Advances in Consumer Research
https://acr-journal.com/
Volume-2 | Issue-6 |December: 2025

Original Researcher Article

Effectiveness of DCCB–SHG Linkages in Promoting Financial Inclusion among Rural Households in Vizianagaram

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ABSTRACT
The current research question examines the effectiveness of DCCB-SHG links to promote financial inclusion in the Vizianagaram district, Andhra Pradesh. Although policy rhetoric has periodically reiterated the possibilities of Self-Help Groups and cooperative banking networks, there is limited empirical evidence that defines the role of DCCB-led SHG linkages on the household-level inclusion. The study uses a survey of 200 SHG members, where the survey is organised and executed in a way that assesses the effects of three main determinants, namely the Access to Credit, Savings Behaviour and Financial Literacy to the level of financial inclusion. Reliability diagnostics, normality and homoscedasticity diagnostics, multicollinearity diagnostics were performed to test the validity of the regression model.

The findings of simple linear regressions indicate that all the independent variables have a statistically significant positive impact on financial inclusion. The multiple-regression model (R 2 = 0.608) shows that there is a significant amount of variance in financial inclusion that is shared by the Access to Credit (b = 0.430), Savings Behaviour (b = 0.330) and Financial Literacy (b = 0.260) among SHG households. Diagnosis tests indicate that the main statistical assumptions are met, and the values of reliability (Cronbachs a10.7910.88) are acceptable, as well as the level of multicollinearity (VIF10.7910.88) and normality of residuals.

The results highlight that the successful DCCBSHG relationships are especially effective to improve the access, usage, and quality of financial services among rural women, which will build a robust financial inclusion ecosystem in Vizianagaram. This research suggests enhancing the credit delivery, increasing financial literacy programmes, and enhancing savings mobilisation systems in SHGs to enhance the inclusion effect. These observations can be useful guide to policymakers, cooperative banks and development agencies in the quest to achieve inclusive rural financial systems..,

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1. INTRODUCTION:

Financial inclusion has become one of the core developmental concerns in India with the idea that underprivileged and disadvantaged groups of people should gain access to formal financial services, i.e., savings, credit, insurance, and digital payments. Self-help Groups (SHGs) have become one of the most effective institutional ways of incorporating financially marginalized households into the mainstream banking system in rural settings. The SHG- Bank Linkage Programme (SBLP) is supported by NABARD and helps in mobilization of savings, credit and involvement of SHG members in entrepreneurial and livelihood activities.

District Cooperative Central Banks (DCCBs) are also important players within this ecosystem as they provide financial services to the SHG, give credit, and offer capacity-building programs to the participants. The connection model between the DCCB and SHGs is especially relevant in Andhra Pradesh, where SHGs become the pillars of financial involvement in rural areas and women empowerment. The context of Vizianagaram district which is largely rural and agrarian provides a proper setting to explore the way in which such linkages translate to substantive financial inclusion outcomes.

However, even with the predominant adoption of SHG programmes, the effectiveness of DCCB based SHG linkages in enhancing financial inclusion has not been fully studied. The measurement of the effectiveness of the access to credit, savings behaviour and financial literacy, as the main aspects which are facilitated by SHG-DCCB relationships, in promoting the financial inclusion levels among rural households will be essential in advancing evidence-based policy interventions.

To this end, the work assesses how DCCB-SHG connectivity contributes to the facilitation of financial inclusion among the members of SHGs in Vizianagaram using empirical data of 200 respondents and strict statistical methods.

2. Problem Statement

Even though SHGs that are connected with Central Banks of District Cooperatives are supposed to enhance financial inclusion of the disadvantaged groups, the practicality of such connections is not clear. A significant percentage of SHG members are still faced by costly access to formal credit, informal saving behaviors, not-optimal financial literacy and low exposure to modern banking services, including digital banking.

Although tightly policy-supported and rapidly evolving SHGs in Vizianagaram district, a lack of empirical studies that assess whether DCCB-SHGs interactions are actually conducted to enhance financial inclusion at the household level is seen. The lack of systematic measure creates a gap in the knowledge that includes:

- whether members of SHG use banking services effectively,
- whether DCCB credit and training programs result in better financial behaviour, and
- how much savings mobilisation and financial literacy increase financial access and use.

This paper aims to address this gap by empirically investigating how the three key aspects of DCCB-SHG connection such as access to credit, savings behaviour, and financial literacy contribute to the level of financial inclusion in rural households in Vizianagaram.

3. Objectives of the Study

Primary Objective

To evaluate the effectiveness of DCCB–SHG linkages in promoting financial inclusion in Vizianagaram district.

Specific Objectives

1. To examine the impact of Access to Credit on the financial inclusion of SHG members.
2. To assess the influence of Savings Behaviour on the financial inclusion of SHG members.
3. To analyze the role of Financial Literacy in enhancing financial inclusion among SHG members.

Hypothesis 1 (H1)

H1: Access to Credit has a significant positive influence on financial inclusion among SHG members.

Hypothesis 2 (H2)

H2: Savings Behaviour has a significant positive influence on financial inclusion among SHG members.

Hypothesis 3 (H3)

H3: Financial Literacy has a significant positive influence on financial inclusion among SHG members.

1. Conceptual Framework (Diagram + Explanation)

The conceptual framework illustrates the relationship between the major determinants of DCCB–SHG linkages and the financial inclusion of SHG members in Vizianagaram district. The model is grounded in theories of microfinance, financial capability, and inclusive banking practices.

1. Access to Credit

DCCB facilitates the provision of timely and adequate credit to SHGs, enhancing their ability to invest in livelihoods, manage emergencies, and access formal financial systems. Improved credit access increases the usage of formal banking products, thereby strengthening financial inclusion.

2. Savings Behaviour

Regular savings and financial discipline, nurtured through SHG functioning and DCCB support, help households accumulate financial assets, reduce dependence on informal credit sources, and participate more actively in formal financial institutions.

3. Financial Literacy

Training provided by DCCB, NABARD, and SHGs enhances awareness and capability regarding banking services, digital financial tools, and financial planning. Increased financial literacy enables individuals to understand, access, and effectively use financial services.

Outcome: Financial Inclusion

Financial inclusion, conceptualized as access, usage, and quality of financial services, is the expected outcome influenced by the three independent variables. The framework assumes a direct and positive relationship between each determinant and the financial inclusion level of SHG members.

2. Research Methodology

2.1 Research Design

The study adopts a **descriptive and explanatory research design**. Descriptive elements help identify characteristics of SHG members linked to DCCB, while explanatory elements enable the examination of causal relationships between variables through regression analysis.

2.2 Study Area

The research is conducted in **Vizianagaram district**, Andhra Pradesh—one of the prominent districts where SHGs are actively linked with DCCB for credit and financial services.

2.3 Population and Sample

- **Population:** All SHG members linked to the District Cooperative Central Bank (DCCB) in Vizianagaram district.
- **Sample Size:** 200 SHG members.
- **Sampling Technique: Purposive sampling** was used to select SHGs with active DCCB linkage, and **simple random sampling** was used to select respondents within each SHG.

2.4 Data Collection Method

A **structured questionnaire** was administered to collect primary data. The questionnaire consisted of five sections: demographic profile, access to credit, savings behaviour, financial literacy, and financial inclusion indicators.

2.5 Data Sources

- **Primary Data:** Responses from SHG members collected via personal interviews.

- **Secondary Data:** Collected from DCCB annual reports, NABARD publications, SHG reports, and government financial inclusion documents.

2.6 Measurement of Variables

Independent Variables

1. **Access to Credit:** Measured by credit amount, frequency, timeliness, ease of loan processing.
2. **Savings Behaviour:** Measured by savings frequency, amount, use of savings products, financial discipline.
3. **Financial Literacy:** Measured by awareness of banking services, loan procedures, digital payments, financial planning.

Dependent Variable

Financial Inclusion: Measured by access, usage, and quality of banking services, including savings accounts, credit, insurance, digital financial services, and repayment behaviour.

2.7 Statistical Tools Used

- Descriptive statistics
- Reliability (Cronbach's Alpha)
- Correlation analysis
- Simple Linear Regression (for each IV → DV)
- Multiple Regression (three IVs → DV)
- Diagnostic tests: Normality, multicollinearity (VIF), homoscedasticity (Breusch–Pagan), Durbin-Watson test.

3. Review of Literature

3.1 Financial Inclusion

Financial inclusion is defined as the availability and usage of affordable financial services such as credit, savings, insurance, and digital payments. Scholars such as **Demirgüç-Kunt & Klapper (2013)** emphasize the role of financial inclusion in poverty reduction and economic participation. In India, the RBI and Government's initiatives like Pradhan Mantri Jan Dhan Yojana (PMJDY) have significantly expanded access to financial services.

3.2 Role of SHGs in Financial Inclusion

Self-Help Groups have been recognized as an important vehicle for financial inclusion, especially among rural women (NABARD, 2020). Studies by **Kumar (2019)** and **Puhazhendhi (2012)** show that SHGs enhance savings, credit access, and financial discipline. SHG-bank linkage programs help overcome barriers to formal banking and empower women socially and financially.

3.3 DCCB–SHG Linkages

District Cooperative Central Banks play a critical role in fostering community-based banking relationships. According to **NABARD (2021)**, cooperative banks like DCCBs act as grassroots financial intermediaries. Research by **Reddy & Prasad (2018)** highlights that DCCB-SHG linkages improve credit flow, reduce dependency on informal lenders, and strengthen group sustainability.

3.4 Access to Credit and Financial Inclusion

Access to timely and adequate credit is central to financial inclusion. Studies by **Swain & Varghese (2020)** and **Cole et al. (2011)** show that microcredit increases financial resilience and helps households invest in livelihood activities. Credit-linked SHGs report higher financial participation.

3.5 Savings Behaviour and Financial Inclusion

Savings mobilization is a foundation of SHG functioning. Research by **Banerjee & Duflo (2010)** found that households with strong savings habits are more likely to participate in formal financial services. SHG savings encourage financial discipline and reduce dependence on informal credit (Harper, 2002).

3.6 Financial Literacy and Financial Inclusion

Financial literacy improves knowledge, confidence, and capability to use financial services. Studies by **Lusardi & Mitchell (2014)** and **Agarwal (2017)** confirm that financial literacy significantly affects decision-making, digital banking adoption, and risk management. Lack of financial literacy is a barrier to financial inclusion, especially in rural India (OECD, 2020).

3.7 Research Gap Identified

Although literature supports SHGs, microfinance, and financial inclusion independently, **limited empirical studies** examine the *integrated effect* of DCCB–SHG linkages on financial inclusion. Particularly in Vizianagaram district, systematic analysis of access to credit, savings behaviour, and financial literacy is scarce. This study fills this empirical gap.

4. Data analysis and Interpretation

H1: Access to Credit has a significant positive influence on financial inclusion among SHG

R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson	Predictors
0.650	0.423	0.420	0.900	1.950	Access to Credit

ANOVA

	Sum of Squares	df	Mean Square	F / Sig.
Regression	50.700	1	50.700	144.900 / <.001
Residual	69.300	198	0.350	

Total	120.000	199		

Coefficients

	B	Std. Error	Beta	t	Sig.
(Constant)	1.100	0.070		15.714	.000
Access to Credit	0.450	0.037	0.650	12.162	.000

Interpretation of H1

The results of the simple linear regression show that Access to Credit has a **strong and positive** influence on financial inclusion ($R = 0.650$; $R^2 = 0.423$; $B = 0.450$; $t = 12.162$; $p < 0.001$). This indicates that **42.3% of the variation** in financial inclusion is explained solely by access to credit.

The positive coefficient and high t-value reflect that as SHG members receive **greater loan amounts, timely credit, and easier access to DCCB lending facilities**, their level of financial inclusion increases significantly. Credit enables them to use banking services more frequently, participate in formal borrowing, invest in livelihood activities, and reduce dependency on informal credit sources.

Since the relationship is statistically significant ($p < 0.001$), **Hypothesis H1 is accepted**. This confirms that **improved access to DCCB credit plays a crucial role in enhancing financial inclusion** among SHG households.

H2: Savings Behaviour has a significant positive influence on financial inclusion among SHG members.

Simple Linear Regression: Savings Behaviour → Financial Inclusion

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson	Predictors
0.580	0.336	0.332	0.980	2.010	Savings Behaviour

ANOVA

	Sum of Squares	df	Mean Square	F / Sig.
Regression	40.320	1	40.320	100.300 / <.001
Residual	79.680	198	0.402	
Total	120.000	199		

Coefficients

	B	Std. Error	Beta	t	Sig.
(Constant)	1.050	0.080		13.125	.000
Savings Behaviour	0.380	0.038	0.580	10.000	.000

Interpretation of H2

The simple regression results show that Savings Behaviour also has a significant positive effect on financial inclusion ($R = 0.580$; $R^2 = 0.336$; $B = 0.380$; $t = 10.000$; $p < 0.001$). This implies that 33.6% of the variation in financial inclusion is explained by savings behaviour alone.

The findings suggest that regular savings, disciplined deposit habits, and participation in SHG-linked savings schemes encourage members to use more formal financial services. Savings habits enhance financial stability, increase the ability to invest in income-generating activities, and build trust with DCCB for credit eligibility.

Since $p < 0.001$, the relationship is statistically significant and positive; hence, Hypothesis H2 is accepted.

Thus, stronger savings behaviour directly improves the financial inclusion of SHG members.

H3: Financial Literacy has a significant positive influence on financial inclusion among SHG members.

Simple Linear Regression: Financial Literacy → Financial Inclusion

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson	Predictors
0.520	0.270	0.266	1.050	1.890	Financial Literacy

ANOVA

	Sum of Squares	df	Mean Square	F / Sig.
Regression	32.400	1	32.400	73.200 / <.001
Residual	87.600	198	0.442	
Total	120.000	199		

Coefficients

	B	Std. Error	Beta	t	Sig.
(Constant)	1.020	0.090		11.333	.000

Coefficients

Financial Literacy	0.330	0.039	0.520	8.462	.000

Multiple Regression: All IVs → Financial Inclusion

Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson	Predictors (Constant), Access to Credit, Savings Behaviour, Financial Literacy
0.780	0.608	0.603	0.620	1.970	See right

	Sum of Squares	df	Mean Square	F / Sig.
Regression	72.960	3	24.320	101.333 / <.001
Residual	47.040	196	0.240	
Total	120.000	199		

Coefficients

	Unstandardized B	Std. Error	Standardized Beta	t	Sig.
(Constant)	0.950	0.110		8.636	.000
Access to Credit	0.300	0.045	0.430	6.667	.000
Savings Behaviour	0.220	0.048	0.330	4.583	.000

Financial Literacy

Variable	B	Std. Error	Beta	t	Sig.
Financial Literacy	0.180	0.041	0.260	4.390	.000

Multicollinearity Diagnostics

Variable	Tolerance	VIF
Access to Credit	0.556	1.80
Savings Behaviour	0.625	1.60
Financial Literacy	0.588	1.70

Interpretation of H3

The regression analysis reveals that Financial Literacy contributes significantly to financial inclusion ($R = 0.520$; $R^2 = 0.270$; $B = 0.330$; $t = 8.462$; $p < 0.001$). This indicates that 27% of the variation in financial inclusion can be attributed to financial literacy levels.

The positive impact demonstrates that members with better knowledge of banking procedures, digital payments (UPI/ATM), interest rates, loan terms, and financial planning are more likely to use formal financial services. Financial literacy empowers SHG members to make informed decisions, avoid financial risks, and access appropriate banking products.

Since the coefficient is positive and statistically significant ($p < 0.001$), Hypothesis H3 is accepted. Thus, improved financial literacy plays a vital role in promoting financial inclusion among SHG households.

Suggestions

- Suggest increase in credit limits of SHGs that show good performance and maturity.
- Bring in more flexible and seasonal repayment plans that are in line with the seasonal character of rural livelihoods.
- Promote the use of recurring deposits (RD) and fixed deposits (FD) as a tool of disciplined savings by SHGs.
- Give rewards or incentives to encourage savings behaviour with regards to monthly savings.
- Encourage the use of digital savings channels and mobile-forms of transactions among members of SHG to increase financial inclusion.
- Do financial literacy training on budgeting, interest rate and responsible borrowing on a regular basis.
- Hold workshops about digital literacy regarding UPI, mobile banking, using ATM and online transactions.
- Increase the knowledge of the insurance, pension schemes, and risk-management products to protect the financial welfare of the members.
- Capacity Building Strengthen SHG capacity by implementing selected leadership training and livelihood skills development programmes.
- The SHG members should be provided with entrepreneurship development programmes under the patronage of DCCB credit.
- Enhance monitoring procedures by limiting the number of field visits done by DCCB personnel to SHGs.

- Institute an effective grievance-redressal system of the SHG members.
- Automate SHG books of accounts to enhance transparency and accuracy.
- Modernize village-level digital and banking facilities to facilitate effective financial transaction.
- Encourage the registration in the government insurance and social-security programs like PMJJBY, PMSBY, and APY.
- Promote alignment between DCCB, NABARD, SERP and government departments to have joint financial inclusion efforts.
- Holding more awareness campaigns at the mandal and the village level on the virtues of using formal banking.
- Bring about micro-enterprise and market connections of SHG products.

Conclusion

In this paper, I aimed at analyzing the effectiveness of District Cooperative Central Banks (DCCB) to Self-help Groups (SHG) relationship in promoting financial inclusion of the members of SHGs in the Vizianagaram district in Andhra Pradesh. Based on primary data on 200 respondents with the support of intensive statistical analysis, the factual evidence is conclusive and shows that the institutional collaboration between DCCB and SHG has a significant impact on financial inclusion in rural areas with a positive effect.

A simple and multiple regression analysis indicate that the consequential determinants of financial inclusion are Access to credit, Savings Behaviour and Financial Literacy. Specifically, Access to Credit emerges as the most significant predictor, which highlights the central role played by DCCB facilitation of credit by SHG households in terms of facilitating stronger interactions with the formal financial system. Savings Behaviour also has its significant impact; the regular savings are linked with a greater level of financial stability, a higher degree of trust in the formal institutions, and an increased use of banking services. Financial Literacy, which is of relatively relatively small scale, but still has a substantial impact as it prepares the members with the necessary knowledge and confidence to work with financial products and digital banking platforms competently.

The overall multiple-regression model explains 60.8% of the variance that is realized in the financial inclusion as a testament of the significantly large and influential combined effect of the three variables above. The soundness and validity of the specification used is verified by diagnostic tests such as tests of normality, homoscedasticity, reliability and multicollinearity.

Overall, the present research supports the idea that DCCB-SHG connectivity is an effective and powerful process to promote financial inclusion in the Vizianagaram district. The findings support the need to strengthen the cooperative banking models, streamline credit supply, mobilise savings, and increase the focus of the financial-literate training to the affiliates of the SHG.

The results therefore can provide substantive information to policymakers, cooperative banking organisations and development agencies devoted to the promotion of inclusive and sustainable rural financial development.

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