

Fintech Lending and Financial Inclusion in Indonesia: A National and Regional Perspective

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ABSTRACT

Purpose – This paper examines the role of fintech lending in strengthening national financial inclusion in Indonesia. The topic is important because fintech lending is often promoted as a digital credit channel that can expand access to finance, yet its contribution must be assessed not only from loan growth, but also from regional equity, productive use, borrower inclusion, and credit risk.

Design/methodology/approach – This study uses a quantitative descriptive approach with spatial analysis. Secondary data were obtained from OJK's LPBBTI December 2025 statistics. The analysis covers national and provincial fintech lending indicators, including loan disbursement, borrower accounts, Java and non-Java distribution, productive-sector lending, MSME borrowers, gender distribution, and TWP90.

Finding/Results – The findings show that fintech lending has expanded credit access nationally, but its distribution remains concentrated in Java and major economic provinces. Productive-sector lending and MSME participation remain limited, while gender access is relatively balanced. TWP90 also indicates that inclusion must be assessed together with repayment sustainability.

Originality/Value – This study contributes by framing fintech lending inclusion through access, equity, productive quality, and risk sustainability. The main implication is that fintech lending policy should move beyond credit expansion toward more productive, regionally balanced, and responsible financial inclusion.

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1. Introduction

Financial technology has become an important instrument in expanding financial inclusion, particularly in emerging economies where conventional banking services do not always reach households, micro-enterprises, and geographically dispersed communities. In Indonesia, fintech lending is increasingly positioned as an alternative credit channel that connects lenders and borrowers through digital platforms, allowing faster access to financing outside traditional banking procedures. The significance of this issue lies in the national policy expectation that fintech can support broader access to finance, reduce exclusion, and strengthen economic participation. Yet, financial inclusion should not be understood merely as the expansion of borrowing activity; it must also be assessed through access, distribution, productive use, and sustainability. Recent studies emphasize that fintech can support inclusion, but its impact depends on institutional context, market structure, digital readiness, and regulatory capacity ([Mashoene et al., 2025](#); [Del Sarto & Ozili, 2025](#)). Similarly, [Neelam and Bhattacharya \(2022\)](#) and [Cevik \(2025\)](#) emphasize that fintech can broaden access only when digital infrastructure, regulation, and user capability develop together.

The problem addressed in this study is whether fintech lending has contributed meaningfully to national financial inclusion in Indonesia, and whether such inclusion is distributed equitably across regions and borrower groups. Although fintech lending may increase access to credit, unequal digital infrastructure, regional economic concentration, financial literacy gaps, and platform-based risk may create new forms of exclusion. Indonesia provides a relevant empirical setting because fintech lending grows within a highly diverse archipelagic economy, where Java and non-Java regions differ in population density, market access, income structure, and digital penetration. Earlier evidence from Indonesia shows that digital financial services are closely related to inclusion, yet their effectiveness varies across demographic and literacy conditions ([Setiawan et al., 2024](#); [Widyastuti et al., 2024](#)). [Maskara et al. \(2021\)](#) and [Tok and Heng \(2022\)](#) further show that digital lending can fill gaps left by conventional financial institutions, although inclusion effects vary across locations and user groups.

This study is conducted to examine fintech lending as a national financial inclusion instrument using a quantitative descriptive approach with spatial analysis. The research focuses on four dimensions: scale, equity, productive quality, and risk sustainability. Scale is observed through loan disbursement and borrower accounts; equity is examined through regional and gender distribution; productive quality is assessed through MSME and productive-sector financing; and sustainability is evaluated through TWP90. This design allows the study to move beyond a general claim that fintech increases inclusion, toward a more specific explanation of who benefits, where lending is concentrated, and whether the financing supports productive economic activity. The use of aggregated OJK LPBBTI data is appropriate because it records fintech lending distribution by province, borrower category, sector, gender, and credit risk indicator. Digital adoption and digital financial inclusion studies in Indonesia also show the importance of linking financial access with enterprise development and broader economic outcomes ([Affandi et al., 2024](#); [Amaliah et al., 2024](#)). [Tao et al. \(2023\)](#) and [Guo et al. \(2024\)](#) further associate digital finance with entrepreneurship, poverty reduction, and inclusive growth, supporting the need to evaluate inclusion beyond simple loan expansion.

Accordingly, this study asks: how does fintech lending contribute to national financial inclusion in Indonesia; how is fintech lending distributed across provinces; to what extent does

it support MSME and productive sectors; and whether inclusion remains sustainable when viewed through credit risk. The objective is to provide empirical evidence on the role of fintech lending in strengthening national financial inclusion while identifying possible spatial concentration, borrower imbalance, and sustainability concerns. The expected contribution is both theoretical and methodological. Theoretically, the study clarifies that financial inclusion must be evaluated as access plus quality, equity, and risk. Methodologically, it offers a descriptive-spatial framework that can be applied to official fintech lending statistics without relying solely on individual survey data or causal econometric models (Guerra-Leal et al., 2023; Demir et al., 2022).

The theoretical contribution of this study lies in reframing fintech lending as more than a digital credit access mechanism. While much of the fintech inclusion literature emphasizes access, adoption, and platform expansion, this study argues that financial inclusion must also be assessed through the quality and distribution of credit outcomes. In this framework, fintech lending contributes to inclusion only when it expands access, reaches regions and borrower groups more equitably, supports productive economic activity, and maintains repayment sustainability. This perspective helps distinguish between **nominal inclusion**, where more people borrow through digital platforms, and **substantive inclusion**, where digital credit contributes to productive, balanced, and sustainable financial participation. The Indonesian case is particularly relevant because fintech lending operates within an archipelagic economy where regional inequality, digital infrastructure gaps, and market concentration shape how digital financial services are actually used. Thus, the study contributes to digital financial inclusion scholarship by showing that fintech lending remains geographically embedded, economically selective, and risk-sensitive rather than automatically inclusive. Peer-to-peer lending research likewise cautions that expanded digital intermediation does not automatically guarantee broader inclusion, making allocation quality an important dimension of assessment (Berentsen & Markheim, 2021).

2. Methodology

2.1 Research Design

This study applies a quantitative descriptive design with descriptive-spatial analysis to map the national and provincial patterns of fintech lending and financial inclusion in Indonesia. The design does not test causal effects or statistical significance; instead, it compares the scale, geographic distribution, productive orientation, borrower composition, and repayment quality reported in official administrative statistics. Spatial analysis in this study is non-econometric and non-geostatistical: provinces are treated as geographic units of comparison, and spatial concentration is interpreted through regional shares, Java–non-Java differences, and the concentration ratio of the five provinces with the largest loan disbursement. This design is appropriate for identifying where fintech lending is concentrated, which borrower groups participate, how much financing is directed to productive activity, and whether access is accompanied by sustainable repayment performance.

Table 1. Conceptual Framework of Fintech Lending and Financial Inclusion

Conceptual Dimension	Empirical Indicator	Analytical Meaning
Access expansion	Loan disbursement and borrower accounts	Shows the scale of fintech-based credit access
Spatial equity	Java and non-Java distribution, provincial loan share	Shows whether inclusion is regionally balanced
Borrower equity	Gender and MSME borrower distribution	Shows who participates in fintech lending
Productive quality	Productive-sector and MSME financing	Shows whether lending supports economic activity
Sustainability	TWP90	Shows repayment risk and durability of inclusion

2.2 Data Source and Unit of Analysis

The study uses secondary data from Statistik Layanan Pendanaan Bersama Berbasis Teknologi Informasi (LPBBTI) December 2025, published by the [Otoritas Jasa Keuangan \(OJK\)](#). The publication compiles aggregated monthly reports submitted by licensed fintech lending providers through SILARAS and covers conventional and sharia-based LPBBTI. The unit of analysis is the Indonesian province, supplemented by national aggregates. To avoid mixing indicators with different measurement status, loan disbursement is treated as a financing-flow indicator for the reporting period, outstanding loans as the stock of unsettled financing at the end of December 2025, active borrower accounts as the number of accounts with outstanding exposure at the reporting date, and TWP90 as the proportion of outstanding financing more than 90 days past due. Provider assets, liabilities, and equity are also interpreted as month-end stock indicators. Provincial statistics are used for spatial comparison, whereas national aggregates are used to describe industry scale and the broader profile of fintech-based inclusion.

2.3 Variable Definitions

This section clarifies how each analytical dimension is operationalized in the study. The variables are defined based on fintech lending indicators that reflect access, spatial distribution, productive orientation, borrower characteristics, and repayment sustainability, as shown in Table 1. Table 2 summarizes the operational definitions and measurement purposes used for each research indicator.

For reporting consistency, the analysis separates flow indicators from stock and ratio indicators. Loan disbursement represents financing distributed during the reporting period; outstanding loans, provider balance-sheet values, and active borrower accounts represent end-of-period positions; regional and borrower-group shares are derived proportions; and TWP90 is a month-end credit-quality ratio. Comparisons are therefore made only among indicators with the same measurement status, while disbursement and outstanding values are not treated as interchangeable.

Table 2. Operational Definition of Research Variables and Indicators

Variable	Indicator	Measurement	Purpose
Fintech access	Borrower accounts	Count	Access breadth
Loan scale	Total loan value	IDR	Financing scale
Spatial distribution	Loans & accounts by province	IDR & share	Regional spread
Regional equity	Java vs non-Java share	%	Geographic balance
Concentration	Top 5 provinces' share	%	Market dominance
Productive use	Productive-sector loans	IDR & %	Economic impact
MSME inclusion	MSME loans & accounts	Count & IDR	MSME participation
Gender inclusion	Male vs female loans	Count, IDR, %	Gender access
Risk	TWP90	%	Default risk

2.4 Data Analysis Technique

The analysis combines descriptive statistics, comparative ratios, concentration measures, and descriptive-spatial interpretation. Shares and proportions are calculated for Java and non-Java, male and female borrowers, MSME and non-MSME borrowers, and productive and non-productive financing. Provincial concentration is summarized using the concentration ratio of the five largest provinces (CR5), calculated as the combined share of their loan disbursement in the national total. No inferential test, spatial-regression model, or causal estimator is applied. Accordingly, the results are interpreted as observed distributional patterns in the December 2025 OJK dataset rather than as evidence that fintech lending caused changes in financial inclusion. This combination of methods allows the study to assess the scale, distributional equity, productive orientation, and repayment sustainability of fintech lending within the limits of aggregated administrative data.

3. Results and Discussion

3.1 National Profile of Fintech Lending in Indonesia

Indonesia's fintech ecosystem has developed across several service categories, including *e-wallet*, digital payment, *payment gateway*, investment platforms, *paylater*, and peer-to-peer lending. Popular digital payment platforms such as GoPay, OVO, DANA, ShopeePay, LinkAja, and Flip illustrate how fintech has become embedded in daily transactions, while investment platforms such as Ajaib and Bareksa represent the expansion of digital financial services beyond payment functions. This broader ecosystem is relevant because it shows that fintech has become part of Indonesia's financial behavior. Nevertheless, this study specifically focuses on fintech lending because it is directly related to credit access and national financial inclusion.

Table 3. National Profile of Fintech Lending Indicators in Indonesia

Indicator	December 2025 Value	Interpretation
Number of fintech lending providers	95 providers	Indicates formal industry scale
Conventional providers	88 providers	Dominant business model
Sharia-based providers	7 providers	Indicates Islamic fintech lending presence

Indicator	December 2025 Value	Interpretation
Total assets	Rp11.27 trillion	Institutional financial capacity
Total liabilities	Rp4.13 trillion	Industry obligation structure
Total equity	Rp7.13 trillion	Capital strength of providers
Total loan disbursement	±Rp30.18 trillion	Scale of credit distribution
Borrower accounts	±15.32 million accounts	Breadth of credit access
Outstanding loans	±Rp96.62 trillion	Current loan exposure
Productive-sector lending	Rp5.42 trillion	Productive financing contribution
Productive-sector share	17.96%	Quality of productive inclusion
TKB90	95.68%	Loan repayment success rate
TWP90	4.32%	Default risk above 90 days

Based on LPBBTI December 2025, Indonesia had 95 fintech lending providers, consisting of 88 conventional providers and 7 sharia-based providers. The industry recorded total assets of Rp11.27 trillion, total liabilities of Rp4.13 trillion, and total equity of Rp7.13 trillion. These figures indicate that fintech lending is not merely a digital application phenomenon, but a regulated financial intermediation sector with measurable institutional capacity under OJK supervision. The LPBBTI data also define fintech lending as a technology-based service that connects lenders and borrowers through an electronic system using the internet. Table 3 consolidates these national indicators and clarifies their interpretation for financial inclusion analysis.

From the financial inclusion perspective, fintech lending contributes by expanding alternative access to financing for individuals, households, and business actors who may face constraints in obtaining conventional bank credit. Its main advantages are speed, flexibility, digital accessibility, and simplified procedures. Yet, the national profile also shows that financial inclusion should not be assessed only by loan volume and borrower numbers. The productive-sector share of 17.96% suggests that fintech lending is stronger as an access-expansion mechanism than as a productive-financing instrument. This finding provides the basis for the next analysis on spatial distribution, MSME inclusion, gender access, and lending risk. At the user level, financial behavior and literacy have also been shown to influence peer-to-peer lending-based financial inclusion in Jakarta ([Sun & Angelina, 2022](#)).

3.2 Spatial Distribution of Fintech Lending Access

The spatial distribution of fintech lending indicates that digital credit access in Indonesia is still concentrated in particular regions rather than evenly dispersed across the country. Based on LPBBTI December 2025, Java recorded 11,240,613 borrower accounts with total fintech loan disbursement of approximately Rp21.63 trillion. In comparison, non-Java regions recorded 4,083,281 borrower accounts with total loan disbursement of approximately Rp8.56 trillion. This means that Java accounted for 73.35% of total borrower accounts and 71.65% of total fintech loan disbursement, while non-Java regions represented only 26.65% of borrower accounts and 28.35% of loan disbursement. These figures show that fintech lending has expanded financial access nationally, yet the expansion remains spatially unequal. Table 4 explicitly compares borrower-account and loan-disbursement shares between Java and non-Java regions.

Table 4. Distribution of Fintech Lending by Region: Java and Non-Java

Region	Borrower Accounts	Share of Borrower Accounts	Loan Disbursement	Share of Loan Disbursement
Java	11,240,613	73.35%	Rp21.63 trillion	71.65%
Non-Java	4,083,281	26.65%	Rp8.56 trillion	28.35%
Total	15,323,894	100.00%	Rp30.18 trillion	100.00%

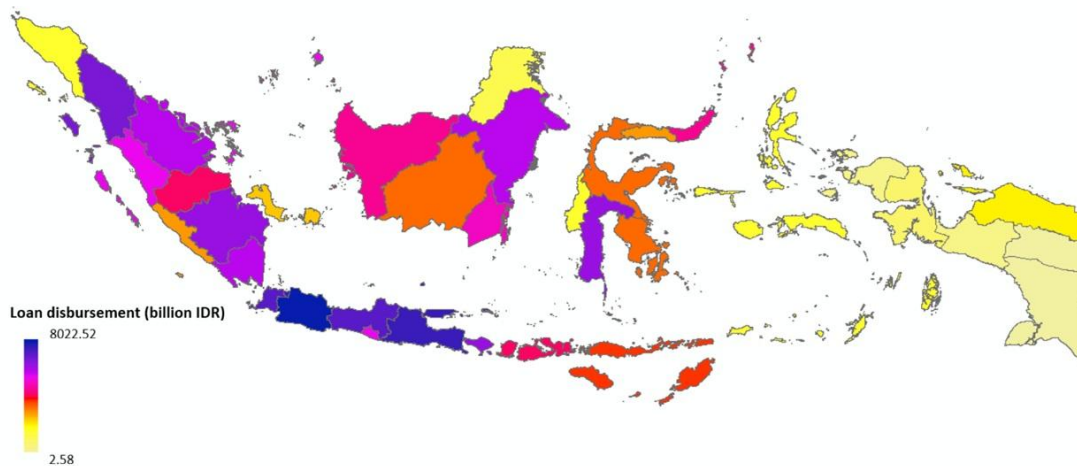


Figure 1. Distribution of Fintech Loan Disbursement in Indonesia

At the provincial level, fintech lending is strongly concentrated in several major economic centers. Provinces in Java dominate both borrower accounts and loan values, particularly West Java, DKI Jakarta, East Java, Central Java, and Banten. This concentration suggests that fintech lending follows the geography of population density, digital infrastructure, purchasing power, and economic activity. Although fintech platforms operate digitally, their distribution does not automatically detach from existing regional economic structures. Regions with stronger digital readiness and market demand tend to absorb larger fintech lending flows. Figure 1 visualizes this geographic pattern and shows the uneven spatial distribution of fintech loan disbursement across Indonesia.

This finding confirms that fintech lending contributes to national financial inclusion by expanding credit access, but the inclusion remains territorially uneven. From a policy perspective, fintech lending should not only be evaluated through national growth indicators, but also through regional distribution. A high national lending value may conceal unequal access between Java and non-Java. Strengthening digital infrastructure, improving financial literacy, supporting region-based fintech products, and expanding borrower protection outside Java are necessary to make fintech-based financial inclusion more balanced across Indonesia.

3.3 Concentration of Fintech Lending in Major Provinces

The concentration analysis shows that fintech lending access in Indonesia is not only concentrated at the regional level, but also clustered in a small number of major provinces. Based on LPBBTI December 2025, the five provinces with the largest fintech loan disbursement were West Java, DKI Jakarta, East Java, Central Java, and Banten. All of these provinces are located in Java, indicating that fintech lending follows the geography of Indonesia's main economic centers. West Java recorded the highest fintech loan disbursement, reaching Rp8.02

trillion, equal to 26.58% of total national fintech lending. DKI Jakarta followed with Rp4.60 trillion or 15.25%, while East Java, Central Java, and Banten recorded Rp3.59 trillion, Rp2.66 trillion, and Rp2.32 trillion, respectively.

Table 5. Top Five Provinces by Fintech Loan Disbursement

Rank	Province	Borrower Accounts	Loan Disbursement	Share of National Loan Disbursement
1	West Java	4,460,675	Rp8.02 trillion	26.58%
2	DKI Jakarta	2,037,194	Rp4.60 trillion	15.25%
3	East Java	1,864,587	Rp3.59 trillion	11.90%
4	Central Java	1,486,786	Rp2.66 trillion	8.81%
5	Banten	1,156,689	Rp2.32 trillion	7.68%
Total Top Five		11,005,931	Rp21.20 trillion	70.22%

The top-five concentration ratio reached **70.22%**, meaning that more than two-thirds of national fintech loan disbursement was absorbed by only five provinces. This finding confirms that fintech lending has a strong concentration pattern. Although digital lending platforms are theoretically borderless, their actual use remains closely tied to population concentration, urban economic activity, digital infrastructure, and borrower demand. West Java's dominant position reflects its large population base and strong household and business credit demand, while DKI Jakarta's high share reflects its role as the national financial and digital economy center. As reported in Table 5, the five leading provinces jointly absorbed 70.22% of national fintech loan disbursement.

This concentration has important implications for national financial inclusion. On one side, the large lending volume in major provinces shows that fintech lending is capable of expanding access at scale. On the other side, the dominance of Java-based provinces suggests that fintech lending has not yet fully reduced regional disparities in financial access. If national financial inclusion is understood as equitable access across territories, fintech lending still requires stronger expansion beyond the main economic corridor. The concentration pattern indicates that fintech contributes to inclusion, but the inclusion remains geographically selective rather than evenly national.

3.4 Productive Quality of Fintech-Based Financial Inclusion

The productive quality of fintech-based financial inclusion can be assessed by comparing total fintech loan disbursement with loans allocated to productive sectors. Based on LPBBTI December 2025, total fintech loan disbursement reached Rp30.18 trillion, while loan disbursement to productive sectors amounted to Rp5.42 trillion. This means that productive-sector financing represented only 17.96% of total fintech lending. The remaining 82.04% was outside the productive-sector classification. This finding indicates that fintech lending has expanded financial access at the national level, yet its contribution to productive financial inclusion remains limited. Table 6 presents the contrast between productive and non-productive lending, highlighting the relatively small productive-sector share.

Table 6. Productive and Non-Productive Fintech Lending Distribution

Lending Category	Loan Disbursement	Share (%)	Interpretation
Productive-sector lending	Rp5.42 trillion	17.96%	Financing directed to productive economic activities
Non-productive lending	Rp24.76 trillion	82.04%	Financing outside productive-sector classification
Total fintech lending	Rp30.18 trillion	100.00%	National fintech lending scale

Share of Total Loan Disbursement

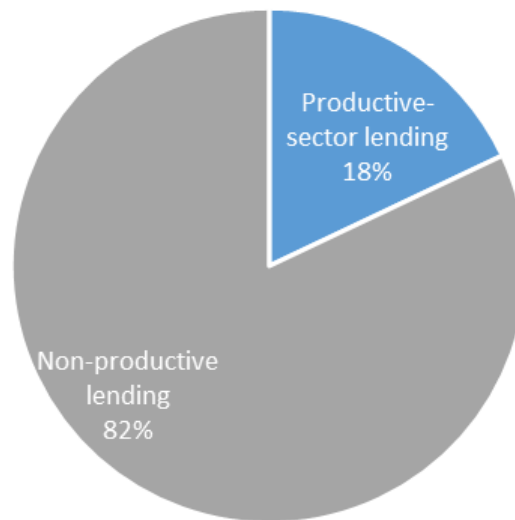


Figure 2. Share of Productive-Sector Lending in Total Fintech Loan Disbursement

At the sectoral level, the largest productive allocation was directed to wholesale and retail trade, including motor vehicle and motorcycle repair, which reached Rp3.04 trillion in December 2025. Other productive sectors received much smaller allocations, such as agriculture, forestry, and fisheries at Rp405.98 billion, construction at Rp27.05 billion, and manufacturing at Rp28.05 billion. This sectoral pattern suggests that fintech lending's productive role is concentrated in trade-related activities rather than being evenly distributed across broader real-sector activities such as agriculture, manufacturing, infrastructure, and waste-treatment sectors. Figure 2 reinforces this result by illustrating the proportion of productive-sector lending relative to total fintech loan disbursement.

From a financial inclusion perspective, this result is important because access to credit does not automatically represent productive inclusion. Fintech lending can increase the number of borrowers and expand loan access, but the economic quality of inclusion depends on whether financing supports income-generating activities, business growth, and MSME development. The relatively small productive-sector share implies that fintech lending in Indonesia is currently stronger as an access-expansion instrument than as a productive-financing mechanism. For national financial inclusion policy, this finding highlights the need to strengthen fintech lending schemes that are directly connected to working capital, microenterprise development, agricultural production, trade upgrading, and other real-sector activities. Indonesian evidence further indicates that fintech can support MSME financing and

business performance when digital credit is connected to productive enterprise needs (Putri et al., 2022; Febriyani & Rita, 2022).

3.5 MSME Inclusion in Fintech Lending

MSME inclusion is an important dimension for evaluating whether fintech lending contributes only to general credit access or also supports enterprise-based financial inclusion. Based on LPBBTI December 2025, total outstanding fintech loans reached Rp96.62 trillion, distributed across 26,104,165 active borrower accounts. Within this structure, MSME borrowers accounted for 6,413,754 accounts, consisting of 6,410,643 individual MSME accounts and 3,111 business-entity MSME accounts. In value terms, MSME outstanding loans reached Rp31.42 trillion, derived from Rp26.94 trillion in individual MSME loans and Rp4.48 trillion in business-entity MSME loans.

Table 7. MSME and Non-MSME Distribution in Fintech Lending

Borrower Category	Active Borrower Accounts	Share of Accounts	Outstanding Loan	Share of Outstanding Loan
MSME	6,413,754	24.57%	Rp31.42 trillion	32.52%
Non-MSME	19,690,411	75.43%	Rp65.20 trillion	67.48%
Total	26,104,165	100.00%	Rp96.62 trillion	100.00%

The data show that MSME borrowers are present in the fintech lending ecosystem, yet they do not dominate either by number of accounts or outstanding loan value. Non-MSME borrowers accounted for 75.43% of active borrower accounts and 67.48% of outstanding loans. This pattern indicates that fintech lending has contributed to MSME access, but its national inclusion profile remains broader and more consumer-oriented than exclusively enterprise-oriented. MSME participation is meaningful because nearly one-third of outstanding fintech loans are connected to MSME borrowers, yet the smaller account share suggests that most fintech borrower accounts are still classified as non-MSME. Table 7 shows the account and outstanding-loan distribution between MSME and non-MSME borrowers.

This finding has important implications for national financial inclusion. If fintech lending is expected to strengthen inclusive economic development, the expansion of credit access should be linked more directly to MSME productivity, working capital, business resilience, and local economic upgrading. The current structure suggests that fintech lending has opened an alternative financing channel for MSME, but the scale is still insufficient to position fintech lending as a predominantly MSME-based inclusion instrument. Thus, stronger policy alignment is needed between fintech lending, MSME development programs, productive-sector financing, and borrower protection.

3.6 Gender-Based Financial Inclusion

Gender-based analysis is used to evaluate whether fintech lending access is relatively balanced between male and female borrowers. Based on LPBBTI December 2025, the number of active individual borrower accounts reached 26,100,183 accounts. Male borrowers accounted for 13,166,154 accounts, equal to 50.44% of total individual borrower accounts, while female borrowers accounted for 12,934,029 accounts, equal to 49.56%. This distribution shows that fintech lending access is relatively balanced by gender, with only a small difference between male and female borrower participation. From the perspective of national financial inclusion,

this pattern indicates that fintech lending has been able to reach both gender groups almost equally. Table 8 summarizes the gender distribution of active borrower accounts and outstanding loan values.

Table 8. Gender Distribution of Fintech Borrowers

Gender	Active Borrower Accounts	Share of Accounts	Outstanding Loan	Share of Outstanding Loan
Male	13,166,154	50.44%	Rp37.44 trillion	45.12%
Female	12,934,029	49.56%	Rp45.54 trillion	54.88%
Total	26,100,183	100.00%	Rp82.98 trillion	100.00%

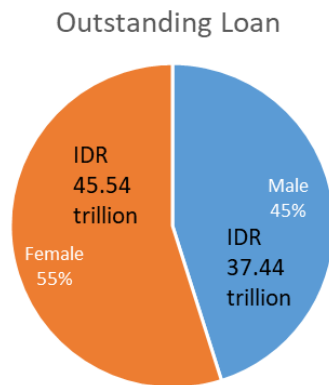


Figure 3. Total Outstanding Loan by Gender

The outstanding loan structure shows a different pattern. Although male borrowers had slightly more active accounts, female borrowers held a larger outstanding loan value. Male borrowers recorded outstanding loans of approximately Rp37.44 trillion, or 45.12% of total individual outstanding loans, while female borrowers recorded approximately Rp45.54 trillion, or 54.88%. This means that women represented almost half of borrower accounts but carried more than half of total individual loan exposure. The finding suggests that gender inclusion in fintech lending should not be assessed only through account participation, but also through the intensity of credit use and outstanding loan burden. Figure 3 visually compares the outstanding-loan shares of male and female borrowers and highlights the larger female share.

This result has two implications. First, fintech lending appears to provide relatively equal access for male and female borrowers, which supports the argument that digital lending can reduce certain gender barriers in financial access. Second, the larger outstanding loan share among female borrowers requires careful interpretation. It may reflect stronger use of fintech lending by women for household liquidity, microenterprise activity, or short-term financial needs, but it may also indicate higher exposure to repayment pressure. For this reason, gender-based financial inclusion through fintech lending should be accompanied by borrower protection, financial literacy, transparent loan information, and risk monitoring that considers differences in credit exposure between male and female borrowers. Gender-specific fintech adoption research in Indonesia also finds that perceived risks and benefits differ between men and women, reinforcing the need for gender-sensitive interpretation (Juita et al., 2023).

3.7 Risk and Sustainability of Fintech Lending Inclusion

Risk and sustainability are essential dimensions in assessing whether fintech lending strengthens national financial inclusion in a healthy manner. Financial inclusion cannot be measured only through loan expansion or borrower participation, because broader access to credit may also create repayment vulnerability when borrowers experience difficulty fulfilling loan obligations. In this study, sustainability is assessed using TWP90, which refers to the level of default or failure to settle obligations more than 90 days after the due date. Based on LPBBTI December 2025, the national TWP90 of fintech lending stood at 4.32%, while the TKB90 reached 95.68%. These indicators show that most fintech lending obligations were successfully repaid within the observed risk threshold, although a measurable portion of loans remained in default above 90 days.

Table 9. TWP90 Distribution by Region and Selected Provinces

Region / Province	Outstanding Loan	TWP90	Interpretation
National	Rp96.62 trillion	4.32%	General fintech lending risk level
Java	Rp67.56 trillion	5.34%	Higher than national average
Non-Java	Rp29.06 trillion	1.94%	Lower than national average
DKI Jakarta	Rp15.62 trillion	11.58%	Highest risk among major provinces
East Java	Rp11.42 trillion	5.02%	Relatively high risk
West Java	Rp23.94 trillion	3.29%	Large exposure with moderate risk
North Kalimantan	Rp75.32 billion	4.45%	Small exposure with elevated risk
West Nusa Tenggara	Rp330.36 billion	3.39%	Moderate risk outside Java

The regional pattern shows that fintech lending risk is not evenly distributed. Java, which dominates national fintech lending, also recorded a higher TWP90 than non-Java. DKI Jakarta is the most notable case because it combines large outstanding loan value with the highest TWP90 among selected provinces. This suggests that regions with strong fintech lending activity are not automatically more sustainable. High lending concentration may increase credit exposure when borrower repayment capacity does not develop at the same pace as loan access. Table 9 provides the corresponding TWP90 values for the national level, Java, non-Java, and selected provinces.

These findings indicate that fintech lending contributes to financial inclusion, but its sustainability requires closer supervision. A lower TWP90 in several non-Java regions may indicate more controlled exposure, while higher TWP90 in major lending centers suggests the need for stronger credit scoring, borrower protection, financial literacy, and responsible lending practices. Thus, national financial inclusion through fintech lending should be evaluated through both access and repayment quality. This emphasis on repayment quality is consistent with Indonesian fintech-lending evidence that treats TWP90 as a central indicator of industry risk performance.

3.8 Summary of Key Findings

The results indicate that fintech lending has become an important instrument for strengthening national financial inclusion in Indonesia, particularly through the expansion of digital credit access. Nationally, fintech lending is supported by 95 registered providers, consisting of conventional and sharia-based providers, with total loan disbursement of

approximately Rp30.18 trillion and more than 15.32 million borrower accounts. This scale confirms that fintech lending is no longer a marginal financial innovation, but a significant digital financing channel within Indonesia's financial system. Yet, the findings also show that the contribution of fintech lending should not be assessed only from the magnitude of loans and borrowers. Its quality must be evaluated through spatial equity, productive orientation, MSME participation, gender inclusion, and credit risk sustainability.

Table 10. Summary of Empirical Findings

Analytical Dimension	Main Finding	Interpretation
National access	Fintech lending reached ±15.32 million borrower accounts with loan disbursement of ±Rp30.18 trillion	Fintech lending contributes to expanding national credit access
Spatial distribution	Java absorbed 71.65% of national fintech loan disbursement and 73.35% of borrower accounts	Financial inclusion remains spatially concentrated
Provincial concentration	Top five provinces absorbed 70.22% of total national loan disbursement	Fintech lending benefits are concentrated in major economic centers
Productive inclusion	Productive-sector lending accounted for only 17.96% of total loan disbursement	Fintech inclusion is stronger in access expansion than productive financing
MSME inclusion	MSME borrowers represented 24.57% of accounts and 32.52% of outstanding loans	MSME access exists but remains secondary to non-MSME borrowing
Gender inclusion	Male and female borrower accounts were relatively balanced, but women held 54.88% of outstanding personal loans	Gender access is balanced, yet female credit exposure is higher
Risk sustainability	National TWP90 was 4.32%, with higher risk in Java and DKI Jakarta	Inclusion needs risk-based monitoring and borrower protection

Overall, the empirical evidence suggests that fintech lending has widened financial access in Indonesia, yet the inclusion it creates remains uneven and only partially productive. The spatial results show that fintech lending is highly concentrated in Java and in a few major provinces, meaning that digital finance does not automatically remove regional inequality. The productive-sector and MSME findings indicate that fintech lending has not yet become a predominantly productive financing mechanism. Gender findings are more balanced in terms of access, but loan exposure among female borrowers requires further policy attention. Meanwhile, TWP90 results confirm that financial inclusion must be evaluated alongside credit quality, since broader access without repayment sustainability may create vulnerability. Thus, fintech lending contributes to national financial inclusion, but its future policy direction should emphasize equitable regional expansion, productive financing, MSME strengthening, gender-sensitive borrower protection, and risk-based supervision. Table 10 summarizes the

principal empirical findings across access, spatial distribution, productive inclusion, MSME inclusion, gender inclusion, and risk sustainability.

3.9. Discussion

The findings show that fintech lending has become an important channel of financial inclusion in Indonesia, but its contribution is more complicated than loan growth alone suggests. The large number of borrower accounts and the size of loan disbursement confirm that fintech lending has widened access to credit. Still, access is only the first layer of inclusion. A closer reading of the data shows that fintech lending is shaped by the same regional and economic structures that influence conventional financial access. Java dominates borrower accounts and loan value, while non-Java regions remain far behind. This suggests that digital finance does not automatically erase geography. Even when lending platforms operate online, borrowers still depend on income stability, digital literacy, internet quality, smartphone access, and local economic opportunity (Aloulou et al., 2024; Shen et al., 2021).

The concentration of fintech lending in Java can be understood through Indonesia's regional development structure. Java has denser markets, stronger urban consumption, better digital infrastructure, and more established financial ecosystems. These conditions make fintech lending easier to adopt and scale. By contrast, many non-Java regions face more fragmented markets, uneven connectivity, and lower formal financial familiarity. This does not mean fintech lending has failed as an inclusion instrument. It shows something more specific: digital financial inclusion is conditional. Platforms may be nationally available, but practical access remains uneven when supporting infrastructure and economic readiness differ across regions. This is consistent with the view that digital financial inclusion depends not only on technology, but also on institutional quality, infrastructure readiness, and local development capacity (Ababio et al., 2024; Xi & Wang, 2023). Related evidence shows that digital inclusive finance can reduce household consumption volatility through entrepreneurship and income-stabilization channels, especially where financial literacy and internet access are stronger (Song et al., 2024).

The limited share of productive-sector lending also raises an important theoretical point. Fintech lending expands borrowing, but borrowing should not automatically be equated with empowerment. Productive financial inclusion requires that credit supports business activity, working capital, income generation, or MSME resilience. The findings show that productive-sector lending and MSME participation are present, but they do not dominate the structure of fintech lending. This implies that fintech lending in Indonesia is currently stronger as an access-expansion mechanism than as a productive development instrument. For financial inclusion scholarship, this distinction matters because inclusive finance should not be measured only by how many people borrow, but by whether credit improves economic capacity and reduces economic vulnerability (Wang et al., 2024; Sun & Tang, 2022).

Gender findings add another layer to this discussion. Male and female borrower accounts are relatively balanced, suggesting that fintech lending may reduce some access barriers faced in conventional finance. However, the larger outstanding loan share among female borrowers should be interpreted carefully. It may indicate active financial participation, but it may also reflect greater exposure to household liquidity pressure, informal business needs, or repayment burden. In this sense, gender inclusion should be assessed not only through access, but also through credit intensity and borrower protection. Digital financial inclusion may

widen participation, but the quality of that participation depends on whether borrowers are protected from excessive credit pressure and information asymmetry (Setiawan et al., 2024; Widyastuti et al., 2024).

Risk sustainability further confirms why fintech-based inclusion needs a quality-oriented framework. The TWP90 pattern shows that higher lending activity does not always mean healthier inclusion. DKI Jakarta, for example, combines large loan exposure with high default risk. This reveals a basic tension in digital credit markets: fast access can improve inclusion, but it can also increase vulnerability when repayment capacity, financial literacy, and responsible lending practices do not keep pace. The Indonesian case therefore contributes to wider debates on fintech inclusion by showing that digital credit can be simultaneously inclusive, concentrated, partially productive, and risk-sensitive. Put simply, fintech lending is promising, but it is not automatically developmental unless access is matched by productive use, regional balance, and repayment sustainability (Yudaruddin et al., 2024; Ruan & Jiang, 2024).

Academic Implications

This study contributes to finance and development literature by showing that fintech lending should be analyzed through a multidimensional inclusion framework. The descriptive evidence supports the argument that financial inclusion is not only about access, but also about distribution, productive quality, borrower composition, and repayment sustainability. The Indonesian case enriches the literature on digital financial inclusion in emerging economies because it shows that fintech platforms remain embedded in regional economic structures. In other words, digital finance may widen access, but it does not automatically neutralize spatial inequality.

Practical Implications

For regulators, the findings suggest that fintech lending supervision should combine growth monitoring with regional and risk-based evaluation. OJK and related policymakers can use provincial lending concentration and TWP90 indicators as early-warning tools to identify areas where digital credit expansion may create borrower vulnerability. For fintech providers, the findings highlight the need to design more region-sensitive and productive loan products, especially for MSME outside Java. For government institutions, fintech lending should be integrated with broader development programs, including digital infrastructure expansion, MSME capacity building, financial literacy, and borrower protection. This is especially important because inclusive fintech policy should not only make credit easier to obtain, but also make credit safer and more economically useful.

4. Conclusion and Suggestion

The December 2025 descriptive evidence indicates that fintech lending has become a large alternative channel of digital credit access in Indonesia, reaching millions of borrower accounts. The results should not be interpreted as a causal estimate of its impact on national financial inclusion. Rather, they show that broad access coexists with uneven quality and distribution: loan disbursement is heavily concentrated in Java and a small number of major provinces, productive-sector financing remains limited, and MSME borrowers do not yet dominate the portfolio. Gender participation is nearly balanced by account numbers, although women hold a larger share of individual outstanding loans.

Regionally, the observed pattern highlights substantial disparities: Java combines dense population, stronger digital infrastructure, and active economic ecosystems, whereas many non-Java provinces record lower penetration and more limited productive financing. These patterns are consistent with the view that digital financial inclusion remains conditioned by spatial, institutional, and economic circumstances. Policymakers and fintech providers should therefore prioritize regionally responsive, productive, and risk-sensitive lending programs. Academically, the study clarifies how fintech-based access operates across uneven geographies and why access alone cannot be treated as proof of equitable, productive, or sustainable financial participation.

5. Limitations and Future Research

This study has several limitations. First, it relies on aggregated OJK statistics for one reporting period, so it cannot establish temporal trends or causal relationships between fintech lending and changes in financial inclusion. Second, province-level and national aggregates cannot identify borrower-level welfare effects, the actual purpose of each loan, income changes after borrowing, repayment capacity, repeated or multiple-platform borrowing, loan refinancing, or whether the same person is represented by more than one account. Third, the data do not reveal platform-specific underwriting practices, pricing, tenor, approval rates, borrower rejection, complaint outcomes, or differences between conventional and sharia-based providers. Fourth, differences in provincial population, income, internet access, business density, and conventional financial-service coverage are not normalized in the present descriptive comparisons. Consequently, a large provincial share may reflect market size as well as inclusion performance. Future research should combine multi-period OJK data with population-adjusted indicators, panel or spatial econometric models, household and MSME surveys, and platform-level evidence to examine borrower welfare, credit purpose, repeated borrowing, regional determinants, and causal mechanisms more rigorously. Within these limitations, the current study is useful for mapping the national distribution of access, productive orientation, borrower composition, and repayment risk. Policy implications should therefore be treated as directions for further evaluation rather than as causal policy effects.

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