

Assessment of the contributions of Agro-based cooperatives on financial empowerment of rural dwellers in Nasarawa state

*OKAFOR, Chukwudi Cosmas, Hussaini Tukur Hassan & Becky Aliegba

Department of Public Administration, Faculty of Administration, Nasarawa State University, Keffi, Nigeria.

*Corresponding Author: cosdorat@gmail.com

Abstract

The widespread belief that rural dwellers are marginalized has brought global attention to their socio-economic status, particularly in developing countries like Nigeria and states such as Nasarawa. This study investigates the contributions of agro-based cooperatives to the financial empowerment of rural dwellers in Nasarawa State. The target population consisted of members from nine agro-based cooperatives across three senatorial zones, totalling 11,901 registered members. The sample size was calculated using the Taro Yamane formula, resulting in a base sample of 387, which was increased by 30% to account for potential non-responses, yielding a final sample size of 503 respondents. A multi-stage sampling technique was utilized. Data were collected through a structured questionnaire in form of a 5-point Likert scale for respondents' agreement on various statements. The study data was analysed using descriptive statistics and simple regression analysis to test the study's hypotheses. It was found that agro-based cooperatives significantly enhance access to credit facilities, contributing to the economic empowerment, and cooperative savings play a significant role in boosting the income levels of rural dwellers in Nasarawa State. The study recommended that Governments and relevant authorities should develop policies that promote the establishment and sustainability of agro-based cooperatives, including financial incentives and training programs to enhance their operational capacities. Financial institutions should create tailored financial products for agro-based cooperatives to facilitate easier access to credit and improve their financial resilience.

Keywords: Agro-based cooperatives, financial empowerment, rural dwellers, credit facilities, income levels, financial inclusion.

1. Introduction

The widespread belief that rural dwellers are marginalized has brought global attention to their socio-economic status, particularly in developing countries like Nigeria and states such as Nasarawa. This perspective stems from observed disparities in access to essential services, economic opportunities, and infrastructural development between urban and rural areas. Socio-economic empowerment of rural dwellers has to do

with promoting their capacity to improve their economic status, social standing, overall quality of life and financial strength.

Financial empowerment explains individuals' and communities' capacity to control and utilize financial resources for their benefit. It is widely recognized as fundamental to sustainable development and poverty reduction. It is noted that the financial empowerment of rural

populations is widely acknowledged as essential for sustainable economic development. International bodies likewise emphasize cooperatives' role in expanding access to finance. A recent UN report urges that "financial institutions, including co-operatives, should be encouraged to provide access to financial products, services and information to rural women (Lecoutere & Van Campenhout, 2023). By pooling resources and knowledge, cooperatives help members gain savings and credit opportunities that bolster their economic status.

Globally, agro-based cooperatives are seen as vital engines for economic inclusion. The United Nations has highlighted the sector's impact by declaring 2025 the International Year of Cooperatives under the theme "Cooperatives Build a Better World (Remling & Meijer, 2025). This declaration recognizes how cooperative society drive broad social and economic goals. For instance, Nigeria's Minister of Agriculture recently noted that the world's largest cooperatives generate about a \$2.4 trillion turnover and play a "crucial role in driving economic growth and social development (FMAFS, 2025). Such observations reflect the consensus that cooperative models foster economic empowerment: by aggregating members' savings and production, they can increase incomes, improve market access, and help reduce poverty.

African institutions underscore the importance of cooperatives for rural empowerment. The ILO's Cooperative Facility for Africa reports that cooperatives provide essential services to self-employed rural families especially women by overcoming constraints like limited capital and market access (Schwettmann, 2022). In practice, agricultural cooperative societies enable farmers to pool land, inputs or produce, which raises their bargaining power and yields. For example, co-ops help women farmers increase

output and income by jointly purchasing inputs and marketing crops under fair-trade terms. Through these functions such as providing financial intermediation and shared resources cooperatives directly support the financial empowerment of rural communities across the continent.

In Nigeria, both research and policy stress cooperatives' role in empowering rural households. A study of Imo State found that local co-ops give members control over livelihoods by supplying farm inputs, vocational skills and market channels (Okwara & Uhuegbulem, 2017). Such services effectively raise members' productivity and earnings. Nationally, the government is actively promoting cooperative development as part of its economic agenda. Officials have argued that a revitalized cooperative sector will "ensure empowerment and prosperity" for Nigerians, noting that agricultural cooperative societies already comprise a large share of global co-operative assets (Daniel & Ekoriko, 2024). This policy focus echoes the idea that cooperatives can improve financial outcomes for individuals for example by pooling savings and offering credit facilities that individuals might not otherwise access.

In rural areas of Nigeria, agro-based cooperatives often take the form of savings-and-credit groups or community banks that extend financial services where formal banks do not reach. Agricultural Savings and Credit Cooperative Organizations (SACCOs), for instance, offer farmers and small entrepreneurs accessible loans and deposit accounts (Njideka et al., 2023). Such cooperatives societies provide rural entrepreneurs with accessible financial services, such as savings and credit, thereby filling gaps in the financial system. By channelling small loans and collective investment into farming or small businesses, these institutions enhance members' capacity to improve their farms and businesses. In

turn, this collective finance mechanism promotes financial inclusion allowing rural households to build assets, cope with shocks, and gradually accumulate capital for further growth.

Nasarawa State (central Nigeria) hosts a number of agro-based cooperatives that illustrate this empowerment in practice. For example, rice and crop farmer associations such as the Rice Farmers Association of Nigeria (Karu Branch), the All Farmers Association of Nigeria (AFAN, Keffi Branch), and the Nasara Agricultural Cooperative Society (Nasarawa LGA) unite growers to share inputs, knowledge and market links. Grassroots groups like the Dacewa Multipurpose Cooperative Society (Shabu, Lafia) and the United Farmers Association Kadarko (Keana LGA) similarly bring rural producers together to pool resources. These cooperatives have enabled farmers to adopt new technologies and improve productivity (Yusuf et al., 2025). In one case, members of the Dacewa MPCs Shabu were trained in biochar and bokashi production, which enhanced soil fertility. This cooperative training led to a 19% increase in rice yield on treated fields and visible income gains for members. Such outcomes underscore how collective action through cooperatives can translate technical support and shared finance into tangible income growth.

The primary purpose of agro-based cooperatives is to promote and support agricultural activities within communities, including those in rural areas. Nasarawa State, which has high agricultural potentials, both in crops cultivation, livestock farming and aquaculture, and is blessed with agriculturally active population, boasts of the presence of numerous agro-based cooperative societies. Paradoxically however, the presence of the agro-based cooperatives has not brought about manifest transformation of the plight of rural

dwellers, as they continue to exhibit poor levels of enablement year in year out. This discrepancy calls into question the effectiveness of these cooperatives in fostering economic empowerment for these communities. Hence, it became expedient to conduct a comprehensive study to evaluate the contributions of agro-based cooperatives to the financial empowerment of rural dwellers in Nasarawa State, to ascertain their commitment or otherwise. This research therefore, aims at assessing the contributions of agro-based cooperatives to financial empowerment of rural dwellers in Nasarawa State, as well as providing valuable understandings that could inform policy decisions on cooperative management practices to enhance their effectiveness in empowering rural communities.

2. Literature Review

Agro-Based Cooperatives

Agro-based cooperatives are commonly presented in the literature as collective economic institutions established to address agricultural, social, and financial challenges faced by farmers. Manta (2017) conceptualizes agro-based cooperatives primarily from an institutional standpoint, emphasizing their operation within defined legal frameworks and governance structures. In contrast, the International Co-operative Alliance (2020) foregrounds their normative and ideological foundations, defining agro-based cooperatives as voluntary, democratically controlled enterprises designed to meet members' shared economic, social, and cultural needs. While these definitions converge on the cooperative's collective character, they diverge in emphasis one prioritizing regulatory compliance and structure, and the other stressing participation, ownership, and democratic control.

Access to Credit

Access to credit is widely identified as a central mechanism through which agro-based cooperatives enhance rural financial empowerment. Karlan and Morduch (2010) adopt a broad financial systems perspective, defining access to credit as the ability of individuals or organizations to obtain loans or credit lines to support economic activities. Nabimanya et al. (2022), however, adopt a more sector-specific lens, emphasizing smallholder farmers' access to finance for agricultural inputs, equipment, and productive assets. While both perspectives agree on credit's importance, they differ in scope one focusing on general financial inclusion and the other on agricultural productivity.

Cooperative Savings

The literature on cooperative savings presents a shared recognition of its importance but diverges in interpretation and emphasis. Saghezchi et al. (2015) frame cooperative savings primarily as a social and mutual-support mechanism, rooted in collective responsibility and community solidarity. In contrast, Carrera et al. (2021) emphasize its financial and institutional role, defining cooperative savings as accumulated reserves that underpin cooperative sustainability and facilitate lending activities. While these perspectives are complementary, the literature rarely contrasts their implications. The social interpretation emphasizes inclusiveness and mutual aid, whereas the institutional perspective prioritizes financial discipline and sustainability. This raises an unresolved tension: cooperative savings may strengthen the collective financial base of cooperatives while simultaneously constraining individual members' liquidity, particularly among poorer rural dwellers.

Income

Income stands as a fundamental aspect of financial empowerment, serving as a

mirror that reflects an individual's financial resources and the doors of opportunity that may open or close based on one's economic standing (Monaco, 2023). The United Nations Development Programme (UNDP, 2021) offered a comprehensive definition of income, describing it as the continuous stream of economic resources that flows to an individual or household over a specified timeframe, typically measured annually.

Rural Dwellers

Defining rural dwellers can vary widely depending on the criteria used, such as population size, density, and context, which leads to diverse thresholds and classifications. This complexity means that defining rural populations requires a nuanced approach that includes a combination of factors such as demographics, access to services, economic activities, and political representation. This comprehensive approach helps to capture the varied experiences and conditions of rural living (Popoola, 2023). Scoones (2015) characterised rural dwellers as individuals who live in areas with low population density, where their livelihoods are primarily dependent on agriculture and natural resource-based activities. These areas are often marked by limited infrastructure, reduced access to services, and fewer economic opportunities. The sparse population density and reliance on agriculture and natural resources define the rural experience, which frequently includes challenges related to inadequate infrastructure and limited opportunities for economic advancement.

Financial Empowerment

Financial empowerment is comprehensively defined as a coordinated set of interventions designed to improve financial outcomes for individuals living in poverty by enhancing their financial inclusion, knowledge, behaviors, and opportunities. According to Robson (2017), it encompasses financial education,

coaching, access to safe financial products, and consumer protection, all aimed at building financial security and alleviating poverty. This approach integrates multiple strategies such as financial information and guidance, tax filing assistance, access to affordable financial services, saving and asset building opportunities, and consumer education to reduce financial risks. The goal is to equip low-income individuals with the tools and support necessary to improve their financial stability and access pathways out of poverty, such as education, employment, and homeownership. This definition highlights financial empowerment as a multidimensional framework that goes beyond mere financial literacy to include practical support and systemic access to resources.

Phojanakong et al. (2020) emphasised financial empowerment is a life-based coaching and education process tailored to individual lived experiences, recognizing that financial decisions are deeply intertwined with broader life contexts. This perspective stresses the importance of multigenerational impacts and action-oriented support that helps individuals set realistic goals and develop the skills needed to achieve their financial aspirations. Complementing this, Nam (2023) defines financial empowerment as the capacity to make informed and effective decisions about money and resources, coupled with the confidence and motivation to act toward improving financial well-being and achieving goals. This definition underscores that financial empowerment is not just about income or savings but also involves knowledge, skills, confidence, and access to appropriate financial products and services. Salim et al. (2024) further describe it as a degree of financial autonomy and confidence that enables individuals or communities to responsibly represent their interests and make informed

financial decisions, manage finances proficiently, plan for emergencies and retirement, and ultimately foster financial stability and an improved standard of living. Together, these perspectives illustrate financial empowerment as a holistic, dynamic process that integrates knowledge, behavioral skills, personal confidence, and systemic access to resources, enabling individuals to take control of their financial lives and improve their economic conditions.

Empirical Review

Access to Credit and Empowerment

The study conducted by Odido and Nwankwo (2021) investigated the role of access to loans on poverty reduction among rural residents of Ogun State, Nigeria. Utilizing a descriptive survey methodology, the research targeted 11,542 registered members of credit and thrift cooperatives in Ogun State. A multi-stage sampling technique was employed to obtain a sample size of 387 respondents. Data were collected from both primary and secondary sources, with primary data gathered through a survey questionnaire and secondary data sourced from journals and related online studies. Out of the 387 questionnaires distributed, 290 were completed and used for analysis. The study employed simple percentages and multiple regression analysis to reveal that access to loans has a significant and positive impact on poverty reduction. The findings indicated that loans provided by cooperative societies contributed to alleviating poverty among rural dwellers and positively influenced their overall welfare. While the study effectively focused on its scope and employed a sound methodological approach, it faced limitations related to sample size. The number of returned questionnaires, totalling 290, was below the expected minimum of 384, given the population size of 11,542. This shortfall suggests that the sample may not fully represent the entire

population of interest, potentially affecting the generalizability of the findings.

Ogbeide (2015) investigated the role of cooperative societies as a development strategy in Edo State, Nigeria. Utilizing a survey research design, the study focused on fish farmers affiliated with fisheries cooperatives in Orhiomwon, Ovia South West, and Ikpoba Okha local government areas (LGAs). A sample of 150 respondents was selected through a convenience sampling technique, and data were collected via a survey questionnaire. The collected data were analysed using frequency distribution, percentages, and Chi-square tests. The study found a positive and significant relationship between access to finance and rural development, concluding that cooperative societies significantly contribute to the growth of rural businesses in these communities. The study is commendable for its methodological rigor, focusing solely on fisheries cooperatives in one region may limit the generalizability of its findings. The study focus was limited to fisheries cooperatives in only three local government areas within Edo State, Nigeria. This narrow geographic and sectoral scope limits the generalizability and applicability of the findings to other types of agro-based cooperatives or different regions within Nigeria. Furthermore, the study is somewhat dated, suggesting the need for updated research that includes other agro-based cooperatives across various states, such as Nasarawa State, to provide a broader and more comprehensive understanding of the role of cooperatives in rural development throughout Nigeria.

Cooperative Savings and Empowerment

Nahwera et al. (2022) conducted an in-depth examination of how Village Saving and Loan Associations (VSLAs) have contributed to the socioeconomic empowerment of women in Rubaya Sub-County. The study utilized a cross-

sectional survey design, incorporating both quantitative and qualitative methods for data collection and analysis. The population studied included 230 members and leaders of VSLAs who were fully registered with the community development officer in Rubaya Sub-County, as well as VSLA trainers and local government leaders from selected wards. A proportionate sampling technique was employed, resulting in a sample size of 140 participants. Purposive and simple random sampling methods were used during sample selection. The researchers used questionnaires, interviews, and focus group discussions as instruments for data collection, and the data were analysed using simple percentages, mean scores, and standard deviation. The study revealed that the primary reasons women joined VSLAs were to save money, develop saving discipline, gain access to savings and loans, and enjoy social networking with friends and community members. While the study is commendable for staying within its scope and providing valuable insights into the impact of VSLAs on women's socioeconomic empowerment in Rubaya Sub-County, it could benefit from broader regional comparisons. Conducting similar studies in other regions of Uganda and extending the research to other African countries, such as Nigeria, would help establish a more robust foundation for future studies.

Nalubowa (2019) investigated the impact of community savings groups on women's welfare in Uganda. The study employed a census survey design targeting 150 women participants from community savings groups in Kiganda village. A random sample of 99 respondents was selected for the study. Data were collected using questionnaires and interviews and analysed through simple percentages and linear regression. The findings revealed that participation in community savings groups significantly improved the welfare of the

women involved. The study provides valuable insights, its focus on a single region in Uganda limits the generalizability of the findings. Expanding similar research to other regions in Uganda and across different African countries would be beneficial. Such studies could contribute to a broader understanding of how community savings groups impact women's welfare in diverse socio-economic contexts.

The Cooperative Theory

The Cooperative Theory, largely associated with the works of scholars such as Robert Owen (1771-1858) and Charles Fourier (1822-1896), emphasizes the role of cooperative organizations in promoting collective welfare and socio-economic development. These early proponents advocated for cooperative models as means to address economic inequalities and empower individuals through collective ownership and decision-making. The Cooperative theory is built on several key assumptions: (1) individuals working together in a cooperative framework will achieve greater economic efficiency and social benefits than operating independently, (2) cooperatives are driven by the principle of mutual aid and collective benefit rather than profit maximization, and (3) active member participation and equitable sharing of resources and decision-making are fundamental to the success of cooperatives (Fourier, 1896; Owen, 1817).

Scholars such as Ostrom (1990) and Clark (1998) have extensively applied Cooperative theory to studies on resource management and economic development. Ostrom's work on collective resource management and Clark's research on the role of cooperatives in regional development both underscore the relevance of cooperative principles in fostering economic and social progress.

Nilsson (2001) emphasized that the cooperative Theory has limitations. One

major critique is that it may overlook the challenges of internal conflicts and management issues within cooperatives. Additionally, the theory may not fully account for the diverse financial empowerment contexts in which cooperatives operate, potentially leading to a generalized application of its principles that may not address specific local needs or constraints.

However, the strength of Cooperative theory lies in its ability to highlight the positive impacts of cooperative structures on member welfare and community development (Ribas et al., 2022). Its relevance to the current study is evident in how it frames cooperative membership, access to credit, savings, extension services, and government support as integral components of financial empowerment. By applying this theory, the study can better analyse how these proxies contribute to the effectiveness and impact of agro-based cooperatives, ultimately providing insights into how these organizations can be optimized to support rural development and empowerment.

Adopting Cooperative Theory for this study is essential because it provides a comprehensive framework for understanding how agro-based cooperatives can enhance financial empowerment through key proxies such as access to credit, cooperative savings. The theory's emphasis on mutual aid, collective action, and equitable resource sharing aligns with the study's focus on how these elements contribute to improving the economic and social well-being of rural dwellers. Through applying Cooperative Theory, the study can effectively analyse the synergistic effects of these proxies within the cooperative model, offering valuable insights into how these organizations can be optimized to support rural development and empowerment.

This theoretical framework situates the study within a broader context of

cooperative principles and their application to real-world scenarios, offering valuable insights into the dynamics of agro-based cooperatives and their role in enhancing rural financial conditions.

Based on these theoretical propositions and empirical insights, the study hypothesizes that agro-based cooperatives influence the financial empowerment of rural dwellers through access to credit and cooperative savings. To empirically test these relationships, the following null hypotheses are formulated:

H01: Agro-based cooperatives do not contribute significantly to access to credit facilities of rural dwellers in Nasarawa State.

H02: Cooperative savings of agro-based cooperatives do not have a significant effect on the income level of rural dwellers in Nasarawa State.

3. Methodology

This study employed a survey research design, selected for its ability to efficiently gather data from a broad range of participants with diverse perspectives. This approach is particularly effective in capturing a comprehensive and varied set of viewpoints, which is crucial for understanding the wide-ranging impacts of agro-based cooperatives on financial empowerment.

Population, Sample and Sampling Technique

The target population for this study includes all members of agro-based cooperatives spread across the rural areas of Nasarawa State. Specifically, the study focused on members from nine agro-based cooperatives located in the three senatorial zones of Nasarawa State. These cooperatives are: Rice Farmers Association of Nigeria, Karu Branch, All Farmers Association of Nigeria (AFAN), Keffi Branch, Nasara Agricultural Cooperative Society, Nasarawa LGA, Dacewa MPCs Shabu, Lafia, United

Farmers Association Kadarko Ufak, Keana LGA, Ehowoza Cassava Growers Cooperative Society, Doma LGA, Nigeria Farmers' Group and Cooperative Society, Akwanga Branch, Nasarawa State Farmers Association, Wamba Branch, and Maize Growers and Processors Association of Nigeria, Nasarawa Eggon Branch.

These cooperatives have a total of 11,901 registered members, with individual memberships of 2,028, 1,261, 1,641, 1,027, 732, 941, 1,264, 821, and 2,213, respectively. The data is based on the 2023 report from the Ministry of Commerce, Industries, and Cooperative, Lafia, Nasarawa State.

To determine the study sample, the Taro Yamane Formulae was employed as follow:

$$n = \frac{N}{1 + N(e)^2}$$

Where:

N = Total Population

n = sample size

e = margin error (0.05: allowable error)

$$\begin{aligned} n &= \frac{11,901}{1 + 11,901 (0.05)^2} \\ n &= \frac{11,901}{1 + 11,901 (0.0025)} \\ n &= \frac{11,901}{1 + 29.7525} \\ n &= \frac{11,901}{30.7525} \\ n &= 387 \end{aligned}$$

The calculated sample size is 387. However, to account for potential non-responses and non-returns, an approach inspired by Israel (2013) was adopted. Specifically, the sample size was increased by 30% to ensure the study's statistical robustness.

The process for increasing the sample size is as follows:

$$\begin{aligned} &= 387 + (387 \times 0.3) \\ &= 387 + (116) \\ &= 503 \end{aligned}$$

The final sample size for the study is 503 respondents. A multi-stage sampling technique was employed to select the participants. In the first stage, Nasarawa State was divided into three senatorial districts: Nasarawa West, Nasarawa North, and Nasarawa South. In the second stage, three local government areas were selected from each senatorial district: Karu, Keffi, and Nasarawa for Nasarawa West; Akwanga, Nassarawa Eggon, and Wamba

for Nasarawa North; and Doma, Keana, and Lafia for Nasarawa South.

The third stage involved selecting registered members of agro-based cooperatives from the chosen local government areas. It is important to note that a stratified sampling technique was used to ensure that respondents are appropriately selected from various agro-based cooperatives across different local government areas.

Table 1: Proportional Allocation for selected Area

S/N	Selected Area	Population	Sample
1.	Rice Farmers Association of Nigeria Karu Branch	2028	$2,028/11,901 \times 503 = 86$
2.	All Farmers Association of Nigeria (AFAN) – Keffi LGA	1261	$1,261/11,901 \times 503 = 53$
3.	Nasara Agricultural Cooperative Society – Nasarawa LGA	1614	$1,614/11,901 \times 503 = 69$
4.	Nigeria Farmers' Group and Cooperative Society, Akwanga LGA	1027	$1,027/11,901 \times 503 = 43$
5.	Nasarawa State Farmers Association Wamba Branch LGA	732	$732/11,901 \times 503 = 31$
6.	Maize growers and Processors Association of Nigeria Nassarawa Eggon LGA.	941	$941/11,901 \times 503 = 40$
7.	Dacewa MPCS Shabu – Lafia	1264	$1264/11,901 \times 503 = 53$
8.	The United Farmers Association Kadarko Ufak - Keana LGA	821	$821/11,901 \times 503 = 35$
9.	Ehowoza Cassava Growers Cooperative Society Doma LGA	2213	$2,213/11,901 \times 503 = 93$
Total		11,901	503

Source: Researcher's computation, 2025

This study relied on questionnaire for primary data collection from the field through a survey questionnaire. The questionnaire was tailored to fit the specific context and were administered directly to respondents.

The data collection was conducted through a cross-sectional survey, with the help of research assistants 503 copies of the questionnaire were distributed to registered members of the nine selected agro-based cooperatives across Nasarawa State. The distribution was carried out using snowball sampling, where one respondent help

identify subsequent respondents. Additionally, the number of questionnaires distributed to members of each cooperative was determined based on a proportionate sample calculation, as outlined in Table 3.1.

This study employed simple percentages and frequency distribution tables to present and analyse data related to the demographic information of the respondents. Simple regression analysis was employed for inferential statistics, which aid in testing the study's stated hypotheses. The following model equation was used:

$$AC = \beta_0 + \beta_1 AG + \epsilon$$

$$IN = \beta_0 + \beta_2 CS + \epsilon$$

Where:

AC = Access to credit facilities

CS = Cooperative's savings

AG = Agro-based cooperatives

IN = Income level

β_0 = Intercept (constant term)

β_1 = Coefficient

ϵ = Error term

Before the analysis was carried out, a total of five hundred and three (503) copies of questionnaires were distributed to the respondents, and a total of four hundred and eighty-one (481) copies were successfully retrieved from the respondents. However, four hundred and thirty-five (435) copies of the questionnaires were found usable after questionnaire sorting and data cleaning (see table 2).

4. Results and Discussion

Table 2: Response Rate

Category	Frequency
Questionnaires Distributed	503
Questionnaires Retrieved	481
Usable Questionnaires	435

Source: Field Survey, 2025

The successful retrieval and usability of a significant portion of the questionnaires indicate that future research efforts could also benefit from similar methodologies. It highlights the importance of effective

questionnaire design and clear instructions to maximise response rates and data quality. Rafer to appendix II for data collected and computed for analysis.

Table 3: Regression Results for Agro-based Cooperatives and Access to Credit Facilities

Statistics	Values
Dependent Variable	Access to Credit Facilities
Independent Variable	Agro-based Cooperatives
R	0.602
R²	0.363
Adjusted R²	0.361
Std. Error of Estimate	0.605
F-statistic	246.217
Sig. (F)	0.000
Unstandardized Coefficient (B)	0.595
Standardized Coefficient (Beta)	0.602
t-value	15.691
Sig. (t)	0.000

Source: SPSS Output, 2025

Table 3 presents the regression results examining the relationship between agro-based cooperatives and access to credit facilities among rural dwellers in Nasarawa State. The correlation coefficient ($R = 0.602$) indicates a

moderate positive relationship between agro-based cooperatives and access to credit. The coefficient of determination ($R^2 = 0.363$) shows that approximately 36.3% of the variation in access to credit facilities

is explained by participation in agro-based cooperatives.

The ANOVA result confirms that the model is statistically significant ($F = 246.217$, $p < 0.05$), indicating that the observed relationship is not due to chance. The regression coefficient ($B = 0.595$) implies that an increase in participation in agro-based cooperatives leads to a corresponding increase in access to credit facilities. The standardized beta value (0.602) further demonstrates the strength of this relationship. Given the statistically significant t-value ($t = 15.691$, $p < 0.05$), the null hypothesis (H_{01}) is rejected. This finding confirms that agro-based cooperatives significantly enhance access to credit facilities for rural dwellers in Nasarawa State.

Table 4: Regression Results for Cooperative Savings and Income Level

Statistics	Values
Dependent Variable	Income Level
Independent Variable	Cooperative Savings
R	0.633
R²	0.400
Adjusted R²	0.399
Std. Error of Estimate	0.594
F-statistic	289.198
Sig. (F)	0.000
Unstandardized Coefficient (B)	0.630
Standardized Coefficient (Beta)	0.633
t-value	17.006
Sig. (t)	0.000

Source: SPSS Output, 2025

Table 4 presents the regression results assessing the effect of cooperative savings on the income level of rural dwellers in Nasarawa State. The correlation coefficient ($R = 0.633$) indicates a moderate positive relationship between cooperative savings and income level. The

R^2 value of 0.400 suggests that 40% of the variation in income levels is explained by cooperative savings.

The model is statistically significant, as shown by the F-statistic ($F = 289.198$, $p < 0.05$), confirming the explanatory power of cooperative savings. The unstandardized coefficient ($B = 0.630$) indicates that increases in cooperative savings lead to corresponding increases in income levels. The standardized beta (0.633) highlights cooperative savings as a strong predictor of income. Given the statistically significant t-value ($t = 17.006$, $p < 0.05$), the null hypothesis (H_{02}) is rejected. This result demonstrates that cooperative savings have a significant positive effect on the income level of rural dwellers in Nasarawa State.

Discussion of Findings

Base on the study finding, it was discovered that agro-based cooperatives significantly enhance access to credit facilities, contributing to the economic empowerment of rural dwellers in Nasarawa State. These cooperatives provide a structured platform through which farmers and other rural entrepreneurs can secure loans and financial assistance, thus mitigating the challenges of capital constraints (Afolabi, 2019). Access to credit enables rural residents to invest in agricultural inputs, mechanization, and other productivity-enhancing practices, ultimately improving their livelihoods (Ajah & Nmadu, 2020).

Furthermore, cooperative savings play a significant role in boosting the income levels of rural dwellers. The pooled resources within cooperatives serve as a financial safety net, allowing members to access funds for business expansion and emergency needs (Olawuyi & Rahji, 2019). Studies have shown that participation in agro-based savings schemes leads to higher income levels by providing the necessary financial backing for improved productivity and market engagement (Ebi et al., 2021).

Additionally, cooperative savings reduce dependence on informal credit sources, which often have exploitative interest rates, thereby fostering sustainable economic growth among rural populations (Oluwatayo & Ojo, 2018). Agro-based cooperatives serve as a catalyst for rural economic transformation by improving financial inclusion and promoting income-generating activities. Strengthening these institutions through policy support and financial literacy programs can further enhance their impact on rural development (Okereke & Onu, 2022).

5. Summary and Conclusion

Summary

This study assessed the contributions of agro-based cooperatives to the financial empowerment of rural dwellers in Nasarawa State through a survey research design. A total of 503 questionnaires were distributed among members from nine agro-based cooperatives across three senatorial zones. The findings indicated that agro-based cooperatives significantly enhance access to credit facilities and positively affect the income levels of rural dwellers. Specifically, regression analyses demonstrated that participation in agro-based cooperatives is positively correlated with both credit access and income improvement, highlighting their vital role in economic empowerment.

Conclusion

In conclusion, the results of this study support that agro-based cooperatives play a crucial role in the financial empowerment of rural dwellers in Nasarawa State. through providing access to credit facilities and enhancing income levels, these cooperatives contribute significantly to the economic wellbeing of their members. The statistical significance of the relationships identified suggests that policies promoting the growth and support of agro-based cooperatives could have substantial benefits for rural communities.

Recommendations

Policy Support: Governments and relevant authorities should develop policies that promote the establishment and sustainability of agro-based cooperatives, including financial incentives and training programs to enhance their operational capacities.

Access to Financial Resources: Financial institutions should create tailored financial products for agro-based cooperatives to facilitate easier access to credit and improve their financial resilience.

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