or credit analysts familiar with the mechanisms of MSME credit eligibility assessment. Subject selection was carried out using purposive sampling, with the number of informants adjusted according to the principle of data saturation commonly applied in qualitative research. The research is located in the City of Parepare, South Sulawesi Province, taking into account the accessibility of the research site for the researcher as well as the diversity of MSME characteristics required by the study.

3.3 Data Collection Techniques

Data were collected through three primary techniques. First, semi-structured interviews with MSME actors and informants from the financing provider side, using an interview guide developed in reference to the research conceptual framework, while allowing room for organic exploration of issues that arise naturally during the interview process. Second, observation of transaction recording practices and financial management carried out by MSMEs, in order to obtain a direct picture of the extent to which such practices are systematically documented. Third, documentation study of relevant supporting materials, such as the terms and conditions for financing applications on FinTech platforms, as well as informal financial records held by MSMEs, to the extent that these are available and permission is granted for access.

3.4 Data Analysis Techniques

Data analysis was conducted using thematic analysis, following the stages of data familiarization, initial coding, theme searching, theme review, theme naming, and report writing. The analytical process will be directed toward identifying themes related to three main aspects: the experiences and perceptions of MSMEs regarding access to formal financing; the mechanisms and implications of alternative credit scoring as understood by the informants; and the actual and potential role of accounting recording practices in the visibility of businesses in the eyes of financing providers. Triangulation of data sources that is, between the results of interviews, observations, and documentation, will be used to strengthen the validity of the findings. Ultimately, this systematic synthesis of triangulated data is designed to ensure that the emerging themes accurately reflect the complex reality of the digital divide phenomenon. By grounding the analysis in both the informants lived experiences and their observable accounting practices, this study aims to uncover the underlying mechanisms of the signal recognition gap, thereby providing a robust empirical foundation for proposing a more inclusive Accounting Information System integration model within the FinTech lending ecosystem.

3.5 Methodological Limitations

As a qualitative exploratory study, this research is not intended to produce statistical generalizations, but rather a deep understanding of the phenomenon within the context under investigation. The findings of this study are positioned as a conceptual foundation to be further tested and developed, both quantitatively and through model development, in subsequent research. Second, this study captures the 'signal recognition gap' exclusively from the perspective of MSME actors. Due to constraints in accessing supporting informants from the financing provider side such as FinTech platform representatives or credit analysts the study could not directly cross-verify the MSMEs' experiences with the actual algorithmic logic or credit assessment mechanisms employed by the platforms. Third, the data regarding business turnover and approved FinTech credit limits were entirely self-reported by the informants without independent document verification, which may

introduce perceptual biases or rounding errors. Consequently, the findings of this study are positioned as a conceptual foundation to be further tested and developed, both quantitatively and through the development of integrated alternative credit scoring models, in subsequent research.

4. RESULTS

4.1 Informant Profiles and MSME Digitalization Characteristics

Overall, the profiles of the 15 informants reveal a higher level of digitalization than the initial assumptions made in the literature review. Thirteen of the 15 informants (87%) had previously applied for financing through a FinTech lending platform, 13 had used QRIS or digital transfers as a payment channel, 12 actively marketed their businesses through social media and/or marketplaces, and 14 had engaged in financial recording in some form, ranging from manual cash books to digital accounting applications. A summary of all 15 informant profiles is presented in Table 1.

Table 1. Summary Profile of 15 MSME Informants

No	Business Sector	Financing Status & Limit	Primary Digital Channel	Financial Recording Practice
1	Grocery Stall	FinTech approved Rp1 million	QRIS, WhatsApp	Daily notebook
2	Home Bakery	FinTech approved Rp500 thousand	Transfer, QRIS, Facebook, WhatsApp	Recording app (2 years)
3	General Store	Bank rejected; FinTech Rp2 million	Not specified	Monthly profit-loss report
4	Garment/Convection	Bank Rp20 million; FinTech Rp2 million (not continued)	Not specified	Full Excel report
5	Food Stall	FinTech approved Rp1.5 million	Not specified	Daily cash book
6	Online Clothing	FinTech/marketplace lending Rp2 million	Marketplace lending	Digital accounting app
7	Motorcycle Workshop	Never used FinTech	Not specified	Service & spare parts records
8	Chicken Farm	FinTech approved Rp1 million	Not specified	Weekly feed & sales records
9	Handicrafts	Bank not yet approved; FinTech Rp500 thousand	Not specified	Sales & stock report (3 years)
10	Electronics Store	FinTech approved Rp2 million	Not specified	Excel transactions & monthly report
11	Cosmetics	FinTech Rp1.5 million; KUR in process	Cash, transfer, QRIS, e-wallet, TikTok Shop, Instagram	Daily recording app
12	General Goods	Cooperative & FinTech Rp1 million	Cash, QRIS	Cash book (>5 years)
13	Used Tire Craftsman	Bank not yet approved; FinTech Rp2 million	Facebook, WhatsApp, local marketplace	Weekly Excel
14	Culinary	FinTech approved Rp2 million	QRIS, transfer, Instagram, TikTok	Monthly digital cashier app
15	Fruit Juice	FinTech Rp500 thousand then Rp1 million	Cash, QRIS, transfer, WhatsApp Business, Instagram	Monthly cash book since establishment

This finding is important to note from the outset: in contrast to the picture of "digitally invisible" MSMEs widely discussed in the literature review, the majority of informants in this study already possessed relatively adequate digital footprints and/or financial recording traces. This opens up space for the research to examine another dimension of the inclusion paradox namely, what happens when

digital signals and accounting signals are already available, yet access to financing remains suboptimal.

4.2 MSME Experiences with FinTech Lending Access: Easily Accessible, Minimally Impactful

Interview findings reveal a consistent pattern across nearly all informants who had previously attempted the conventional banking route: applications were hindered by administrative requirements, particularly the availability of collateral and completeness of documentation. The informant from the general store and the informant from the used tire crafts business, for instance, stated that their bank applications had not been approved because the collateral they possessed was deemed insufficient, while the informant from the garment business was the sole case in which a bank application was approved for a substantial amount (Rp20 million) indicating that the conventional route remains accessible under certain conditions, but with prerequisites that are burdensome for most micro-business operators. By contrast, FinTech lending was consistently described by informants as a fast and accessible route, requiring only basic identity documents with no collateral requirement. However, this ease of access was accompanied by what became the central finding of this research: of the 13 informants who had received FinTech approval, 12 obtained a financing limit in the range of Rp500 thousand to Rp2 million, an amount that nearly all informants considered to be far below their actual business capital needs. This gap was most pronounced in the case of the online clothing seller, whose business turnover was approximately Rp15 million per month yet who still received only a Rp2 million limit, and in the garment business case, whose FinTech limit (Rp2 million) was far behind the bank limit obtained (Rp20 million) for the same business. This pattern suggests that the actual scale and performance of a business is not proportionally reflected in the credit ceilings offered by FinTech credit scoring algorithms. Several informants explicitly linked this disappointment to their perception of the assessment criteria used by FinTech platforms. The informant from the general store and the informant from the general goods business conveyed the impression that credit assessment "looks more at loan history" and "the borrower's personal data" rather than the actual state of the business, while the food stall informant felt that their financial records were "not valued because the app only looks at the borrower's identity." These perceptions though arising from the informants' own perspectives rather than from direct verification of the platform's algorithm consistently pointed toward the same impression: credit decisions were felt to be disconnected from the business performance that informants were capable of demonstrating, whether through digital footprints or financial records.

4.3 Financial Recording Practices and AIS among MSMEs

The most consistent finding from the accounting practices dimension is that 14 of the 15 informants had engaged in some form of business transaction recording, ranging from daily manual entries in cash books (including in the grocery stall, food stall, general goods store, and fruit juice businesses, with consistency periods ranging from a few months to more than five years), to report preparation using spreadsheet applications (in the garment, electronics, and used tire crafts businesses), to the use of financial recording or digital cashier applications (in the home bakery, online clothing, cosmetics, and culinary businesses). The level of recording consistency observed including in very small-scale businesses such as the home chicken farm, which recorded feed costs and weekly sales figures every week, indicates that simple accounting practices are not unfamiliar to MSMEs, even among business layers that have long been assumed to have minimal financial literacy. However, the far more conceptually significant finding is that 13 of the 14 informants who maintained financial records stated that those records had never been requested or considered by FinTech

platforms at the time of their financing applications. The informant from the handicrafts business, who had maintained sales and inventory reports for three years, stated directly that they were "disappointed because the business reports that had been compiled were never requested by the FinTech platform, even though those reports showed the business was running well." Similar statements were made by the cosmetics seller and the garment business informant, each of whom had organized their financial records digitally or through spreadsheet applications, but had never been asked to present those documents during the FinTech application process. This finding repositions the problem differently from what was envisioned in the literature review. The initial proposition (Chapters 2.3 and 4.3) emphasized that AIS has the potential to serve as an alternative credit signal for MSMEs that lack transactional digital footprints. However, field data indicates that the problem does not lie solely in the availability of AIS signals, since those signals were in fact already possessed by the majority of informants but rather in the absence of any mechanism on the FinTech provider side to accommodate or even inquire about the existence of such signals. Accordingly, the gap that exists is not merely a data availability gap, but is more accurately described as a signal recognition gap.

4.4 The Inclusion Paradox in Field Findings

These field findings enrich the understanding of the inclusion paradox that lies at the heart of this research. In the literature review, that paradox was described primarily as a form of exclusion for MSMEs lacking structured digital footprints. However, the majority of informants in this study were actually relatively well-digitalized: they received payments through QRIS or digital transfers, some were active on social media and marketplaces (including through TikTok Shop and Instagram), and almost all maintained financial records in some form. According to the logic of alternative credit scoring in the literature review, this group should have been among those most benefited by digital-footprint-based credit scoring. In practice, they still obtained very limited access to financing, with credit limits that 12 of the 15 informants found to be disproportionate to their capital needs and actual business scale. This phenomenon can be interpreted as a form of "nominal inclusion": MSMEs are not formally rejected and in fact easily obtain financing approval and are thus statistically recorded as an included group yet the amount of financing received is too small to produce any substantive impact on business development. The limits of Rp500 thousand to Rp2 million received by most informants were described by the fruit juice and chicken farm informants as "not making a significant difference to business development" and "not enough to buy feed in large quantities." Thus, the inclusion promised by FinTech lending at the level of basic access does not automatically translate into inclusion at the level of impact a distinction not widely emphasized in the literature, which generally measures inclusion solely by the presence or absence of credit approval. Within the information asymmetry theory framework underpinning this research, these findings indicate that a shift in the type of signal, from formal financial signals to digital signals does not automatically resolve the problem of information asymmetry, even when those digital signals are already available. Credit scoring algorithms that, according to informants, appear to rely more heavily on borrower identity and prior loan history than on business performance signals whether in the form of transactional digital footprints or accounting records risk replicating the same credit rationing logic found in conventional banking systems, but with different filtering variables.

4.5 The Position of Accounting Information Systems as an Alternative Credit Signal

The study could not directly cross-verify the MSMEs' experiences with the actual algorithmic logic or credit assessment mechanisms employed by the platforms. Consequently, the findings of this study are positioned as a conceptual foundation to be further tested and developed, both quantitatively

and through the development of integrated alternative credit scoring models, in subsequent research. One of the strongest findings of this research is the uniformity of informants' aspirations: all 15 informants expressed a desire for their business financial reports to be considered as a basis for credit eligibility assessment, rather than relying solely on identity data or loan history. This aspiration was expressed with relatively consistent wording across sectors, from the general store informant who suggested that "a business that has been running for a long time with stable cash flow should be eligible for financing," to the culinary and cosmetics business informants who hoped that turnover and financial statements would be used as the basis for assessment, to the motorcycle workshop informant who, despite never having used FinTech, hoped that business reports would serve as the basis for credit scoring should they ever do so. These findings empirically support the proposition in Chapter 4.3 that AIS has the potential to serve as a credit signal that complements or balances digital signals, while also demonstrating that this potential in the context studied has not yet been realized, for two interrelated reasons: first, the FinTech lending ecosystem in practice does not yet have a mechanism for receiving or verifying MSME financial reports as part of its assessment process; and second, MSMEs themselves are generally unaware that the reports they independently compile could potentially hold value as credit signals, and therefore no informant made any active effort to proactively include those reports in their financing applications.

4.6 Synthesis of Field Findings with the Theoretical Framework

Integrating the findings from Chapters 4.1 through 4.5, this study puts forward three revised propositions that expand upon the initial conceptual framework in Chapter 2.4. First, the inclusion paradox in the FinTech lending ecosystem does not occur solely among MSMEs with minimal digital footprints as emphasized in the literature review but is also experienced by MSMEs that are sufficiently digitalized and that maintain consistent financial recording practices, in the form of inclusion that is nominal in character: formally approved, yet minimally impactful in substantive terms. Second, the core problem revealed by the field data is not primarily a signal availability gap, but rather a signal recognition gap that is, the unwillingness or inability of FinTech credit scoring systems to capture and utilize business performance signals, whether sourced from digital footprints or from MSME accounting practices, in an optimal manner. Third, Accounting Information Systems are in practice already widely implemented by MSMEs across varying levels of digitalization, such that the primary challenge does not lie in the need to "encourage" MSMEs to begin recording, but rather in the need to build the institutional and technical bridge that would allow those records to be recognized and verified as part of the FinTech credit assessment process. This synthesis reaffirms the relevance of information asymmetry theory as an interpretive framework, while adding an important nuance: the availability of signals whether in the form of digital footprints or accounting records turns out not to be a sufficient condition for overcoming information asymmetry in MSME financing. The necessary condition is only met when those signals are also recognized, verified, and actively utilized by the financing provider in its assessment process.

Table 2. Summary of Findings from 15 MSME Informants

Finding	Number of Informants
Have used FinTech lending	13 persons
Have never used FinTech	2 persons
Complained about FinTech limit of Rp500 thousand–Rp2 million	12 persons
Already maintain financial records	14 persons
Use QRIS/digital transfer	13 persons

Finding	Number of Informants
Use social media/marketplace	12 persons
Feel financial reports were not used in FinTech assessment	13 persons
Want financial reports to serve as the basis for credit scoring	15 persons

5. DISCUSSION

This study finds that the core problem does not lie in the absence of business information, as widely assumed in prior literature. The majority of informants already maintained reasonably good financial records and had made use of various forms of business digitalization, such as QRIS, marketplaces, and financial recording applications. This study finds that the core problem in MSME financing does not merely lie in the absolute absence of business information, a premise widely assumed in classical financial literature. Traditional theories of information asymmetry (Akerlof, 1970) and credit rationing (Stiglitz & Weiss, 1981) argue that lenders restrict credit primarily because borrowers cannot provide verifiable signals of business quality. However, field findings reveal a paradigm shift: the majority of informants already maintain reasonably good financial records and utilize various forms of business digitalization, such as QRIS and digital marketplaces. Despite the proliferation of digital adoption driven by recent technological advancements (Nugraha et al., 2025), this rich reservoir of data remains fundamentally unutilized in the FinTech credit assessment process. This condition points to the severe disconnect between the availability of business performance data at the grassroots level and the capacity of FinTech algorithms to recognize and leverage it as a valid basis for credit assessment. Current alternative credit scoring (ACS) models heavily promote the use of digital footprints to expand financial inclusion. Empirical evidence by Berg et al. (2020) and Agarwal et al. (2019) demonstrates that non-traditional data, such as e-commerce transactions and digital behavioral traces, can predict default risk effectively. Furthermore, institutional reports emphasize that digital data trails are crucial for assessing thin-file borrowers (Demirgüç-Kunt et al., 2022; International Finance Corporation, 2026). Yet, the mere existence of these algorithmic infrastructures does not guarantee equitable or accurate access (Hermawan, 2025; Lestari & Deze, 2026). The findings of this study corroborate this critique, demonstrating that FinTech platforms frequently prioritize superficial algorithmic metrics such as basic identity verification or historical loan presence, over actual operational performance. Consequently, MSMEs experience only "nominal inclusion," wherein they are granted credit access, but with disproportionately low limits that fail to generate substantive developmental impact. To resolve this signal recognition gap, the problem of information asymmetry in MSME financing cannot be resolved merely by making raw digital data available; it requires a mechanism capable of verifying and systematically translating that data into credible risk profiles. In this context, Accounting Information Systems (AIS) emerge as the critical bridge. Prior research highlights that digital-based AIS optimization significantly enhances the quality and reliability of financial information (Apriyani et al., 2025). When MSMEs meticulously record their cash flows and sales bolstered by adequate financial literacy (Mas'ud et al., 2025), they produce structured accounting signals that significantly mitigate agency conflicts and information asymmetry between borrowers and lenders (Muuna et al., 2023). Therefore, integrating AIS-generated financial reports into FinTech credit scoring algorithms is imperative. By calibrating ACS to verified turnover figures and cash flow stability—FinTech platforms can produce eligibility assessments that are not only technologically advanced but also objectively accurate. This structural integration will ensure that the financing access provided is no longer merely nominal in character, but rather a substantive catalyst capable of delivering meaningful and sustainable impact on MSME development.

6. CONCLUSIONS

An exploration of the literature combined with field verification involving 15 MSME actors in the City of Parepare reveals that the inclusion paradox within the FinTech lending ecosystem unfolds in a form more complex than that depicted by the literature alone. Rather than simply excluding MSMEs with minimal digital footprints, the field findings show that the majority of informants already possessed a relatively good level of digitalization and financial recording discipline, yet still obtained FinTech financing in very limited amounts generally between Rp500 thousand and Rp2 million that were disproportionate to the scale and performance of their businesses. This pattern indicates that the core problem lies not primarily in the availability of credit signals, but rather in the gap between the availability of those signals and their recognition by FinTech credit scoring systems a phenomenon that this study interprets as a signal recognition gap. Accounting Information Systems, which in practice have already been independently implemented by MSMEs across a range of sectors and levels of digitalization, continue to hold considerable potential as an inclusive alternative credit signal infrastructure; however, that potential has yet to be actively harnessed by the existing FinTech lending ecosystem.

7. IMPLICATIONS FOR RESEARCH

This study has a number of limitations that should be taken into account when interpreting its findings. First, the primary data collected derives from 15 MSME informants in a single city (Parepare), meaning the findings are not intended for statistical generalization, but rather as a deep contextual understanding that still needs to be tested across broader geographic contexts and larger sample sizes. Second, the study was not able to reach supporting informants from the financing provider side such as FinTech platform representatives or credit analysts as originally planned in Chapter 3.2. As a result, the interpretation of FinTech credit assessment mechanisms in this study is drawn entirely from the perceptions and experiences of MSME informants, and has not yet been directly confronted with the actual algorithmic logic employed by the platforms in question. Third, the financing limit and business turnover data in this study are self-reported without independent document verification, and therefore potentially subject to perceptual bias or rounding by informants. In light of these limitations, subsequent research in this series of studies is recommended to: (a) conduct triangulation by interviewing FinTech lending platform representatives and/or credit analysts to verify the proposition regarding the signal recognition gap from the financing provider's perspective; (b) expand the sample scope to cover more diverse regions and MSME sectors in order to test the consistency of the nominal inclusion findings in a broader context; and (c) develop and quantitatively test a model for integrating Accounting Information Systems into alternative credit scoring mechanisms for instance, through a facilitated MSME financial report verification scheme whose outputs can be recognized as one of the credit assessment variables by FinTech lending platforms.

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