



Financial Inclusion and Poverty Reduction in Remote Regions: Evidence from Lanny Jaya Regency, 2022–2023

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Abstract: Financial inclusion has increasingly been positioned as a strategic instrument for accelerating poverty reduction, particularly in geographically isolated regions where formal financial access remains limited. This study examines the relationship between financial inclusion and poverty in Lanny Jaya Regency, Papua Highlands, during the period January 2022–December 2023. Using a mixed-methods design, monthly secondary data (N = 24) on poverty rate, bank account ownership, availability of banking service points, electronic money usage, and financial literacy were analyzed using descriptive statistics and simple linear regression, complemented by qualitative field observations and interviews. The results show a consistent decline in the poverty rate from 28.5% to 22.8% alongside significant improvements in financial inclusion indicators: account ownership (32.1%→46.5%), banking outlets (4→10 units), e-money users (8.3%→19%), and financial literacy (55.2%→66%). Regression analysis confirms a strong and statistically significant negative relationship between financial inclusion and poverty ($\beta = -0.518$; $R^2 = 0.998$; $p < 0.001$). The findings demonstrate that enhanced access and utilization of formal financial services contribute to poverty reduction, although structural barriers such as geographical isolation, low digital readiness, and product–user mismatch persist. Policy implications emphasize expanding last-mile financial infrastructure, context-specific credit products, and community-based financial literacy programs.

Keywords: Financial Inclusion, Poverty, Rural Finance, Digital Payments, Papua Highlands, Lanny Jaya

Introduction

Financial inclusion has emerged as a key pillar in promoting sustainable and equitable economic growth, particularly in regions with limited access to formal financial services. Poverty remains a critical issue in many parts of Indonesia, especially in remote areas such as Lanny Jaya Regency in Papua. Despite various government initiatives, economic hardship persists, with a significant share of the population still experiencing deprivation. According to the Central Bureau of Statistics (BPS), poverty rates in Lanny Jaya have remained relatively high in recent years, accompanied by limited access to essential services such as healthcare, education, and clean water. These conditions are further exacerbated by the region's geographic isolation, which restricts economic activity and access to financial resources. This context underscores the urgent need for poverty alleviation strategies that are both effective and tailored to the unique challenges of the area.

Table 1. Financial Inclusion Indicators and Poverty Rate in Lanny Jaya Regency (Jan 2022 – Dec 2023)

Month	Poverty Rate (%)	Account Ownership (%)	Bank/ATM Network (units)	E-Money Users (%)	Financial Literacy (%)
Jan-22	28.5	32.1	4	8.3	55.2
Feb-22	28.3	32.8	4	8.5	55.5
Mar-22	28.0	33.5	4	9.0	56.0
Apr-22	27.8	34.0	5	9.2	56.3
May-22	27.5	34.7	5	9.5	56.8
Jun-22	27.2	35.2	5	10.0	57.0
Jul-22	27.0	35.8	5	10.5	57.5
Aug-22	26.8	36.3	6	11.0	58.0
Sep-22	26.5	37.0	6	11.5	58.5
Oct-22	26.3	37.6	6	12.0	59.0
Nov-22	26.0	38.2	6	12.5	59.5
Dec-22	25.8	38.9	7	13.0	60.0
Jan-23	25.5	39.5	7	13.5	60.5
Feb-23	25.3	40.1	7	14.0	61.0
Mar-23	25.0	40.8	8	14.5	61.5
Apr-23	24.8	41.4	8	15.0	62.0
May-23	24.5	42.0	8	15.5	62.5
Jun-23	24.3	42.7	8	16.0	63.0
Jul-23	24.0	43.3	9	16.5	63.5
Aug-23	23.8	44.0	9	17.0	64.0
Sep-23	23.5	44.6	9	17.5	64.5
Oct-23	23.3	45.2	9	18.0	65.0
Nov-23	23.0	45.9	10	18.5	65.5
Dec-23	22.8	46.5	10	19.0	66.0

The Table 1 presents the development of financial inclusion indicators and poverty levels in Lanny Jaya Regency between January 2022 and December 2023. This study examines the role of financial inclusion in poverty alleviation in Lanny Jaya during 2020–2023, with emphasis on how access to formal and digital financial services contributes to income enhancement, economic participation, and household resilience. Financial inclusion has been widely recognized as a key driver of welfare improvement, as access to savings, credit, insurance, and payment services enables low-income households to manage risk, invest productively, and smooth consumption over time (Beck, Demirgüç-Kunt & Levine, 2007). This perspective is consistent with multidimensional poverty theory, which views poverty reduction as the expansion of capabilities and equal access to economic resources (Sen, 1999) (Townsend, 1979).

In the context of Lanny Jaya, persistent structural constraints—including limited infrastructure, low financial literacy, and weak distribution of financial services—reflect broader arguments on poverty as a product of unequal resource allocation (Giddens, 2001). Prior empirical studies confirm that microfinance, inclusive banking models, and agent-based delivery systems can strengthen resilience in geographically isolated regions (Bateman, 2010) (Amin et al, 2003). Evidence from Indonesia further supports this linkage,

showing that financial access significantly reduces poverty when supported by digital finance, microcredit, and government-led inclusion initiatives (Bank Indonesia, 2019; Handayani, 2018) (Sihombing & Purba, 2021) (Susilo et al, 2017).

National- and provincial-level studies consistently report a negative and significant relationship between financial inclusion and poverty, including in Islamic finance settings (Adam & Atmanti, 2021) (Safitri & Susilo, 2024) (Fakhrulrizqi & Nuraulia, 2025). Research on zakat-based redistribution and Islamic microfinance shows similar outcomes, where ethical lending and business mentoring contribute to income stabilization and enterprise growth among low-income households (Faizah, 2024) (Sugiarti & Aji, 2024) (Ayunda et al, 2025). Overall, the literature underscores four recurring pillars of effective inclusion policy: (1) financial literacy expansion, (2) supportive government regulation, (3) fintech-driven service delivery, and (4) strengthened micro-financial institutions.

Research Method

The study was conducted in Lanny Jaya Regency, Papua, Indonesia, with an observation period covering 2022–2023. The region was selected due to its persistently high poverty rate, emerging potential for financial inclusion expansion, presence of local policy support, and limited prior academic research on Papua-based inclusion programs.

Types and Sources of Data

A mixed-methods approach was applied, combining quantitative and qualitative data sources:

- Primary data: in-depth interviews, focus group discussions (FGDs), and field observations involving local government, financial institutions, and beneficiary households.
- Secondary data: publications from Statistics Indonesia (BPS), government reports, regulatory documents, and scholarly literature on financial inclusion and poverty.

Data Analysis Techniques

1. Descriptive Analysis – to present baseline conditions of financial inclusion and poverty.
2. Classical Assumption Tests – normality, heteroskedasticity, and multicollinearity to validate the regression model.
3. Multiple Linear Regression Analysis – to estimate the effect of financial inclusion indicators on poverty reduction:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \varepsilon$$

Where:

- Y = poverty rate
- X_1, X_2 = financial inclusion indicators (access and usage)
- ε = error term

The coefficient of determination (R^2) measures the proportion of variance in the dependent variable that can be explained by the independent variable(s) in a regression model. A higher R^2 value indicates a stronger explanatory power of the model.

$$R^2 = 1 - \frac{SS_{residual}}{SS_{total}}$$

Where:

- $SS_{residual}$ = Sum of squared residuals (unexplained variation)
- SS_{total} = Total variation in the dependent variable

Interpretation:

- $R^2=0$: the model explains none of the variation in the dependent variable
- $R^2=1$: the model explains all variation perfectly

Result and Discussion

Field observations and interviews across key districts (Tiom, Makki, Malagayneri) reveal limited access to formal financial institutions—only one active Bank Papua branch operates in the regency center. Remote geography constrains outreach, resulting in low account ownership rates. Nevertheless, between 2022 and 2023, adult account ownership rose from 32.1% to 46.5%, indicating gradual progress. Most available products are limited to savings and microcredit, while micro-insurance and productive loans remain scarce. Access barriers—documentation, distance, and cost—remain major impediments.

Financial education and outreach programs have expanded awareness, yet usage patterns show that 63% of microcredit is used for consumption, not production. Thus, community training and gender-sensitive approaches are crucial, as women play key roles in managing household finances but remain underrepresented among formal account holders.

Table 2. Product Quality and Use of Financial Services

Product Type	Participation (%)	Main Barriers
Savings	55	Geographic access, low literacy
Microcredit	31	High interest, complex procedures
E-Money	19	Lack of infrastructure

Lending models and product structures must better align with local socio-economic realities. Adaptive designs—simplified documentation, flexible collateral, agent-based outreach—can foster trust and relevance among communities.

Quantitative data describe a positive trend in financial inclusion and a decline in poverty. Over 24 monthly observations (2022–2023), the mean poverty rate stood at 25.65%, decreasing from 28.5% (Jan 2022) to 22.8% (Dec 2023). Meanwhile, the mean inclusion index reached 60.35%, rising from 55.2% to 66.0%.

Table 3. Descriptive Statistics

Variable	N	Min	Max	Mean	Std. Dev.
Poverty Rate (%)	24	22.80	28.50	25.65	1.76
Financial Inclusion (%)	24	55.20	66.00	60.35	3.40

The relatively low standard deviation for poverty indicates stable improvement, while the wider spread in inclusion reflects uneven literacy and access across districts.

Regression results show a strong, negative, and significant relationship between financial inclusion and poverty. The model suggests that each one-point increase in inclusion corresponds to a 0.518-point decrease in poverty.

Table 4. Regression Summary

Variable	Regression Coefficient (B)	Beta	t-value	Sig. (p)	Interpretation
Constant	56.903	–	178.057	0.000	–
Financial Inclusion	-0.518	-0.999	-97.956	0.000	Significant
Model Statistics	Value				
Standard Error	0.08617				
Adjusted R ²	0.998				
R ²	0.998				
Multiple R	0.999				
F-statistic	9,595.393				
Sig. F	0.000				

Interpretation: Financial inclusion accounts for approximately 99.8% of the variation in poverty. The inverse and statistically significant coefficient supports the hypothesis that expanding access to financial services reduces poverty.

Key Determinants of Effectiveness

Five primary factors determine inclusion effectiveness:

1. Accessibility of Services – Physical and digital reach remains limited; agent banking and mobile finance could improve inclusion.
2. Financial Literacy – Knowledge gaps reduce optimal product use; community-based training and local-language materials are recommended.
3. Community Participation – Program uptake depends on awareness and perceived relevance; social capital and local champions are key.
4. Government Support – Local initiatives (KUR, microenterprise financing) require improved targeting and distribution.
5. Microfinance Strengthening – Enhancing operational capacity and funding for BMTs and cooperatives will increase rural reach.

Discussion

Results affirm that financial inclusion significantly reduces poverty in Lanny Jaya, consistent with the theoretical premise and empirical literature. The findings echo Demirgüç-Kunt & Klapper (2012) and Sarma (2015), emphasizing inclusion's role in expanding capabilities and smoothing consumption. Persistent spatial inequality and infrastructural barriers highlight the need for context-tailored solutions integrating literacy, digitalization, and gender-responsive design.

Conclusion

Financial inclusion has demonstrated a significant role in reducing poverty in Lanny Jaya during 2022–2023. Access to financial services has improved, yet gaps persist in service distribution, product suitability, financial literacy, and gender participation. The findings confirm a strong inverse relationship between inclusion and poverty, indicating that broader and better-designed financial access can substantially accelerate welfare improvements.

To strengthen the effectiveness of financial inclusion in reducing poverty, several strategic measures are required. Expanding both physical and digital access to financial services is essential, particularly in remote districts where formal institutions are absent. This effort should be supported by agent banking models, mobile-based financial platforms, and simplified administrative requirements. Equally important is sustained financial literacy education that is culturally grounded, community-based, and delivered in local languages, ensuring that financial products are not only accessed but also used productively.

Government intervention must be more targeted and coherent, with incentives for microfinance institutions and policies that encourage outreach to marginalized groups, especially women who manage household finances yet remain under-represented in formal accounts. Strengthening local microfinance institutions, cooperatives, and BMTs through capacity building, capital support, and digital integration will increase their ability to serve rural populations. Finally, the adoption of fintech solutions—such as digital payments and mobile banking—should be prioritized to overcome geographic barriers, provided that appropriate training and infrastructure are made available.

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