UNIZIK Journal of Agricultural Economics and Extension (UJAEE) Vol. 2 No. 2 (2025): 218-223
A Journal of the Department of Agricultural Economics and Extension, Nnamdi Azikiwe University, Nigeria
ISSN: 3043-6540 (Print) and 3043-6559 (Electronic) / Available at: https://journals.unizik.edu.ng/ujaee

Influence of Business Environmental Factors on Credit Repayment among Agricultural Cooperative Members in Nasarawa State, Nigeria

Onugu, C. U.[1], Obasanya, S. O.*[2] and Nwosu, C. N.[3]

[1]*Department of Agricultural Economics and Extension. Faculty of Agriculture, Nnamdi Azikiwe University, Awka, Anambra State, Nigeria*
[2]*Department of Cooperative and Rural Development, Faculty of Management Sciences, Osun State University, Osogbo, Nigeria*
[3]*Federal Polytechnic Nasarawa, Nasarawa State, Nigeria.*
DOI: *https://www.doi.org/10.5281/zenodo.18076491*

KEYWORDS:
Agricultural cooperatives, Business environmental factors, Credit repayment, Nasarawa State

***CORRESPONDING AUTHOR:**
sheriffobasanya@gmail.com

ABSTRACT

Poor credit repayment rates often jeopardise the long-term viability of agricultural cooperatives, which are essential for providing credit in rural areas of Nigeria. Recent studies have theorised that business environmental factors could be responsible for the poor repayment rates. Against this backdrop, this study examined the effect of environmental factors of business on agricultural cooperative members' credit repayment rate in Nasarawa State, Nigeria. Using a descriptive survey design, data were obtained from a sample of 214 cooperative members and analysed using descriptive statistics and a multiple regression model. On the loan default rate, the results revealed that 50% of members paid back less than 20% of their loans, and 83.6% paid back 40% or less when they were due. Adverse business environment ($\beta = 0.646$; $p = 0.032$), natural disasters ($\beta = 7.207$; $p = 0.004$) and political and conflict circumstances ($\beta = 2.498$; $p = 0.043$) were significant predictors of repayment rate. The study recommends affordable insurance for agricultural cooperatives to mitigate consequences of natural disasters.

INTRODUCTION

In developing economies, particularly within the agrarian landscapes of sub-Saharan Africa, agricultural cooperatives function as a critical institution for rural development. Smallholder farmers, often excluded from formal banking systems, receive essential financial services, particularly credit, from these cooperatives. By pulling resources and leveraging economies of scale, these cooperatives help members to overcome capital constraints and invest in modern inputs such as improved seeds, fertilizers and mechanization.(Khan et al., 2024). Having access to credit is a critical catalyst for enhancing farm productivity, commercialising subsistence agriculture, improving rural incomes, and strengthening national food security.

Despite the foregoing importance of agricultural cooperatives, their operational sustainability is critically dependent on a healthy loan repayment rate (Onugu et al., 2025). The financial model of most cooperatives is based on a revolving loan fund, where capital from repaid loans is recycled to fund new loans for other members (Boland & Barton, 2013). This cycle is broken by high rates of credit default, which causes the cooperative to lose money over time (AL-Sharafat et al., 2013). Poor repayment performance diminishes the agricultural cooperatives' profitability, increases the administrative burden of loan recovery, and damages their credibility with members and financiers, thereby restricting their access to wholesale capital (AL-Sharafat et al., 2013). Consequently, understanding and addressing the determinants of loan repayment is a matter of institutional survival for these vital rural organisations, particularly for Nasarawa State, a predominantly agrarian state in Nigeria's north-central zone where agriculture serves as the primary means of livelihood for the majority of the population (Elisha et al., 2025).

Many studies have explored factors influencing loan default in cooperatives in Nigeria at large (Agada et al., 2018; Akerele & Obasanya, 2019; Otache et al., 2023) and in Nasarawa State in particular (Onugu, Obasanya, & Nwosu, 2024; Onugu, Obasanya, & Umeh, 2025), but studies that have explored environmental determinants of cooperative loan default in Nasarawa State are, at best, scarce. This study aims to address the gap in empirical knowledge by examining the business environmental factors that influence credit repayment among members of agricultural cooperatives in Nasarawa State, Nigeria. Specifically, the study examined the cooperative loan repayment performance and the business environmental factors influencing loan repayment among the cooperative members in the study area. The study is important at this time, given the renewed vigour of the federal and state governments to promote commercial farming in the state (Anyanwu, 2025).

The study utilised both institutional and general systems theories to provide a complementary theoretical framework for understanding how business environment factors affect organizational behavior and loan repayment. Institutional theory asserts that organisations must conform to external rules, norms, and expectations to gain legitimacy, which is vital for resource acquisition and survival (Diogo, Carvalho, & Amaral, 2015; Kauppi, 2022). It identifies three main pressures—coercive, mimetic, and normative—that drive organizational conformity (Kauppi, 2022). In agricultural cooperatives, failure to adapt to environmental expectations can result in a loss of legitimacy and diminished member commitment, affecting repayment discipline (Diogo et al., 2015).

General systems theory, on the other hand, views organizations as open systems that continuously interact with their environment by processing inputs and producing outputs (Kantabutra & Ketprapakorn, 2021). For agricultural cooperatives, this model explains how environmental factors, such as weather and market prices, impact members' businesses and loan repayment.

By integrating these two theories, the study adopts an institutional-systems perspective: external shocks are seen as disruptive inputs that can impair the agricultural cooperative functioning and loan performance. Such disruptions increase institutional pressure, and if the cooperative cannot adapt or protect its members, it risks losing legitimacy.

Empirically, studies on group lending and credit cooperatives have consistently highlighted mixed findings, with failures often attributed to external factors that undermine the viability of the agricultural enterprises they finance (Alessandria & Choi, 2021). There is empirical evidence that links environmental shocks, particularly adverse weather events, to increased credit risks within the microfinance sector. Studies have demonstrated that fluctuations in rainfall patterns, such as droughts or excessive precipitation, significantly elevate the portfolio-at-risk (PAR) for agricultural microfinance institutions (MFIs) (Abrego-Perez & Guizar, 2018; Pelka, Musshoff, & Weber, 2015). Likewise, research in Asia indicates that households situated in flood- and drought-prone regions experience greater financial distress, impairing their capacity to repay debts (Adjognon, Liverpool-Tasie, & Reardon, 2020). When several borrowers default simultaneously, these environmental shocks generate correlated risks that threaten the sustainability of lenders (Koetter, Noth, & Rehbein, 2020; Nie, Regelink, & Wang, 2023), including cooperatives.

METHODOLOGY

Using a descriptive survey design, this study examined the environmental factors of business that influence credit repayment among members of agricultural cooperatives in Nasarawa State, Nigeria. The target population comprised 460 members drawn from the 13 registered agricultural cooperatives in the state. To ensure that the results were representative, a sample of 214 members was derived through the Taro Yamane formula.,

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

Where, n = sample size, N = total population size = 460 and e= error term = 5%.

A structured questionnaire was used for data collection. Cronbach's alpha reliability test of the questionnaire shows test score of 0.79 which is acceptable for a new questionnaire(Taber, 2018) . The data obtained were analysed using both descriptive and multiple regression models. The descriptive statistics used include means, percentages and frequencies. The multiple regression model is specified:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \cdots \beta_n X_n + \varepsilon$$

Where,

Y = Credit repayment performance, ε is the error term, β is a coefficient, and X_1 to X_n are the business environmental factors. The model's significance was evaluated at $p<0.05$.

RESULTS AND DISCUSSION

The results, presented in Table 1, reveal that the majority (74.8%) of the respondents got loans ranging between ₦100,000 and ₦500,000. A smaller percentage (16.4%) got loans ranging between ₦501,000 and ₦700,000. As evident in the table, it became less common to get higher loans given that only 8.8% of the respondents got loans higher than ₦700,000. The analysis of the repayment performance reveal that as many as 50% of the cooperative members reported less than 20% repayment rate (as of when it was due). About 33.6% of the respondents reported repayment ranging between 21% and 40% as at when due. Only a minimal fraction of the respondents (2.8%) achieved a high repayment rate of 81-100% as at when due. These results reveal a loan default crisis in the agricultural cooperatives.

Table 1: Distribution of Credit Obtained and Repayment Rates

Variable	Category	Frequency	Percentage (%)
Credit Obtained	₦100,000 - ₦500,000	160	74.8
	₦501,000 - ₦700,000	35	16.4
	₦701,000 - ₦1,000,000	8	3.7
	₦1,000,001 - ₦3,000,000	9	4.2
	₦3,000,001 - ₦5,000,000	2	0.9
Credit Repayment Rate	< 20%	107	50.0
	21% - 40%	72	33.6
	41% - 60%	19	8.9
	61% - 80%	10	4.7
	81% - 100%	6	2.8

Source: Field Survey, 2020

The Impact of Business Environmental Factors on Credit Repayment

A multiple regression analysis was performed to evaluate the impact of diverse business environmental factors on the loan repayment performance. Table 2 shows the results of this analysis. With a coefficient of determination (R^2) of 0.573, the regression model was statistically significant ($p<0.001$) implying that the model explains 57.3% of the total variance in credit repayment by the cooperative members. This indicates significant explanatory power, implying that the business environmental factors are significant determinants of repayment outcomes.

When looking at the individual predictors, three business environment factors were found to be statistically significant at the 5% level. Natural disasters, with a coefficient of 7.207 and a p-value of

0.004, were the most significant predictors of the repayment rate. Type of business environment (coefficient = 3.646, p-value = 0.032) which includes market access, price stability, and the presence of extortion was also found to be a significant predictor of repayment performance. The political and conflict situation also significantly determine repayment performance (coefficient = 2.498, p-value = 0.043), which implies that instability and conflict make it harder to farm and pay back loans.

Table 2: Multiple Regression Analysis of the Influence of Business Environmental Factors on Credit Repayment

Business Environmental Factor	Coefficient (β)	F-ratio	p-value
Economic Situation	2.430	0.874	0.456
Political & Conflict Situation	2.498	0.899	0.043*
Inflationary Situation	3.042	1.094	0.353
Nature of Business Environment	3.646	1.311	0.032*
Labour Cost	1.056	0.380	0.768
Input Cost	1.421	0.511	0.675
Natural Disasters	7.207	2.592	0.004*
Cost of Funds	6.121	2.202	0.089

*Source: Field Survey, 2020, Notes: R2=0.573; Model p-value < 0.001; * significant at p<0.05. Dependent variable is Credit Repayment.*

The foregoing study results reveal a severe loan default crisis, with 50% of borrowers repaying less than 20% at maturity. This poor repayment rate had tendency to break the cooperative's revolving loan fund (Boland & Barton, 2013), generating a credit crunch that can limit the institution's capability to provide timely financing to their members (Koffi, Djeundje, & Pamen, 2024; Paudel, 2015) threatens the institution's long-term sustainability and legitimacy (AL-Sharafat et al., 2013).

The regression model results show that business external environmental factors are the primary cause of default. These include natural disasters, adverse business environment, and the political/conflict situation. This is not surprising given that this period was characterised by lockdowns arising from the COVID-19 pandemic. The COVID-19 lockdowns offer a compelling example of correlated risk. The lockdowns triggered system-wide failures like market closures and crop decay, resulting in a significant shock that impaired income for all members. This implies that when environmental pressures are overwhelming and unmitigated, they lead directly to widespread, systemic default.

The study findings align with the literature globally, reinforcing evidence that agricultural microfinance is highly susceptible to correlated risks (Koetter, Noth, & Rehbein, 2020; Nie, Regelink, & Wang, 2023). Systemic shocks such as adverse weather (Abrego-Perez & Guizar, 2018; Pelka, Musshoff, & Weber, 2015) and political instability can cause simultaneous defaults that undermine the group-based lending model (Adjognon, Liverpool-Tasie, & Reardon, 2020; Roger, 2025). The study findings suggest that the default crisis is a direct consequence of these systemic, highly correlated shocks in the external business environment.

CONCLUSION AND RECOMMENDATIONS

Firstly, during the period under study, the loan repayment rates in the agricultural cooperatives were at a crisis level, with 50% of members repaying less than 20% of their loans. Secondly, this poor performance was not random but was significantly driven by a set of external business environmental factors, including natural disasters, adverse business environments, and political and conflict situations. The study recommends affordable insurance for agricultural cooperatives to mitigate consequences of natural disasters like the COVID-19 pandemic. Provision of grants to critical grassroots economic institutions like agricultural cooperatives may also be considered to help them recover in economic crisis periods.

REFERENCES

Abrego-Perez, A. L., & Guizar, I. (2018). Resilience of agricultural microfinance institutions to rainfall shocks. *Savings and Development*, *42*, 1–23.

Adjognon, S. G., Liverpool-Tasie, L. S. O., & Reardon, T. (2020). Agricultural input credit in Sub-Saharan Africa: Telling myth from facts. *Food Policy*, *101*, 102095. https://doi.org/10.1016/j.foodpol.2020.102095

Agada, S., Iheanacho, A., Ogbanje, E., & others. (2018). Causes and measures for controlling loan default among Agricultural Cooperatives in Bune State, Nigeria. *International Journal of Environment, Agriculture and Biotechnology*, *3*(5), 1668–1672.

Akerele, E. O., & Obasanya, S. O. (2019). Factors influencing default among participants in Rotating Savings and Credit Association (ROSCA) in Yewa Division of Ogun State, Nigeria. *Journal of Sustainable Technology*, *10*(1), 94–103.

AL-Sharafat, A., Qtaishat, T., & Majdalawi, M. I. (2013). Loan Repayment Performance of Public Agricultural Credit Agencies: Evidence from Jordan. *Journal of Agricultural Science*, *5*(6), 221–229. https://doi.org/10.5539/jas.v5n6p221

Anyanwu, S. (2025, August). FG to partner Nasarawa State to boost agriculture. In *Federal Ministry of Information and National Orientation*. Federal Ministry of Information and National Orientatio. https://fmino.gov.ng/fg-to-partner-nasarawa-state-to-boost-agriculture/

Boland, M. A., & Barton, D. G. (2013). Overview of Research on Cooperative Finance. *Journal of Cooperatives*, *27*, 1–14. https://doi.org/10.22004/AG.ECON.164712

Diogo, S., Carvalho, T., & Amaral, A. (2015). Institutionalism and organizational change. In *The Palgrave international handbook of higher education policy and governance* (pp. 114–131). Springer.

Elisha, I., Magaji, J. I., & Ekpo, A. S. (2025). Modern Agricultural Practices in Karu Local Government Area, Nasarawa State, Nigeria. *International Journal of African Research Sustainability Studies*, *8*(2), 244–250. https://doi.org/10.70382/caijarss.v8i2.031

Kantabutra, S., & Ketprapakorn, N. (2021). Toward an organizational theory of resilience: An interim struggle. *Sustainability*, *13*(23), 1–28.

Khan, F. U., Nouman, M., Negrut, L., Abban, J., Cismas, L. M., & Siddiqi, M. F. (2024). Constraints to agricultural finance in underdeveloped and developing countries: A systematic literature review. *International Journal of Agricultural Sustainability*, *22*(1), 1–24.

Koetter, M., Noth, F., & Rehbein, O. (2020). Borrowers under water! Rare disasters, regional banks, and recovery lending. *Journal of Financial Intermediation*, *43*, 100811. https://doi.org/10.1016/j.jfi.2019.01.003

Koffi, C. H. A., Djeundje, V. B., & Pamen, O. M. (2024). *Quantifying socio-temporal effects of loan delinquency drivers in microfinance* (Version 2). arXiv. https://doi.org/10.48550/ARXIV.2410.13100

Nie, O., Regelink, M., & Wang, D. (2023, April). *Banking sector risks in the aftermath of climate change and environmental-related disasters*. World Bank Blogs. https://blogs.worldbank.org/en/developmenttalk/banking-sector-risks-aftermath-climate-change-and-environmental-related-disasters

Onugu, C., Obasanya, S., & Nwosu, C. (2024). Organizational Factors of Agricultural Cooperative Societies and their Influence on Credit Repayment of Members in Nasarawa State, Nigeria. *UNIZIK Journal of Agricultural Economics and Extension*, *1*(2), 432–443.

Onugu, C. U., Obasanya, S. O., & Umeh, O. J. (2025). Influence of Socioeconomic Characteristics on Credit Repayment of Members of Agricultural Cooperative Societies in Nasarawa State, Nigeria. *International Journal of Agriculture, Environment and Bioresearch*, *10*(02), 129–145. https://doi.org/10.35410/IJAEB.2025.5973

Otache, I., Echukwu, I. J., Umar, K., Yunusa, A., & Audu, S. (2023). Internal factors affecting the performance of employee-based savings and credit cooperatives: Evidence from Nigeria. *Journal of Enterprising Communities: People and Places in the Global Economy*, *17*(6), 1154–1170.

Paudel, G. P. (2015). Factor Influence for Credit Risk at Saving and Credit Cooperative Societies. *A Bi–Annual South Asian Journal of Research and Innovation*, *5*(1).

Pelka, N., Musshoff, O., & Weber, R. (2015). Does weather matter? How rainfall shocks affect credit risk in agricultural microfinance. *Agricultural Finance Review*, *75*(2), 194–212. https://doi.org/10.1108/AFR-12-2014-0035

Roger, P. (2025, February). *How rural cooperative banks in Cameroon are organised*. Welthungerhilfe.De. https://www.welthungerhilfe.org/global-food-journal/rubrics/development-policy-agenda-2030/rural-cooperative-banks-in-cameroon-are-flourishing

Taber, K. S. (2018). The Use of Cronbach's Alpha When Developing and Reporting Research Instruments in Science Education. *Research in Science Education*, *48*(6), 1273–1296. https://doi.org/10.1007/s11165-016-9602-2