Micropreneurship's Impact On Kandhamal's Rural Development: An SEM Analysis

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ARTICLE INFO	ABSTRACT
	It is especially important for places that are confined by low resources to have micropreneurship since it acts as a vital catalyst for rural economic change. The Kandhamal District in Odisha serves as the focal point of this research project, which analyses the function that it plays as a mediator in the interaction between social capital, financial inclusion, personal empowerment, and rural development. This study makes use of Structural Equation Modelling (SEM) to conduct an analysis of primary data collected from members of Self-Help Groups (SHGs) who are participating in micro-enterprise activities. The purpose of this research is to investigate the effect that access to financial and business resources, social capital, and personal empowerment have on the growth of microentrepreneurship, as well as the subsequent impact that this growth has on the economic development of rural areas. The findings demonstrate that the availability of financial resources and social capital are key contributors to the expansion of microentrepreneurship, which in turn improves the economic results in rural areas. Personal empowerment, on the other hand, does not demonstrate a mediating influence that is statistically significant, which highlights the fact that structural and institutional variables are more prevalent. The purpose of this research is to provide significant policy insights by incorporating thoughts on social capital and financial inclusion into the larger debate on micropreneurship-driven rural development. The development of powerful community networks, the enhancement of financial literacy, and the expansion of credit accessibility are all ways that rural communities may generate sustainable economic prosperity. **Keywords:** Micropreneurship, Rural Development, Financial Inclusion, Social Capital, Structural Equation Modeling (SEM)

1. Introduction

Micropreneurship, which involves small-scale entrepreneurial activities typically led by individuals or small groups, plays a crucial role in driving rural economic transformation, especially in regions where resources are scarce and economic opportunities are limited. In rural areas like Kandhamal District in Odisha, micropreneurship becomes an important mechanism to uplift local communities, foster economic independence, and create sustainable livelihood options. This study focuses on understanding the mediating role of micropreneurship in the relationship between social capital, financial inclusion, personal empowerment, and rural development. Kandhamal is a district marked by economic challenges, such as limited access to capital, poor infrastructure, and high poverty rates. Despite these challenges, the region has witnessed a growing trend of Self-Help Groups (SHGs), which are formed to empower women and provide economic opportunities through micro-enterprise activities. These SHGs play an essential role in the promotion of micropreneurship by offering a platform for individuals to collaborate, pool resources, and

create small businesses. Social capital refers to the networks, relationships, and trust among members of a community. In the context of micropreneurship, social capital can significantly affect the growth of businesses by providing access to information, resources, and potential markets. Strong community ties and collaborative networks foster an environment where individuals are more likely to engage in entrepreneurial activities. Financial inclusion entails ensuring that individuals and businesses, especially in rural areas, have access to useful and affordable financial services. This includes savings accounts, loans, insurance, and credit. The study explores how access to financial resources impacts the growth of microenterprises. It looks at whether easier access to credit and financial resources can expand the scope of micropreneurship, thus driving rural economic development. Personal empowerment in this context refers to the development of an individual's confidence, autonomy, and decision-making ability, particularly in the economic and social spheres. Empowerment often plays a critical role in encouraging individuals to engage in entrepreneurial activities. The study examines whether individuals' sense of empowerment is a mediating factor in the relationship between other variables (financial inclusion, social capital) and the growth of micro-enterprises. Micropreneurship can contribute to this by creating employment opportunities, improving local economies, and reducing reliance on external sources of income. The study employs Structural Equation Modeling (SEM), a statistical technique that is effective in analyzing complex relationships between multiple variables. SEM allows the researcher to evaluate both direct and indirect relationships, making it an ideal method for examining how factors such as social capital, financial inclusion, and personal empowerment contribute to microenterprise growth and rural development. The study analyzes primary data collected from SHG members who are involved in micro-enterprise activities. By focusing on these individuals, the research captures a micro-level perspective on rural entrepreneurship.

1.1 Contextual Background
Rural economic development remains a central focus for policymakers, scholars, and international development organizations, especially in emerging economies. Structural barriers such as limited financial access, inadequate infrastructure, and socio-economic vulnerabilities hinder sustainable economic growth in rural areas. Micropreneurship, a small-scale entrepreneurial approach, has emerged as a crucial driver of rural economic progress, particularly where conventional employment opportunities are sparse. Self-Help Groups (SHGs) have become instrumental in fostering micropreneurial initiatives by facilitating microfinance access, skill-building, and collective bargaining power. SHG-led micro-enterprises have empowered rural communities, particularly women, by enhancing economic independence, decision-making capabilities, and social mobility. Despite these known benefits, the mediating role of micropreneurship in rural development remains underexplored, particularly in geographically and socially unique settings such as Kandhamal District, India.

1.2 Research Gap
Existing research extensively examines the impact of microfinance and SHGs on rural development, highlighting their role in economic and social empowerment. However, few studies explicitly investigate micropreneurship as a mediating factor linking SHG participation with sustainable rural development outcomes. Additionally, much of the current research focuses on macro-level assessments, limiting insights into localized contexts where micro-enterprises operate. Kandhamal District, characterized by a predominantly tribal population and unique socio-economic conditions, presents a compelling case for examining the relationship between micropreneurship, SHG participation, and rural development. The lack of empirical studies in this region underscores a critical knowledge gap, necessitating a focused exploration.

1.3 Research Objectives
This study aims to analyze the mediating role of micropreneurship in rural development by specifically examining its impact in Kandhamal District, Odisha. The primary research objective is:
To assess how micropreneurship mediates the relationship between SHG participation and rural development, with a focus on financial inclusion, social capital, and personal empowerment.

1.4 Significance of the Study
This research holds theoretical, empirical, and policy significance. Theoretically, it enriches the entrepreneurship and rural development literature by positioning micropreneurship as a mediating mechanism rather than an independent economic activity. Empirically, it provides region-specific, data-driven insights from Kandhamal District, offering evidence-based conclusions for policymakers. From a policy standpoint, the findings can guide government agencies, microfinance institutions, and development organizations in formulating targeted interventions to enhance rural entrepreneurship and economic self-sufficiency.

2.   Literature Review and Theoretical Framework

2.1 Micropreneurship and Rural Development
These enterprises bridge market gaps by providing localized services and employment opportunities, thereby stimulating rural economies (Karlan et al., 2017). However, challenges such as limited financial access, inadequate business training, and weak market linkages often hinder their sustainability (De Mel, McKenzie, & Woodruff, 2008). Studies on rural India highlight SHGs as crucial enablers of financial intermediation,

social capital formation, and entrepreneurial skill development (Dr.Naveen Prasadula, 2022). SHGs also promote risk-sharing and strengthen business networks, enhancing micropreneurial resilience in economically vulnerable areas (Sanyal, 2009; Pitt et al., 2006).

2.2 Financial Inclusion and Micropreneurial Growth

In India, SHG-bank linkage programs have revolutionized micro-financing, particularly for women-led enterprises, reducing reliance on predatory lending systems (Rao, 2018; Khandker, 2005). However, concerns over over-indebtedness and financial distress highlight the need for responsible credit mechanisms (Banerjee et al., 2015; Bateman, 2010).

2.3 Social Capital and Entrepreneurial Success

Social capital, defined as networks that facilitate resource exchange and collective action, is essential for micropreneurial success (Putnam, 2000; Coleman, 1988). SHGs enhance social capital by fostering trust, reciprocity, and community support, improving business outcomes (Woolcock & Narayan, 2000; Granovetter, 1985). Strong intra-group ties (bonding social capital) and connections with external stakeholders (bridging social capital) significantly contribute to business scalability (Burt, 2005; Fukuyama, 2001).

Despite extensive research on rural micropreneurship, financial inclusion, and social capital, key gaps persist. Limited studies examine micropreneurship's mediating role in linking SHG participation with rural development (Kabeer, 2005; Chliova, Brinckmann, & Rosenbusch, 2015). Additionally, the gendered dimensions of SHG-driven entrepreneurship remain underexplored (Datta & Gailey, 2012; Swain & Wallentin, 2009).

2.4 Theoretical Framework

2.4.1 Capability Approach: Sen's (1999) Capability Approach provides a robust framework for understanding micropreneurship as a means of expanding individual freedoms and economic opportunities. SHG-driven enterprises enable members, particularly women, to enhance their capabilities by gaining financial autonomy, business skills, and social mobility (Nussbaum, 2003; Alkire, 2005). Prior research confirms that microfinance-backed entrepreneurship enhances both economic and non-economic freedoms, thereby fostering sustainable rural development (Robeyns, 2006; Biggeri, 2007).

2.4.2 Institutional Theory: Scott's (1995) Institutional Theory highlights how regulatory, normative, and cognitive institutions shape micro-enterprise success. In the context of SHGs, formal rules (microfinance policies, government regulations) and informal norms (community-based lending, cooperative business practices) collectively influence enterprise outcomes (North, 1990; DiMaggio & Powell, 1983). Researchers argue that weak institutional frameworks, particularly in rural India, limit micro-enterprise sustainability by restricting access to markets and financial resources (Bruton, Ahlstrom, & Li, 2010; Acemoglu & Robinson, 2012).

2.4.3 Sustainable Livelihoods Framework (SLF): The Sustainable Livelihoods Framework (SLF) (Chambers & Conway, 1992) provides a holistic perspective on rural entrepreneurship by analyzing the interactions between financial, human, natural, and social capital. SHG-led micropreneurs leverage multiple forms of capital to enhance business resilience and community welfare (Ellis, 2000; Scoones, 1998). Studies indicate that micro-enterprises contribute to household income stability, risk diversification, and long-term livelihood security, aligning with SLF principles (Bebbington, 1999; Krantz, 2001).

2.5 Conceptual Model and Hypothesis Formulation

Grounded in the Capability Approach, Institutional Theory, and Sustainable Livelihoods Framework, this study conceptualizes micropreneurship as a mediating force that channels social capital, financial access, and personal empowerment into tangible rural development outcomes. The proposed conceptual model (Figure 1) illustrates the hypothesized relationships among these constructs.

Figure 1: conceptual framework

Source: Author's own

H1: Social Capital and Rural Development

Social capital, characterized by strong interpersonal networks, reciprocal trust, and shared norms, is fundamental to fostering economic resilience in rural communities (Putnam, 2000; Woolcock & Narayan, 2000). In self-help group (SHG) ecosystems, social capital enables collective problem-solving, enhances information exchange, and strengthens market linkages (Burt, 2005; Granovetter, 1985). Prior studies suggest that well-connected micropreneurs benefit from improved business sustainability, risk-sharing mechanisms, and access to essential resources (Krishna, 2002; Aldrich & Meyer, 2015). Given these dynamics, it is posited that higher levels of social capital will significantly enhance rural development outcomes.

H1: Social capital (SOCCAP) has a positive and significant impact on rural development (RURDEV).

H2: Personal Empowerment and Rural Development

Personal empowerment, encompassing financial autonomy, self-efficacy, and decision-making capabilities, serves as a crucial driver of economic transformation (Bandura, 1997; Kabeer, 2005). Participation in SHG-led micropreneurial activities fosters individual agency, allowing members—particularly women—to overcome socio-economic constraints and actively contribute to household and community development (Swain & Wallentin, 2009; Datta & Gailey, 2012). Enhanced personal empowerment translates into greater financial stability, increased participation in economic decision-making, and improved social well-being (Sanyal, 2009; Alkire, 2005). Accordingly, personal empowerment is expected to exert a direct and significant influence on rural development.

H2: Personal empowerment (PEREMP) positively and significantly influences rural development (RURDEV).

H3: Micropreneurial Growth and Rural Development

Micropreneurial growth is a key mechanism through which rural economies experience expansion, employment generation, and poverty reduction (Morduch, 1999; Khandker & Samad, 2014). Sustainable micro-enterprises contribute to economic diversification by increasing household income, facilitating local production, and enhancing market accessibility (Bruhn & Love, 2014). Empirical research highlights that well-supported micropreneurs drive broader rural development through capital accumulation, business scalability, and value chain integration (Aghion & Bolton, 1997; Karlan & Zinman, 2011). Therefore, it is hypothesized that Micropreneurial growth significantly contributes to rural development.

H3: Micropreneurial growth (MICGRO) positively contributes to rural development (RURDEV).

H4: Personal Empowerment and Micropreneurial Growth

Empowerment, particularly in financial and decision-making domains, is a fundamental enabler of entrepreneurial success (Chliova, Brinckmann, & Rosenbusch, 2015). Individuals with higher self-confidence, resilience, and autonomy are more likely to take entrepreneurial risks, innovate, and sustain business ventures (Swain & Wallentin, 2009; Datta & Gailey, 2012). SHG participation strengthens these attributes by equipping members with essential business skills, leadership training, and financial literacy (Sanyal, 2009; Alkire, 2005). This heightened capability translates into entrepreneurial success, thereby reinforcing economic self-sufficiency. Thus, it is expected that personal empowerment significantly enhances Micropreneurial growth.

H4: Personal empowerment (PEREMP) has a positive and significant effect on Micropreneurial growth (MICGRO).

H5: Access to Financial and Business Resources and Micropreneurial Growth

Entrepreneurial success in rural contexts is heavily influenced by access to financial and business resources, including credit facilities, skill development programs, and market linkages (Beck, Demirgüç-Kunt, & Levine, 2007). Microfinance institutions (MFIs) and SHG-bank linkages alleviate capital constraints, enabling micropreneurs to expand, innovate, and increase business efficiency (Morduch, 1999; Khandker & Samad, 2014). Furthermore, the availability of technical training, digital tools, and mentorship programs enhances entrepreneurial capabilities, ensuring business sustainability (Bruhn & Love, 2014). Given these factors, it is posited that improved access to financial and business resources significantly contributes to Micropreneurial growth.

H5: Access to financial and business resources (ACCFBR) positively influences Micropreneurial growth (MICGRO).

H6: Social Capital and Micropreneurial Growth

Social capital serves as a foundational element for micro-enterprise success by enabling collective knowledge-sharing, resource pooling, and business networking (Putnam, 2000; Woolcock & Narayan, 2000). In SHG-based micropreneurial settings, trust-based networks facilitate smoother business transactions, enhance bargaining power, and open pathways to external markets (Burt, 2005; Granovetter, 1985). Strong intra-group connections provide informal support systems, reducing operational risks and improving overall business performance (Krishna, 2002; Aldrich & Meyer, 2015). Given these interdependencies, social capital is hypothesized to exert a significant positive effect on Micropreneurial growth.

H6: Social capital (SOCCAP) has a significant positive effect on Micropreneurial growth (MICGRO).3. Research Methodology

3. Research Methodology

3.1 Research Design

This study employs a case study research design to explore the mediating influence of micropreneurship on rural development, specifically within Kandhamal District, Odisha. Given the district's distinctive socio-economic landscape—marked by a strong presence of Self-Help Groups (SHGs) and an expanding micro-

enterprise sector—this design allows for an in-depth understanding of the underlying dynamics. The study follows a mixed-methods approach, incorporating both quantitative (structured surveys) and qualitative (semi-structured interviews) methodologies to ensure data reliability, validity, and triangulation. By integrating statistical modeling with contextual insights, this research aims to offer a nuanced analysis of how financial inclusion, social capital, and personal empowerment contribute to rural development through micropreneurial growth.

3.2 Data Collection

Primary data is collected through structured questionnaires and semi-structured interviews with key stakeholders, including SHG-affiliated micropreneurs, banking professionals, government officials, and representatives from non-governmental organizations (NGOs). The structured questionnaire is designed to measure critical constructs such as financial access, social capital, personal empowerment, micropreneurial growth, and rural development. Semi-structured interviews complement this data by capturing qualitative insights into the challenges and opportunities faced by rural entrepreneurs, as well as the institutional factors influencing micro-enterprise sustainability.

Secondary data sources include government reports, policy documents, and academic publications that provide additional context and validation for the primary data. Official reports on rural development and financial inclusion, district-level economic plans, NABARD and RBI assessments of microfinance programs, and impact evaluations of SHG-led initiatives offer a broad institutional perspective. Additionally, policy frameworks from the National Rural Livelihood Mission (NRLM) and microfinance institutions (MFIs), along with peer-reviewed studies on rural entrepreneurship in India, contribute to the study's theoretical and empirical foundation. By synthesizing both primary and secondary data, this research ensures a comprehensive and evidence-based analysis of micropreneurship's role in rural development.

3.3 Sampling Techniques and Sample Size Determination

A stratified random sampling technique is employed to ensure a representative and diverse dataset. Given the heterogeneity of the rural entrepreneurial ecosystem, this method accounts for variations across micro-enterprise sectors, geographic regions, and socio-economic backgrounds. The sampling frame is derived from government records of SHG members engaged in micro-enterprises, microfinance institution databases tracking financial access trends, and local development agencies supporting SHG-based entrepreneurial ventures. The study includes micropreneurs from key economic sectors such as agriculture, handicrafts, and small-scale services. Additionally, banking professionals and MFI representatives overseeing financial inclusion programs, along with government and NGO personnel facilitating rural entrepreneurship, are surveyed to provide broader institutional perspectives on the enabling and constraining factors affecting micro-enterprise growth.

The sample size is determined using Cochran's formula, which provides a statistically rigorous method for calculating an adequate sample size for large populations. This ensures that the study achieves a balance between statistical precision and practical feasibility. The application of this formula guarantees that the selected sample is both representative and sufficiently large to allow for robust analysis of the relationships between social capital, financial inclusion, personal empowerment, micropreneurial growth, and rural development. The sample size is determined using Cochran's formula for calculating an adequate sample for large populations:

$$n = \frac{Z^2 \cdot p \cdot (1 - p)}{e^2}$$

where n represents the required sample size, Z is the Z-score at a 95% confidence level (1.96), P is the estimated proportion of the population with the characteristic of interest (assumed 0.5 for maximum variability), and e is the margin of error (5%). Applying this formula, the estimated minimum sample size is 384 respondents. However, considering non-responses and missing data, a final target sample of approximately 576 micropreneurs and stakeholders is set.

3.4 Measurement of Variables

The key variables in this study are operationalized using a five-point Likert scale, ranging from 1 (Strongly Disagree) to 5 (Strongly Agree), ensuring consistency in measurement and facilitating statistical analysis. Financial access (ACCFRB) is measured by assessing the availability of loans, banking assistance, and financial literacy among micropreneurs. Respondents indicate the ease with which they can obtain business loans from formal financial institutions, reflecting the accessibility of financial resources necessary for enterprise sustainability and growth.

Personal empowerment (PEREMP) is gauged by examining levels of decision-making autonomy, self-confidence, and leadership skills. A key indicator assesses whether individuals perceive themselves as capable of making independent business decisions, highlighting the role of self-efficacy in entrepreneurial success.

Micropreneurial growth (MICGRO) is determined by evaluating business revenue trends, market expansion, and overall profitability. Respondents provide insights into the changes in their business income over the past year, offering a tangible measure of enterprise growth and stability.

Rural development (RURDEV) is assessed based on improvements in household income, employment generation, and economic resilience. Participants indicate whether their entrepreneurial activities have

enhanced their family's financial security, thereby illustrating the broader socio-economic impact of micropreneurship in rural communities.

3.5 Data Analysis Techniques

To analyse the relationships among social capital (SOCCAP), financial access (ACCFRB), personal empowerment (PEREMP), Micropreneurial growth (MICGRO), and rural development (RURDEV), Structural Equation Modelling (SEM) is employed. SEM is chosen for its ability to examine complex causal relationships with precision and robustness.

Data analysis is conducted using statistical software such as SPSS, AMOS, or STATA, ensuring accuracy and reliability. Descriptive statistics summarize the dataset, while Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) are utilized to validate the measurement model, ensuring construct validity and reliability.

The study conducts path analysis to evaluate the direct effects of social capital, financial access, and personal empowerment on both Micropreneurial growth and rural development. Model fit is assessed using key indices such as the Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA), and Standardized Root Mean Square Residual (SRMR).

Hypothesis testing is performed using standardized regression coefficients and significance levels, ensuring a robust assessment of the theoretical model. This approach provides empirical evidence on how social capital, financial access, and personal empowerment directly contribute to Micropreneurial success and broader rural economic development.

4. Results and Discussion

This section presents the empirical findings obtained through Structural Equation Modelling (SEM) while ensuring methodological rigor and interpretative clarity. The analysis evaluates sampling adequacy, reliability, and validity, followed by hypothesis testing and an assessment of the explanatory power of the proposed model.

Findings are contextualized within the broader theoretical framework and existing literature, offering insights into the direct impacts of social capital, financial access, and personal empowerment on Micropreneurial growth and rural development. The discussion integrates theoretical perspectives with empirical results, emphasizing the role of micropreneurship in fostering sustainable economic progress in Kandhamal's rural communities.

4.1. Descriptive Statistics

To assess the suitability of the dataset for factor analysis, the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy and Bartlett's Test of Sphericity were performed (Table 1). The KMO value of 0.920 indicates a high level of sampling adequacy, confirming that the data structure is appropriate for factor analysis. Additionally, Bartlett's Test of Sphericity produced a statistically significant chi-square value (χ^2 = 9332.264, df = 300, p < 0.001), further justifying the application of factor analysis by demonstrating sufficient correlations among variables.

Table 1:KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.920
Bartlett's Test of Sphericity	Approx. Chi-Square	9332.264
	df	300
	Sig.	.000

Source: Author's own

Table 2 demonstrates that the study's constructs exhibit strong reliability, convergent validity, and discriminant validity. The Cronbach's Alpha and Composite Reliability (ρc) values exceed the recommended threshold of 0.70, indicating high internal consistency across the measurement items. The Average Variance Extracted (AVE) values surpass 0.50, confirming that each construct explains a sufficient proportion of variance in its indicators, thereby supporting convergent validity. Additionally, discriminant validity is established using the Fornell & Larcker Criterion, as the square root of AVE (diagonal values) is greater than the inter-construct correlations, ensuring that each construct remains conceptually distinct. These findings confirm the robustness of the measurement model, providing a strong foundation for subsequent structural analysis.

Table 2:Reliability, Convergent Validity, and Discriminant Validity (Fornell & Larcker Criterion)

Constructs	Cronbach's Alpha	Composite Reliability (ρc)	AVE	Fornell & Larcker Criterion				
				ACCFBR	MICGRO	PEREMP	RURDEV	SOCCAP
ACCFBR	0.877	0.877	0.545	**0.739**				
MICGRO	0.859	0.86	0.606	0.61	**0.778**			
PEREMP	0.916	0.917	0.693	0.363	0.4	**0.832**		
RURDEV	0.881	0.881	0.6	0.263	0.374	0.55	**0.774**	
SOCCAP	0.931	0.931	0.73	0.342	0.476	0.328	0.332	**0.855**

Source: Author's own

The factor loadings presented in Table 3 indicate that all measurement items exhibit significant loadings above 0.70, reinforcing the robustness of the measurement model. These results provide strong empirical support for the construct validity of key variables, including Access to Financial and Business Resources (ACCFBR), Micropreneurial Growth (MICGRO), Personal Empowerment and Well-being (PEREMP), Rural Development (RURDEV), and Social Capital and Influence (SOCCAP). The high factor loadings confirm that the observed indicators effectively represent their respective latent constructs, ensuring the reliability and validity of the measurement framework for further structural analysis.

Table 3: Factor Matrix – Factor (Items) Loadings of the Constructs

ITEMS	ACCFBR	MICGRO	PEREMP	RURDEV	SOCCAP
ACCFBR1	1.000				
ACCFBR2	0.982				
ACCFBR3	1.045				
ACCFBR4	0.985				
ACCFBR5	0.973				
ACCFBR6	1.030				
MICGRO1		1.000			
MICGRO2		0.847			
MICGRO3		0.925			
MICGRO4		0.852			
PEREMP1			1.000		
PEREMP2			0.984		
PEREMP3			1.066		
PEREMP4			0.974		
PEREMP5			0.938		
RURDEV1				1.000	
RURDEV2				1.002	
RURDEV3				1.006	
RURDEV4				0.824	
RURDEV5				0.939	
SOCCAP1					1.000
SOCCAP2					1.120
SOCCAP3					1.148
SOCCAP4					1.114
SOCCAP5					1.091

Source: Author's own

Discriminant validity was assessed using HTMT Ratio and the Fornell-Larcker Criterion (Tables 4). HTMT values were below the 0.85 threshold, ensuring distinct constructs, while the Fornell-Larcker analysis confirmed that each construct's AVE square root exceeded its correlations with other constructs, reinforcing theoretical distinctiveness in table 2.

Table 4: HTMT Ratio-Coefficients					
Constructs	ACCFBR	MICGRO	PEREMP	RURDEV	SOCCAP
HTMT Ratio-coefficients					
ACCFBR	-				
MICGRO	0.627	-			
PEREMP	0.364	0.418	-		
RURDEV	0.263	0.391	0.573	-	
SOCCAP	0.348	0.479	0.348	0.351	-

Source: Author's own

The model fit indices (Table 5) confirm an excellent alignment between the hypothesized model and the observed data. The chi-square/df ratio of 2.388 falls within the recommended threshold, signifying a well-specified model. Additionally, the Root Mean Square Error of Approximation (RMSEA) of 0.049 and the Comparative Fit Index (CFI) of 0.960 indicate a strong model performance, demonstrating a high degree of explanatory power. Furthermore, the Goodness-of-Fit Index (GFI) of 0.917, the Adjusted Goodness-of-Fit Index (AGFI) of 0.898, and the Standardized Root Mean Square Residual (SRMR) of 0.038 reinforce the model's robustness and reliability for hypothesis testing and structural analysis.

Table 5: Models Fit Indices	
Indices	**Estimated model**
Chi-square(χ2)	632.836
Number of model parameters	60.000
Number of observations	576.000
Degrees of freedom (df)	265.000
P value	0.000
ChiSqr/df	2.388
RMSEA	0.049
GFI	0.917
AGFI	0.898
PGFI	0.747
SRMR	0.038
NFI	0.933
TLI	0.955
CFI	0.960

Source: Author's own

4.2. Hypothesis Testing and Model Estimation
Hypothesis testing was performed using SEM path analysis. Table 6 presents the standardized path coefficients, t-statistics, and significance values.

Table 6: Results of Hypotheses Testing - Mean, STDEV, P- Values							
Constructs	**Hypo-thesis**	**Original sample (O)**	**Sample mean (M)**	**STDV**	**T-statistics (|O/STDV|)**	**P - values**	**Result**
SOCCAP -> RURDEV	H1	0.119	0.122	0.050	2.372	0.018	Supported
PEREMP -> RURDEV	H2	0.458	0.462	0.044	10.295	0.000	Supported
MICGRO -> RURDEV	H3	0.132	0.126	0.062	2.130	0.034	Supported
PEREMP -> MICGRO	H4	0.142	0.141	0.043	3.266	0.001	Supported
ACCFBR -> MICGRO	H5	0.465	0.468	0.054	8.567	0.000	Supported
SOCCAP -> MICGRO	H6	0.271	0.268	0.049	5.478	0.000	Supported

Source: Author's own

The empirical findings provide strong support for the hypothesized relationships, confirming the role of social capital, financial access, and personal empowerment in fostering Micropreneurial growth and rural development. The results of hypothesis testing, as presented in Table 6, demonstrate statistically significant relationships across all constructs, reinforcing the theoretical model.

H1: Social Capital (SOCCAP) Positively Influences Rural Development (RURDEV)
The analysis confirms that social capital has a significant positive effect on rural development (β = 0.119, p = 0.018). The presence of strong social networks, mutual trust, and collective support within SHGs enables better access to resources, knowledge-sharing, and economic collaboration, all of which contribute to enhanced rural development. The findings align with existing research that highlights the role of social cohesion in strengthening community resilience and fostering sustainable economic growth.

H2: Personal Empowerment (PEREMP) Positively Influences Rural Development (RURDEV)
Personal empowerment exhibits a strong and highly significant impact on rural development (β = 0.458, p < 0.001), making it the most influential determinant among the tested constructs. Empowered individuals, particularly women in SHGs, demonstrate greater financial independence, leadership capabilities, and decision-making autonomy, which translate into improved household income, employment generation, and economic diversification. This finding reinforces the argument that empowerment-driven entrepreneurship is a catalyst for sustainable rural transformation.

H3: Micropreneurial Growth (MICGRO) Positively Contributes to Rural Development (RURDEV)

The study confirms a statistically significant relationship between Micropreneurial growth and rural development (β = 0.132, p = 0.034). Expanding micro-enterprises create job opportunities, stimulate local markets, and improve the standard of living in rural areas. The findings highlight the importance of policies that support micropreneurs in scaling their businesses as a means of achieving broader socio-economic development.

H4: Personal Empowerment (PEREMP) Positively Affects Micropreneurial Growth (MICGRO)

Personal empowerment significantly enhances Micropreneurial growth (β = 0.142, p = 0.001), suggesting that self-efficacy, decision-making autonomy, and leadership development contribute to entrepreneurial success. Entrepreneurs with higher confidence and control over resources are better positioned to take risks, innovate, and expand their businesses, further **supporting the linkage between empowerment and economic progression.**

H5: Access to Financial and Business Resources (ACCFBR) Positively Influences Micropreneurial Growth (MICGRO)

Financial and business resource accessibility has the most substantial effect on Micropreneurial growth (β = 0.465, p < 0.001). The ease of obtaining microfinance, technical training, and market linkages directly correlates with the ability of entrepreneurs to scale their businesses. The findings reaffirm the significance of inclusive financial systems and institutional support in fostering entrepreneurial success and economic sustainability.

H6: Social Capital (SOCCAP) Positively Affects Micropreneurial Growth (MICGRO)

Social capital is found to be a significant enabler of Micropreneurial growth (β = 0.271, p < 0.001). The ability of SHG members to leverage their networks for knowledge-sharing, business collaborations, and risk mitigation significantly enhances enterprise performance. The results validate the role of community-based initiatives in strengthening entrepreneurial ecosystems in rural settings.

4.3 R-Square Analysis and Explanatory Power

The R^2 results (Table 7) indicate that financial inclusion (FI) explains 17.3% (R^2 = 0.173) of the variance, highlighting its role in Micropreneurial success while suggesting the influence of additional factors like financial literacy and institutional support. Micropreneurial growth (MGE) accounts for 35.1% (R^2 = 0.351) of the variance in rural development, demonstrating moderate explanatory power and underscoring the need for complementary enablers such as policy interventions, infrastructure, and market access.

Table 7: R-Square Analysis	R-square
FI	0.173
MGE	0.351

Source: Author's own

4.4. Discussion of Key Findings

The empirical findings validate the conceptual model, emphasizing the crucial role of financial access, social capital, and personal empowerment in driving micropreneurial growth and rural development in Kandhamal. The results align with existing literature, reinforcing the significance of financial inclusion in business expansion (Beck et al., 2019) and the impact of social capital on entrepreneurial success (Putnam, 2000; Nahapiet & Ghoshal, 1998). However, the non-significant effect of personal empowerment (H2) challenges conventional perspectives that suggest a direct influence on business outcomes. This divergence highlights potential contextual barriers, including institutional constraints and limited access to entrepreneurial training, which may hinder the direct translation of personal empowerment into entrepreneurial success.

These findings extend the theoretical discourse by demonstrating how rural entrepreneurs strategically utilize financial and social resources to achieve sustainable economic growth. The study underscores the necessity of targeted policy interventions to enhance financial accessibility, reinforce social capital networks, and address systemic barriers to personal empowerment. Strengthening these foundational elements will be critical in fostering a more inclusive and resilient rural Micropreneurial ecosystem, ultimately advancing rural development in Kandhamal.

5. Conclusion and Policy Implications

This study provides empirical validation of the conceptual framework examining the role of financial access, social capital, and personal empowerment in driving micropreneurial growth and rural development in Kandhamal District, Odisha. The findings reinforce the significance of financial inclusion and social capital in enhancing entrepreneurial success while questioning the direct influence of personal empowerment. These insights align with existing research on financial inclusion and business expansion (Beck et al., 2019) and the

role of social networks in entrepreneurial success (Putnam, 2000; Nahapiet & Ghoshal, 1998). However, the non-significant impact of personal empowerment suggests the presence of contextual barriers such as institutional constraints and limited entrepreneurial training. This highlights the need for a multi-faceted policy approach that integrates financial accessibility, social capital enhancement, and structural support for micropreneurs.

5.1. Summary of Findings

The results of the Structural Equation Modeling analysis confirm that access to financial and business resources and social capital significantly influence micropreneurial growth, which in turn drives rural development. These findings support the hypotheses that financial inclusion and strong social networks play a crucial role in shaping entrepreneurial success in rural settings. However, personal empowerment does not exhibit a direct effect on micropreneurial growth or rural development, suggesting that financial and social resources are stronger determinants of economic progress than individual self-efficacy alone. The R-square values indicate that financial inclusion and social capital account for a moderate variance in micropreneurial growth, reinforcing the need for additional institutional and policy-level interventions to enhance the rural entrepreneurship ecosystem. These findings contribute to the broader discourse on inclusive rural economic development by emphasizing financial accessibility and social networks as critical enablers of micropreneurial success and sustainable rural development.

5.2. Theoretical and Practical Implications
5.2.1. Theoretical Contribution

This study advances the existing literature by integrating Institutional Theory and the Capability Approach to analyze micropreneurship's impact on rural development. The findings extend the applicability of financial inclusion and social capital theories in rural entrepreneurship, providing empirical validation of their role as primary enablers of micropreneurial success. The study also challenges existing assumptions regarding the direct impact of personal empowerment on economic outcomes, indicating that structural and contextual barriers may limit its effectiveness. By incorporating financial and social capital as core components of the analytical framework, the study offers a more nuanced perspective on rural entrepreneurship dynamics and underscores the importance of institutional support in fostering entrepreneurial growth.

5.2.2. Practical Contribution

The study offers valuable insights for policymakers, development organizations, and financial institutions engaged in rural economic development. Enhancing financial inclusion through targeted initiatives such as financial literacy programs, improved access to microcredit, and the reduction of bureaucratic constraints can facilitate small-scale entrepreneurial activities. Strengthening social capital through community-based initiatives such as Self-Help Groups and cooperative networks can enhance knowledge-sharing and business collaboration among rural entrepreneurs. Capacity-building initiatives should focus on business management training, market linkages, and digital entrepreneurship programs to bridge the skill gap among rural micropreneurs. Additionally, targeted rural development policies must address both financial and non-financial barriers to Micropreneurial success, ensuring that support mechanisms effectively reach marginalized groups and promote inclusive economic growth.

5.3. Limitations and Future Research Directions

Despite its contributions, this study has certain limitations that should be acknowledged. The research is geographically constrained to Kandhamal District, limiting the generalizability of the findings to other rural contexts with different socio-economic conditions. Future research should adopt a comparative cross-regional approach to validate the results across diverse rural landscapes. The study employs a cross-sectional design, which does not fully capture the evolving nature of micropreneurial growth and its long-term effects on rural development. A longitudinal research approach would provide deeper insights into these dynamics over time. Additionally, while financial access and social capital were found to be significant determinants of micropreneurial growth, other variables such as institutional support, technological accessibility, and policy incentives may further mediate or moderate rural entrepreneurial success. Future studies should incorporate these dimensions to develop a more comprehensive model for understanding rural entrepreneurship and economic transformation.

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