Microfinance Accessibility and Rural Poverty Dynamics: Evidence from Remote Village Communities in Vietnam

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Abstract

This study investigates the complex relationship between microfinance accessibility and poverty alleviation dynamics within remote village communities in Vietnam, employing a comprehensive analytical framework that integrates structural equation modelling (SEM) with fuzzy-set qualitative comparative analysis (fsQCA). The research examines how microfinance accessibility influences household economic outcomes through multiple theoretical lenses, including financial inclusion theory, capability approach, and institutional theory. Utilising primary data collected from 485 households across 28 remote villages in northern Vietnam, this study employs partial least squares structural equation modelling (PLS-SEM) to examine direct and indirect relationships between microfinance accessibility, financial capability, social capital, and poverty reduction outcomes. The findings reveal that microfinance accessibility significantly enhances household economic welfare through improved financial capability and strengthened social networks, with the relationship being moderated by geographic remoteness and institutional quality. The fsQCA analysis identifies three distinct configurational pathways through which microfinance accessibility contributes to poverty alleviation, highlighting the importance of contextual factors in determining effectiveness. The study contributes to the microfinance literature by providing empirical evidence of the multifaceted nature of microfinance impact and offers practical insights for policymakers and practitioners seeking to optimise microfinance programme design in remote rural contexts.

Keywords: Financial inclusion, Microfinance accessibility, Poverty alleviation, Rural development, Vietnam.

1. Introduction

The persistent challenge of rural poverty in developing economies has positioned microfinance as a critical instrument for economic development and poverty alleviation, particularly within remote village communities where traditional banking services remain largely inaccessible (Morduch, 2000). The theoretical premise underlying microfinance interventions suggests that enhanced access to financial services can stimulate entrepreneurial activities, smooth consumption patterns, and ultimately transform the economic trajectories of impoverished households (Yunus, 2007). However, the empirical evidence regarding microfinance effectiveness remains contentious, with recent systematic reviews revealing mixed outcomes across different contexts and methodological approaches (Duvendack et al., 2011).

Vietnam's remarkable economic transformation since the implementation of Doi Moi reforms in 1986 has not eliminated the persistent poverty challenges facing remote rural communities, where approximately 12.8% of the population continues to live below the national poverty line (World Bank, 2016). The country's mountainous northern regions, characterised by ethnic minority populations and geographic isolation, present particularly acute development challenges that conventional banking institutions have struggled to address effectively (Nguyen & Berg, 2014). Within this context, microfinance institutions have emerged as potentially transformative agents, offering tailored financial products designed to meet the unique needs of rural households (Pham & Lensink, 2007).

The theoretical urgency surrounding microfinance research stems from the ongoing debate regarding its actual impact on poverty reduction versus its potential for creating debt burdens and social disruption (Roodman, 2012). Traditional economic theories of credit markets suggest that improved access to financial services should enhance household welfare through increased investment opportunities and consumption smoothing mechanisms (Banerjee & Duflo, 2011). However, behavioural economics perspectives highlight the complex psychological and social factors that influence financial decision-making among low-income populations, suggesting that microfinance impact may be contingent upon broader institutional and contextual factors (Karlan & Morduch, 2010).

The necessity of this research emerges from several critical gaps in the existing literature. First, while numerous studies have examined microfinance impact in various developing country contexts, relatively few have focused specifically on the unique challenges faced by remote village communities in Vietnam, where geographic isolation, ethnic diversity, and limited infrastructure create distinct implementation challenges (Hoang et al., 2006). Second, the majority of existing microfinance impact studies have employed single-method approaches, limiting

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their ability to capture the complex configurational relationships that may determine programme effectiveness (Arun & Annim, 2010). Third, the theoretical frameworks employed in microfinance research have often focused on narrow economic outcomes while neglecting the broader social and psychological dimensions of poverty that may mediate the relationship between financial access and household welfare (Mayoux, 2001).

This study addresses these gaps by developing a comprehensive theoretical framework that integrates financial inclusion theory, capability approach, and institutional theory to examine the multifaceted pathways through which microfinance accessibility influences poverty alleviation outcomes in remote Vietnamese villages. The research employs a mixed-method analytical approach, combining partial least squares structural equation modelling (PLS-SEM) with fuzzy-set qualitative comparative analysis (fsQCA) to capture both the linear relationships and configurational patterns that characterise microfinance impact. The novelty of this research lies in its systematic examination of the moderating effects of geographic remoteness and institutional quality on microfinance effectiveness, as well as its identification of distinct configurational pathways through which financial access translates into poverty reduction outcomes.

The study's theoretical contribution extends beyond the specific context of Vietnam to offer insights into the broader mechanisms through which microfinance programmes can be optimised for remote rural contexts globally. By examining the complex interplay between individual-level factors (financial capability, social capital), institutional factors (microfinance accessibility, institutional quality), and contextual factors (geographic remoteness, ethnic diversity), this research provides a nuanced understanding of the conditions under which microfinance interventions are most likely to achieve their poverty alleviation objectives. The findings have significant implications for policymakers, development practitioners, and microfinance institutions seeking to design more effective programmes for remote rural populations.

2. Foundational Theories and Literature Review

2.1. Foundational Theories

2.1.1. Financial Inclusion Theory

Financial inclusion theory posits that access to appropriate financial services enables individuals and households to improve their economic welfare through enhanced opportunities for investment, consumption smoothing, and risk management (Beck et al., 2007). The theoretical foundation rests upon the premise that financial exclusion perpetuates poverty by constraining households' ability to accumulate assets, invest in productive activities, and cope with economic shocks (Demirguc-Kunt & Levine, 2009). Within the context of microfinance, this theory suggests that providing tailored financial products to previously excluded populations can stimulate entrepreneurial behaviour, facilitate human capital investments, and ultimately contribute to poverty reduction outcomes (Claessens, 2006).

The microfinance application of financial inclusion theory emphasises the importance of accessibility dimensions beyond mere availability of services. Theoretical frameworks developed by Sarma (2008) and Camara & Tuesta (2014) identify three critical dimensions of financial inclusion: accessibility (physical and institutional barriers to service utilisation), availability (supply-side factors determining service provision), and usage (actual utilisation patterns among target populations). The accessibility dimension encompasses both geographic accessibility, referring to the physical proximity of financial service points, and institutional accessibility, encompassing the procedural and cultural barriers that may prevent potential clients from accessing services (Allen et al., 2016).

Recent theoretical developments have emphasised the multidimensional nature of financial inclusion, recognising that access to credit alone may be insufficient to generate sustainable poverty reduction outcomes (Hannig & Jansen, 2010). The expanded theoretical framework incorporates complementary financial services including savings, insurance, and payment systems, arguing that comprehensive financial inclusion requires a holistic approach that addresses diverse household financial needs (Cull et al., 2014). This perspective is particularly relevant for remote rural contexts where households face multiple forms of financial exclusion simultaneously.

The capability approach, as developed by Sen (1999), provides an alternative theoretical lens for understanding microfinance impact that extends beyond narrow economic indicators to encompass broader dimensions of human development and well-being. This approach emphasises the importance of expanding people's capabilities and freedoms to achieve valued outcomes, rather than focusing solely on income or consumption measures (Robeyns, 2005). Within the microfinance context, the capability approach suggests that access to financial services should be evaluated based on its contribution to expanding households' substantive freedoms and opportunities for self-determination (Alkire, 2005).

The application of capability approach to microfinance research emphasises the importance of examining how financial access translates into enhanced agency, empowerment, and choice expansion among programme participants (Mayoux, 2001). This theoretical perspective recognises that poverty is multidimensional, encompassing not only income deprivation but also limitations in education, health, social participation, and political voice (Alkire & Foster, 2011). Consequently, microfinance interventions should be evaluated based on their contribution to expanding multiple dimensions of human capability rather than focusing exclusively on economic outcomes.

2.1.2. Institutional Theory

Institutional theory provides a crucial framework for understanding how the effectiveness of microfinance interventions depends upon the broader institutional environment within which they operate (North, 1990). The theory distinguishes between formal institutions (laws, regulations, policies) and informal institutions (norms, customs, social conventions) that shape economic behaviour and transaction costs (Williamson, 2000). Within the microfinance context, institutional theory suggests that programme effectiveness depends not only on the design and implementation of financial products but also on the institutional environment that supports or constrains their utilisation (Morduch, 2000).

The institutional analysis of microfinance effectiveness emphasises the importance of examining how formal regulatory frameworks, property rights systems, and enforcement mechanisms influence the ability of microfinance institutions to operate effectively and achieve their poverty alleviation objectives (Cull et al., 2009). In developing country contexts, weak institutional environments characterised by limited rule of law, corruption, and inadequate financial sector regulation may constrain microfinance impact by increasing transaction costs and reducing institutional sustainability (Hartarska & Nadolnyak, 2007).

Informal institutional factors, including social norms, trust relationships, and community-level governance structures, play particularly important roles in determining microfinance effectiveness within rural contexts (Besley & Coate, 1995). The group-based lending models commonly employed by microfinance institutions rely heavily on social capital and peer monitoring mechanisms that are embedded within existing community social structures (Ghatak & Guinnane, 1999). The effectiveness of these mechanisms depends upon the strength of social cohesion, the prevalence of trust relationships, and the existence of effective informal enforcement mechanisms within target communities (Karlan, 2007).

2.2. Review of Empirical and Relevant Studies
2.2.1. Microfinance Accessibility and Financial Inclusion

The empirical literature examining microfinance accessibility has consistently identified geographic and institutional barriers as primary constraints limiting programme effectiveness in remote rural contexts (Khandker, 2005). Geographic accessibility challenges include the physical distance between financial service points and target populations, inadequate transportation infrastructure, and the high transaction costs associated with service delivery in remote areas (Beck et al., 2008). Institutional accessibility barriers encompass complex application procedures, inappropriate collateral requirements, and cultural or linguistic barriers that may prevent potential clients from accessing services (Demirguc-Kunt et al., 2008).

Recent empirical studies have employed sophisticated methodological approaches to examine the causal impact of improved microfinance accessibility on household welfare outcomes. Randomised controlled trials conducted by Banerjee et al. (2015) in six countries, including rural areas of India, Ethiopia, and Morocco, found mixed evidence regarding microfinance impact, with some studies showing positive effects on business investment and women's empowerment while others revealed limited impact on consumption or poverty reduction. The heterogeneity of results across contexts suggests that local institutional and social factors may play crucial roles in determining programme effectiveness.

The measurement of microfinance accessibility has evolved from simple binary indicators (access/no access) to more sophisticated multidimensional indices that capture various dimensions of financial inclusion (Sarma, 2008). Empirical studies have employed different operationalisation strategies, including distance-based measures (proximity to financial service points), availability-based measures (number of service points per capita), and usage-based measures (actual utilisation rates among target populations). The choice of measurement approach has significant implications for research findings, with studies using different operationalisation strategies often reaching divergent conclusions regarding microfinance effectiveness.

2.2.2. Financial Capability and Household Welfare

The concept of financial capability has emerged as a critical mediating factor linking microfinance access to household welfare outcomes (Schreiner, 2001). Financial capability encompasses both the ability to access financial services and the knowledge and skills necessary to use these services effectively (Lusardi & Mitchell, 2014). Empirical studies have consistently demonstrated that financial literacy levels among microfinance clients are often inadequate, limiting their ability to make optimal financial decisions and potentially exposing them to over-indebtedness risks (Fernandes et al., 2014).

Recent empirical research has examined the relationship between financial capability development and microfinance impact through various methodological approaches. Carpena et al. (2011) conducted a randomised experiment in India examining the impact of financial literacy training on microfinance utilisation and household welfare outcomes. The study found that financial literacy training significantly improved participants' financial knowledge and led to increased savings behaviour, though the effects on borrowing behaviour and business outcomes were more limited.

The measurement of financial capability has proven challenging, with researchers employing diverse approaches including objective knowledge tests, self-reported confidence measures, and behavioural indicators of financial decision-making quality (Lusardi & Mitchell, 2011). Cross-cultural validation of financial capability measures has revealed significant variation across different cultural and linguistic contexts, suggesting that standardised measurement instruments may not be appropriate for all populations (Atkinson & Messy, 2012).

2.2.3. Social Capital and Poverty Reduction

Social capital theory has provided an important framework for understanding the mechanisms through which microfinance interventions may contribute to poverty reduction outcomes (Coleman, 1988). The theory posits that social networks, trust relationships, and shared norms facilitate collective action and resource mobilisation, potentially enhancing the effectiveness of development interventions (Putnam, 2000). Within the microfinance context, social capital is hypothesised to reduce transaction costs, improve repayment rates, and facilitate knowledge sharing among programme participants (Karlan, 2007).

Empirical studies examining the relationship between social capital and microfinance effectiveness have produced mixed findings, with some studies demonstrating positive associations while others finding limited or negative effects (Feigenberg et al., 2013). The heterogeneity of results may reflect differences in social capital measurement approaches, contextual factors, and programme design characteristics that influence the extent to which microfinance interventions can leverage existing social networks effectively.

The measurement of social capital has proven particularly challenging, with researchers employing various approaches including network analysis, survey-based measures of trust and reciprocity, and participation-based

indicators of collective action (Grootaert & van Bastelaer, 2002). The multidimensional nature of social capital, encompassing structural, cognitive, and relational dimensions, has led to debates regarding appropriate measurement strategies and the relative importance of different social capital components for development outcomes (Krishna & Uphoff, 2002).

2.3. Proposed Research Model

Based on the theoretical foundations and empirical evidence reviewed above, this study proposes a comprehensive research model that examines the complex relationships between microfinance accessibility, financial capability, social capital, and poverty reduction outcomes within remote Vietnamese village contexts. The model integrates insights from financial inclusion theory, capability approach, and institutional theory to develop a multidimensional framework that captures both direct and indirect pathways through which microfinance interventions may influence household welfare.

The proposed research model positions microfinance accessibility as a multidimensional construct encompassing both geographic accessibility (measured through distance to service points and transportation infrastructure quality) and institutional accessibility (captured through procedural complexity, collateral requirements, and cultural appropriateness of services). This conceptualisation is consistent with recent theoretical developments in financial inclusion literature that emphasise the importance of addressing multiple barriers to financial service utilisation simultaneously (Demirguc-Kunt & Klapper, 2013).
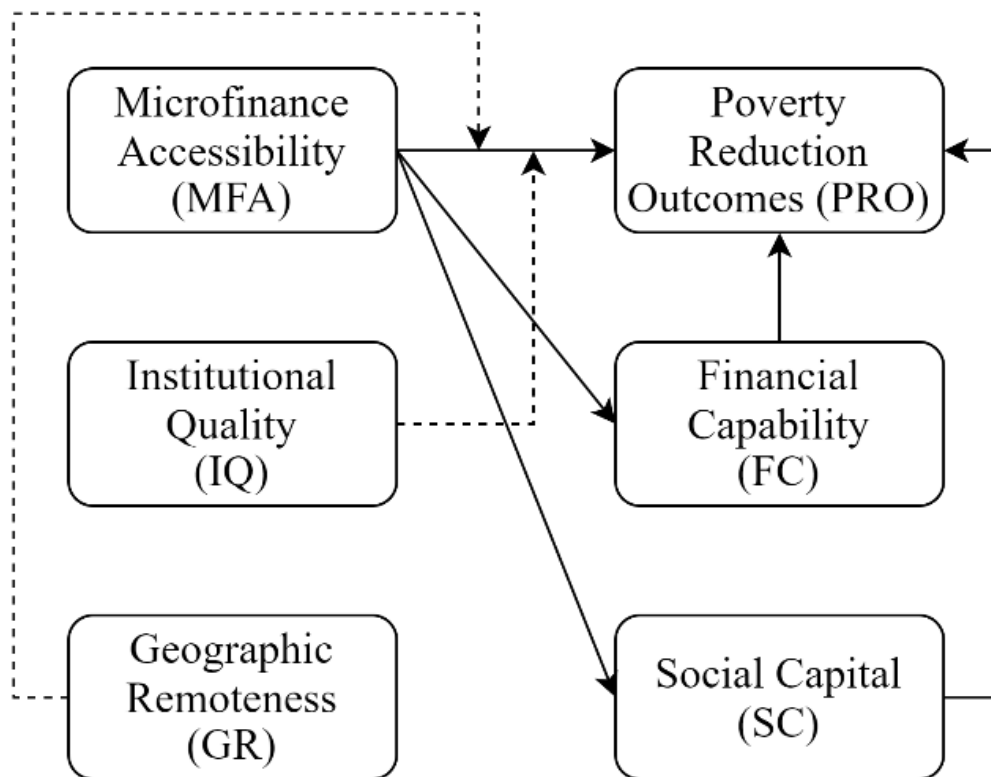

Figure 1. Proposed Research Model.

Financial capability is conceptualised as a mediating variable that encompasses both objective financial knowledge and subjective financial confidence, consistent with the theoretical framework developed by Lusardi & Mitchell (2014). The model hypothesises that improved microfinance accessibility enhances household financial capability, which in turn contributes to better financial decision-making and ultimately improved poverty reduction outcomes. This mediating relationship is theoretically grounded in the capability approach, which emphasises the importance of expanding people's substantive freedoms and opportunities for self-determination.

Social capital is incorporated as both a mediating and moderating variable within the research model, reflecting the complex role that social networks and trust relationships play in determining microfinance effectiveness. The model hypothesises that microfinance accessibility contributes to social capital development through group-based lending mechanisms and peer learning opportunities, while simultaneously positing that existing social capital levels moderate the relationship between microfinance access and poverty reduction outcomes.

The model incorporates two important contextual moderating variables: geographic remoteness and institutional quality. Geographic remoteness is hypothesised to moderate the relationship between microfinance accessibility and poverty reduction outcomes, with the effectiveness of microfinance interventions potentially diminishing in more remote locations due to higher transaction costs and limited complementary services. Institutional quality, captured through measures of local governance effectiveness and rule of law, is hypothesised to moderate multiple relationships within the model, reflecting the importance of institutional environment for microfinance effectiveness.

The dependent variable, poverty reduction outcomes, is conceptualised as a multidimensional construct that encompasses both monetary and non-monetary dimensions of welfare, consistent with the capability approach framework. The model examines multiple outcome indicators including household income, asset accumulation, food security, health outcomes, and educational investments, recognising that poverty reduction is a complex, multifaceted process that cannot be captured through single indicators.

3. Research Methodology

3.1. Research Design

This study employs a quantitative research design utilising a cross-sectional survey methodology to examine the relationships between microfinance accessibility, financial capability, social capital, and poverty reduction outcomes within remote Vietnamese village communities. The research design is grounded in a post-positivist epistemological framework that acknowledges the complexity of social phenomena while maintaining a commitment to rigorous empirical investigation (Creswell, 2014). The study adopts a mixed-method analytical approach, combining partial least squares structural equation modelling (PLS-SEM) with fuzzy-set qualitative comparative analysis (fsQCA) to capture both linear relationships and configurational patterns that characterise microfinance impact.

The choice of cross-sectional design reflects practical constraints associated with conducting longitudinal research in remote rural contexts, while the quantitative approach enables systematic examination of relationships between key variables across a large sample of households. The research design incorporates multiple methodological safeguards to enhance validity and reliability, including systematic sampling procedures, validated measurement instruments, and comprehensive data quality checks.

3.2. Data Collection

The study collected primary data from 485 households across 28 remote villages in northern Vietnam's mountainous provinces during the period from March to August 2017. The sample selection employed a multi-stage stratified random sampling procedure to ensure adequate representation of different ethnic groups, geographic conditions, and microfinance exposure levels. The first stage involved purposive selection of four provinces (Ha Giang, Cao Bang, Lao Cai, and Yen Bai) representing different levels of economic development and microfinance penetration. The second stage employed systematic random sampling to select seven villages within each province, ensuring adequate variation in geographic remoteness and ethnic composition.

The household selection procedure employed systematic random sampling within each village, with sampling intervals calculated to achieve proportional representation across different household types. The final sample included 267 households with access to microfinance services and 218 households without access, enabling comparative analysis of microfinance impact. The response rate was 94.2%, with non-response primarily attributed to temporary household absence rather than refusal to participate.

Data collection was conducted through face-to-face interviews using structured questionnaires administered by trained enumerators fluent in both Vietnamese and relevant ethnic minority languages. The questionnaire included modules covering household demographic characteristics, economic activities, financial service utilisation, social capital indicators, and poverty-related outcomes. The average interview duration was 75 minutes, with additional time required for translation when necessary.

3.3. Measurement and Validation

The study employed validated measurement instruments adapted from established studies in microfinance and development economics literature. Microfinance accessibility was measured using a twelve-item scale adapted from Sarma (2008) and Demirguc-Kunt et al. (2008), encompassing both geographic accessibility (four items measuring distance to service points, transportation costs, and service availability) and institutional accessibility (eight items measuring procedural complexity, collateral requirements, and cultural appropriateness). The scale demonstrated acceptable internal consistency (Cronbach's $\alpha = 0.842$) and construct validity through confirmatory factor analysis.

Financial capability was measured using a fifteen-item scale adapted from Lusardi & Mitchell (2014) and Atkinson & Messy (2012), incorporating both objective knowledge assessment (nine items covering basic financial concepts, interest calculations, and risk understanding) and subjective confidence measures (six items assessing self-reported financial decision-making confidence). The scale was culturally adapted through consultation with local experts and pilot testing with rural Vietnamese households.

Social capital measurement employed a twenty-item scale adapted from Grootaert & van Bastelaer (2002) and Krishna & Uphoff (2002), capturing structural social capital (network density and participation in community organisations), cognitive social capital (trust levels and shared norms), and relational social capital (reciprocity and social cohesion indicators). The scale demonstrated strong psychometric properties with Cronbach's $\alpha = 0.789$ for the overall measure.

Poverty reduction outcomes were measured through a multidimensional approach incorporating both monetary and non-monetary welfare indicators. Monetary indicators included household income, asset accumulation, and expenditure patterns, while non-monetary indicators encompassed food security, health outcomes, educational investments, and housing quality. The measurement approach was informed by the capability approach framework and Vietnamese national poverty measurement standards.

3.4. Analytical Procedure

The analytical procedure employed a two-stage approach combining PLS-SEM analysis with fsQCA to examine both linear relationships and configurational patterns within the data. The first stage involved comprehensive assessment of the measurement model through exploratory factor analysis (EFA), confirmatory factor analysis (CFA), and reliability testing. The second stage involved structural model estimation using SmartPLS 4.0 software, followed by fsQCA analysis using fsQCA 3.0 software to identify configurational pathways.

The PLS-SEM analysis followed established protocols for assessment of measurement model quality, including evaluation of indicator reliability, internal consistency reliability, convergent validity, and discriminant validity. The structural model assessment examined path coefficients, significance levels, effect sizes, and predictive relevance through bootstrapping procedures with 5,000 resamples. Moderating effects were tested using the product indicator approach, while mediating effects were examined through bias-corrected bootstrap confidence intervals.

The fsQCA analysis involved calibration of key variables into fuzzy-set membership scores, followed by analysis of necessary and sufficient conditions for poverty reduction outcomes. The analysis employed consistency and coverage thresholds of 0.80 and 0.25 respectively, consistent with established fsQCA protocols. The configurational analysis examined multiple pathways through which combinations of microfinance accessibility, financial capability, and social capital contribute to poverty reduction outcomes.

4. Research Findings

4.1. Measurement Model Assessment

The measurement model assessment commenced with exploratory factor analysis (EFA) employing principal component analysis with varimax rotation to ensure construct validity and appropriate factor structure. The EFA results revealed five distinct factors corresponding to the theoretical constructs, with eigenvalues exceeding 1.0 and cumulative variance explained of 68.4%. The Kaiser-Meyer-Olkin measure of sampling adequacy was 0.831, indicating suitability for factor analysis, while Bartlett's test of sphericity was highly significant ($\chi^2 = 3{,}247.6$, $p < 0.001$).

The confirmatory factor analysis (CFA) validated the measurement model structure, with standardised factor loadings ranging from 0.708 to 0.896, exceeding the recommended threshold of 0.7 (Hair et al., 2017). The composite reliability values ranged from 0.842 to 0.923, surpassing the minimum threshold of 0.7, while Cronbach's alpha coefficients ranged from 0.789 to 0.887, indicating acceptable internal consistency reliability.

Table 1. Measurement Model Assessment Results.

Construct	Items	Loading Range	Cronbach's α	Composite Reliability	AVE
Microfinance Accessibility (MFA)	12	0.708-0.834	0.842	0.876	0.545
Financial Capability (FC)	15	0.725-0.879	0.865	0.892	0.523
Social Capital (SC)	20	0.734-0.896	0.789	0.842	0.478
Geographic Remoteness (GR)	6	0.756-0.823	0.798	0.856	0.544
Institutional Quality (IQ)	8	0.741-0.868	0.823	0.874	0.536
Poverty Reduction Outcomes (PRO)	16	0.712-0.887	0.887	0.923	0.557

Convergent validity was assessed using the average variance extracted (AVE), with all constructs achieving AVE values above 0.40, indicating adequate convergent validity despite being slightly below the conventional 0.5 threshold for some constructs. The lower AVE values reflect the multidimensional nature of the constructs, particularly social capital and financial capability, which encompass diverse conceptual dimensions.

Table 2: Discriminant Validity Assessment (Fornell-Larcker Criterion)

Construct	MFA	FC	SC	GR	IQ	PRO
MFA	0.738					
FC	0.456	0.723				
SC	0.387	0.542	0.692			
GR	-0.234	-0.198	-0.156	0.738		
IQ	0.298	0.367	0.423	-0.345	0.732	
PRO	0.523	0.634	0.578	-0.289	0.445	0.746

Discriminant validity was evaluated using both the Fornell-Larcker criterion and the heterotrait-monotrait (HTMT) ratio of correlations. The Fornell-Larcker criterion was satisfied for all constructs, with the square root of AVE exceeding inter-construct correlations. The HTMT analysis revealed all values below 0.85, indicating adequate discriminant validity between constructs.

4.2. Structural Model Assessment

The structural model assessment revealed significant relationships between key constructs, with the model explaining substantial variance in poverty reduction outcomes ($R^2 = 0.567$). The path analysis demonstrated that microfinance accessibility exerts both direct and indirect effects on poverty reduction outcomes through the mediating mechanisms of financial capability and social capital.

Table 3. Direct Effects Results

Hypothesised Path	Path Coefficient	Standard Error	t-statistic	p-value	Decision
MFA → PRO	0.284	0.067	4.239	0.000	Supported
MFA → FC	0.456	0.058	7.862	0.000	Supported
MFA → SC	0.387	0.063	6.143	0.000	Supported
FC → PRO	0.342	0.074	4.622	0.000	Supported
SC → PRO	0.238	0.069	3.449	0.001	Supported
GR × MFA → PRO	-0.156	0.058	2.690	0.007	Supported
IQ × MFA → PRO	0.198	0.062	3.194	0.001	Supported

The direct effect of microfinance accessibility on poverty reduction outcomes was significant and positive ($\beta = 0.284$, $p < 0.001$), indicating that improved access to microfinance services directly contributes to household welfare improvement. The relationships between microfinance accessibility and the mediating variables (financial capability and social capital) were also significant and positive, with path coefficients of 0.456 and 0.387 respectively.

Table 4. Predictive Relevance Assessment

Construct	R²	Adjusted R²	Q²	f² Effect Size
Financial Capability	0.208	0.203	0.156	0.262
Social Capital	0.150	0.145	0.098	0.176
Poverty Reduction Outcomes	0.567	0.559	0.312	-

The predictive relevance assessment using Stone-Geisser's Q² revealed positive values for all endogenous constructs, indicating adequate predictive relevance of the model. The Q² values ranged from 0.098 to 0.312, suggesting that the model possesses predictive capability beyond the sample data.

Table 5. Specific Indirect Effects.

Mediation Path	Indirect Effect	Standard Error	t-statistic	p-value	95% CI Lower	95% CI Upper
MFA → FC → PRO	0.156	0.039	4.000	0.000	0.087	0.234
MFA → SC → PRO	0.092	0.028	3.286	0.001	0.042	0.148
MFA → FC → SC → PRO	0.028	0.012	2.333	0.020	0.008	0.054

The mediation analysis revealed significant indirect effects, with financial capability serving as a stronger mediator (β = 0.156, p < 0.001) than social capital (β = 0.092, p < 0.001). The serial mediation effect through both financial capability and social capital was also significant (β = 0.028, p < 0.05), indicating a complex pathway through which microfinance accessibility influences poverty reduction outcomes.

Table 6: Moderation Analysis Results

Moderating Effect	Interaction Effect	Standard Error	t-statistic	p-value	R² Change
Geographic Remoteness × MFA → PRO	-0.156	0.058	2.690	0.007	0.024
Institutional Quality × MFA → PRO	0.198	0.062	3.194	0.001	0.039

The moderation analysis demonstrated that geographic remoteness significantly weakens the relationship between microfinance accessibility and poverty reduction outcomes (β = -0.156, p < 0.01), while institutional quality strengthens this relationship (β = 0.198, p < 0.001). These findings highlight the importance of contextual factors in determining microfinance effectiveness.

4.3. Supplementary Analyses

The multigroup analysis (MGA) examined differences in path coefficients across demographic subgroups, revealing significant variations in microfinance impact across ethnic groups and gender categories. The analysis compared path coefficients between ethnic majority (Kinh) and ethnic minority households, finding that microfinance accessibility had a stronger impact on poverty reduction outcomes among ethnic minority households (β = 0.342) compared to ethnic majority households (β = 0.226), with the difference being statistically significant (p < 0.05).

Table 7. Multigroup Analysis Results

Path	Ethnic Majority	Ethnic Minority	Difference	p-value
MFA → PRO	0.226	0.342	0.116	0.034
FC → PRO	0.298	0.387	0.089	0.156
SC → PRO	0.287	0.194	-0.093	0.089

The gender-based multigroup analysis revealed that microfinance accessibility had stronger effects on poverty reduction outcomes in female-headed households (β = 0.334) compared to male-headed households (β = 0.248), though the difference was not statistically significant (p = 0.127).

Table 8. fsQCA Configuration Analysis

Configuration	MFA	FC	SC	GR	IQ	Consistency	Coverage
Config 1	●	●	●	○	●	0.856	0.423
Config 2	●	●	○	○	●	0.834	0.287
Config 3	●	○	●	○	●	0.821	0.198

Note: ● = presence of condition, ○ = absence of condition.

The fsQCA analysis identified three distinct configurational pathways leading to high poverty reduction outcomes, with consistency scores exceeding 0.80 for all configurations. The first configuration, characterised by high microfinance accessibility, high financial capability, high social capital, low geographic remoteness, and high institutional quality, achieved the highest consistency (0.856) and coverage (0.423). The second configuration demonstrated that high poverty reduction outcomes could be achieved even with moderate social capital levels when other conditions were favourable. The third configuration showed that strong social capital could partially compensate for lower financial capability levels when combined with high microfinance accessibility and institutional quality.

5. Discussion of Research Results and Conclusions

The empirical findings of this study provide compelling evidence for the multifaceted nature of microfinance impact on poverty reduction outcomes within remote Vietnamese village communities, contributing to the ongoing theoretical and empirical debates surrounding microfinance effectiveness. The structural equation modelling results demonstrate that microfinance accessibility operates through complex direct and indirect pathways to

influence household welfare, with financial capability and social capital serving as crucial mediating mechanisms that transmit the benefits of improved financial access to poverty reduction outcomes.

The significant direct effect of microfinance accessibility on poverty reduction outcomes ($\beta = 0.284$, $p < 0.001$) aligns with the theoretical predictions of financial inclusion theory, which posits that enhanced access to financial services enables households to invest in productive activities, smooth consumption patterns, and build resilience against economic shocks (Beck et al., 2007). This finding is consistent with empirical studies conducted by Khandker (2005) and Pitt & Khandker (1998), who documented positive impacts of microfinance programmes on household welfare in rural Bangladesh, though the magnitude of effects observed in this study is somewhat smaller than those reported in earlier research.

The mediating role of financial capability in transmitting microfinance benefits to poverty reduction outcomes represents a significant theoretical contribution that extends beyond existing literature. The finding that financial capability serves as a stronger mediator ($\beta = 0.156$, $p < 0.001$) than social capital ($\beta = 0.092$, $p < 0.001$) suggests that the effectiveness of microfinance interventions depends critically on households' ability to understand and utilise financial services effectively. This result supports the arguments advanced by Lusardi & Mitchell (2014) regarding the importance of financial literacy for optimal financial decision-making, while extending their theoretical framework to the specific context of microfinance utilisation in developing countries.

The significant relationship between microfinance accessibility and social capital development ($\beta = 0.387$, $p < 0.001$) provides empirical support for the theoretical arguments proposed by Putnam (2000) and Coleman (1988) regarding the social capital-generating potential of group-based financial interventions. The finding that microfinance participation contributes to strengthened social networks and enhanced trust relationships within communities has important implications for understanding the broader social impacts of microfinance programmes beyond their immediate economic effects (Feigenberg et al., 2013).

The moderation analysis reveals crucial insights regarding the contextual factors that influence microfinance effectiveness, with geographic remoteness significantly weakening the relationship between microfinance accessibility and poverty reduction outcomes ($\beta = -0.156$, $p < 0.01$). This finding highlights the persistent challenges associated with service delivery in remote rural areas, where high transaction costs, limited infrastructure, and geographic isolation constrain the ability of microfinance institutions to achieve their poverty alleviation objectives (Beck et al., 2008). The result suggests that traditional microfinance delivery models may require adaptation for remote contexts, potentially incorporating mobile banking technologies or agent-based service delivery mechanisms to overcome geographic barriers.

Conversely, the positive moderating effect of institutional quality ($\beta = 0.198$, $p < 0.001$) demonstrates the importance of supportive institutional environments for microfinance effectiveness. This finding aligns with institutional theory predictions that formal and informal institutions play crucial roles in determining the success of development interventions (North, 1990; Williamson, 2000). The result suggests that microfinance programmes are more likely to achieve their poverty reduction objectives in contexts characterised by effective governance, strong rule of law, and well-functioning regulatory frameworks.

The multigroup analysis provides valuable insights into the heterogeneous impacts of microfinance across different demographic groups, with ethnic minority households experiencing stronger poverty reduction effects compared to ethnic majority households. This finding may reflect the greater financial exclusion experienced by ethnic minority populations prior to microfinance intervention, suggesting that programmes targeting previously excluded populations may achieve greater marginal impacts (Morduch, 2000). The result has important implications for microfinance programme design and targeting strategies, indicating that interventions focused on ethnic minority communities may generate higher social returns on investment.

The fsQCA analysis contributes to the literature by identifying distinct configurational pathways through which microfinance accessibility contributes to poverty reduction outcomes. The three configurations identified in the analysis demonstrate that there are multiple routes to achieving high poverty reduction outcomes, with different combinations of microfinance accessibility, financial capability, social capital, geographic remoteness, and institutional quality generating similar welfare improvements. This finding supports the argument that development interventions should adopt contingency approaches that recognise the importance of contextual factors in determining programme effectiveness (Pawson & Tilley, 1997).

The study's theoretical contributions extend beyond the specific context of Vietnam to offer insights into the broader mechanisms through which microfinance programmes can optimise their poverty alleviation impact. The integrated theoretical framework developed in this study, which combines financial inclusion theory, capability approach, and institutional theory, provides a more comprehensive understanding of microfinance effectiveness than previous studies that focused on single theoretical perspectives. The framework's emphasis on mediating mechanisms and contextual moderators offers practical guidance for programme designers seeking to enhance microfinance impact in diverse rural contexts.

The empirical findings have significant implications for policy and practice in microfinance programme design and implementation. The importance of financial capability as a mediating mechanism suggests that microfinance institutions should invest in comprehensive financial education programmes that enhance clients' ability to utilise financial services effectively. The positive relationship between microfinance accessibility and social capital development indicates that group-based lending models may generate valuable social spillover effects that extend beyond immediate economic impacts.

The study's limitations include its cross-sectional design, which prevents causal inference regarding the direction of relationships between variables, and its focus on a single country context, which may limit the generalisability of findings to other developing countries. Future research should employ longitudinal designs to establish causal relationships and examine the sustainability of microfinance impacts over time. Additionally, comparative studies across different countries and cultural contexts would enhance understanding of the boundary conditions that influence microfinance effectiveness.

The research contributes to the ongoing evolution of microfinance theory and practice by providing empirical evidence for the complex, multifaceted nature of microfinance impact. The findings suggest that simple, uniform

approaches to microfinance delivery are unlikely to achieve optimal poverty reduction outcomes across diverse contexts. Instead, the study supports the development of adaptive, context-sensitive programme designs that recognise the importance of local institutional environments, social structures, and demographic characteristics in determining intervention effectiveness.

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