Determinant of Loan Repayment Performance among Smallholder Vegetable Farmer Cooperators in Anambra State, Nigeria

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ABSTRACT

The paper examined the determinants of loan repayment performance among smallholder vegetable farmer cooperators in Anambra State, Nigeria. A total of 320 respondents were selected using a multi-stage sampling technique from two agricultural zones and eight local government areas of the State. Data collected through structured questionnaires were analyzed using descriptive statistics, loan repayment index, and multiple regression analysis. It was revealed that majority (81.6%) were female, average age of the cooperators were 42 years and mainly 60.00% were married. The results revealed that (68.4%) of the farmers were within the range of a moderate repayment performance, between 50% - 90%, while 31.9% of the co-operators achieved a repayment rate of 50-70%. The loan mean amount repaid were ₦399,025.16. The significant factors which determine the repayment of loan were level of education (coeff = 0.065; p = 0.001), farming experience (coeff = 0.015; p = 0.013), income level of the household head (coeff = 0.098; p = 0.001), loan amount received (coeff = -0.045; p = 0.013), and interest rate (coeff = -0.070; p = 0.002). Major constraints identified included high cost of farm inputs (mean = 4.12), unfavourable weather conditions (mean = 3.90), and unstable market prices (mean = 3.75). The study recommended that by improving these and other binding constraints and enhancing the institutional support mechanisms, loan repayment performance among farmers would be improved.

Keywords: Loan repayment performance, Smallholder farmers, Vegetable farming, Co-operators, Socioeconomic factors, Institutional factors

INTRODUCTION

Access to credit stands out as a vital element that will improve agricultural productivity among the small-scale farmers who most times cannot muster financial capacity for expansion (Kuye & Edem, 2019). Agricultural finances give farmers access to capital needed to buy input such as improved seeds, fertilizers, irrigation facilities, and modern farming equipment to improve their productive capacity toward attaining food security (Fadeyi, 2018). The main reason why farmers in developing economy are very poor is because of lack of access to credit, since they tend to struggle with the vicious cycle of poverty and limitations (Okonkwo-Emegha, Achoja & Anarah, 2018). Cooperative societies provides soft credit to farmers and enhance the development of Nigerian economy. Credit could be access through the formal institutions such as government financial institutions, commercial banks and so, while the informal sources are the age grade, money lenders, cooperative societies and non-government organizations (NGOs). Smallholder farmers prefer obtaining loans from informal sources for easy access and repayment rather than wasting time in formal source due to administrative delay and problem of collateral. Besides cooperative societies have been identified to be a better channel of credit delivery to farmers in terms of its ability to sustain the loan delivery function (Kehinde & Bamire, 2023). However, one of the daunting tasks that have continuously confronted most agricultural credit schemes is loan repayment problems. The factors affecting loan repayment performance include socioeconomic characteristics of farmers, institutional factors, and farm-related variables (Kehinde & Bamire, 2023). Lending is a risky activity because repayment of loans can be affected with unfore seen uncertainties in agriculture. Generally, in spite of the importance of loan in agricultural production, its acquisition and repayment are fraught with a number of problems especially in the small holder farming (Awoke, 2004). It is reported in empirical studies (Nwachukwu et al., 2010; Ugbomeh et al., 2008) that large rate of default has

been a perennial problem in most agricultural credit schemes organized or supported by governments, institutions and cooperatives. Most of the defaults arose from poor management procedures, loan diversion and unwillingness by farmers to repay loans. Thus, in Southeast Nigeria, security challenges have disruptions of small business loans, supply chains and essential services to business operations (Emegha, 2023). Therefore, within Nigeria, altercations are most times allowed to degenerate into communal clashes which have negative effects on farming and loan repayment (Emegha, 2019).

Smallholder vegetable farming is one of the important sub-sectors within the entire setting of Nigeria's agriculture; it contributes to food supply, employment generation, and poverty alleviation (Balana & Oyeyemi, 2022). Vegetable farming is very important in Anambra State due to the favorable agro-climatic conditions that support the production of vegetables like tomatoes, fluted pumpkin, okra, and pepper throughout the year (Onyeneke et al., 2018). Despite the economic potential of vegetable farming, farmers often face financial constraints that limit their productivity. Hence, most smallholder vegetable farmers depend on cooperative societies for credit facilities since other formal financial institutions such as commercial banks have tight conditions in lending and might be unapt for small-scale agricultural enterprise businesses (Okonkwo et al., 2022). Nigeria has huge natural agriculture potentials yet it has remained a consuming rather than a productive economy (Emegha, 2022).
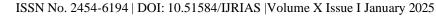
Agricultural cooperatives ensure the availing of financial services to the farmers more easily compared to the conventional financial institutions (Okunlola & Ayetigbo, 2024). Cooperatives help farmers pool resources, improve their bargaining power, and facilitate the adoption of improved farming technologies. However, the sustainability of credit schemes within cooperatives depends largely on the repayment behavior of members. Mgbebu & Achike (2017) note that default in loan repayment can lead to financial instability within cooperatives, hence limiting their ability to offer subsequent credit to members. Solomon, Juliana & Antonia (2016). It is, therefore, important to understand the determinants of loan repayment performance in developing policies that can make financial inclusion compatible with credit sustainability among vegetable smallholder farmers (Okonkwo-Emegha, Umebali, & Isibor, 2019).

A number of existing studies have examined those factors that act to influence smallholder farmers' behavior in loan repayments. According to Kehinde and Bamire (2023), socioeconomic characteristics are considered important-income levels, education, household size, farming experience-influencing loan repayment performance. Similarly, Samson and Obademi (2018), established that institutional variables such as interest rate, repayment schedule, and supervision of loans are some of the important factors that largely determine loan performance. Jimoh (2023) reiterated that factors related to access to extension services and productivity levels of a farm are some of the factors affecting the loan repayment performance of farmers.

Notwithstanding these contributions, little, if any comprehensive studies have been focused on the perspective of smallholder vegetable farmer co-operators in Anambra State, Nigeria. Existing studies have predominantly examined loan repayment issues in broader agricultural contexts without isolating the unique challenges faced by vegetable farmers who rely on cooperative financing (Fadeyi, 2018; Balana & Oyeyemi, 2022). Vegetable farming is characterized by short production cycles, price volatility, and high post-harvest losses, which may create additional repayment challenges not adequately addressed in the literature (Muhammad et al., 2021). Moreover, although various analyses have been conducted focusing on individual and institutional determinants of loan repayment, few have investigated the interaction among these factors under cooperative financing arrangements, for instance (Balana & Oyeyemi, 2022). The study attempts to fill these gaps by ascertaining the determinants of loan repayment performance among smallholder vegetable farmer cooperators in Anambra State. The findings, therefore, shall be useful to policy, cooperative societies, and financial institutions through the identification of socioeconomic, institutional, and environmental factors that influence the performance of loan repayment.

Objectives of the Study

The main objective of the study is to examine the determinant of loan repayment performance among small holder vegetable farmer cooperators in Anambra State, Nigeria. The specific objectives of the study are to:

i.   describe the socioeconomic characteristics of vegetable farmers cooperators;

ii.   evaluate the loan repayment performance of vegetable farmer cooperators;

iii.   estimate the factors that affect loan repayment of vegetable farmers cooperators; and

iv.   identify the constraints faced by the vegetable farmer cooperators in the study area

Hypothesis of the Study

The null hypothesis of the study is stated as follows:

HO₁: There is no significant factors that affect vegetable farmers' co-operators on their loan repayment and performance in Anambra State.

METHODOLOGY

Study Area

The study was conducted in Anambra State, Nigeria, which is located in the southeastern region of the country. Anambra State lies between latitudes 5°40' N and 6°50' N and longitudes 6°35' E and 7°30' E. Anambra State is bordered to the north by Kogi State, to the west by Delta State, to the east by Enugu State, and to the south by Imo and Rivers States. It covers an estimated land area of 4,844 km² (Anambra State Government, 2022). The Anambra River (Igbo: Ọmambala) flows 210 kilometres (130 mi) into the Niger River and is found in Anambra, Nigeria. The river is the most important feeder of the River Niger below Lokoja. The flow of the Ọmambala River is released into the Atlantic through various outlets forming the 25,000-square-kilometre (9,700 sq mi) Niger Delta region. Omambala was the name of the ancient goddess whose river runs from the Uzo-uwa-ani underworld to Aguleri, Anam, Nsugbe and Onicha axis, where it connects with Nkisi & Niger-kwora/Mgbakili Rivers in their journey to the Atlantic Ocean, according to the indigenous people.The climate of Anambra State is characterized by a tropical wet and dry climate, with an average annual rainfall of 1,500 mm to 2,500 mm and temperatures ranging from 25°C to 35°C. Anambra is one of the most populated state in Nigeria with a population density of approximately 900. The state has fertile soil that supports diverse agricultural activities, including vegetable farming, which is widely practised by smallholder farmers. Major vegetables grown in the state include tomatoes, peppers, onions, fluted pumpkin, okra, and leafy greens (Okonkwo et al., 2022). The presence of cooperative societies plays a significant role in providing financial assistance to these farmers, making it an ideal location for studying loan repayment performance among smallholder vegetable farmer co-operators.

Population

The population of this study comprises of about 1,500 smallholder vegetable farmer co-operators in Anambra State who have accessed loans from cooperative societies and financial institutions. These farmers engage in small-scale vegetable farming across the 21 Local Government Areas (LGAs) of the State, relying on cooperative societies for credit and other financial services to support their agricultural activities. Given the critical role of cooperatives in enhancing agricultural productivity and financial inclusion, this study focuses on these smallholder farmers to examine the factors influencing their loan repayment performance.

Sampling Technique, and Sample Size

To ensure a representative sample, a multi-stage sampling technique was employed. In the **first stage,** there were visit to the ministry of commerce and industry to obtain the list of all the registered vegetable farmer co-operators in the state. **In the second stage,** (50%) of the agricultural zones were randomly selected from the four agricultural zones, these are Anambra zone and Onitsha zone. **In the third stage,** from each of the two agricultural zones that were selected (50%) of the local government areas were randomly selected making it eight local government areas. For Anambra zone (Anambra North, Anambra west, Oyi and Anyamelum), for Onitsha zone (Onitsha south, Ihiala, Idemili south and Ogbaru) five LGAs (Awka North, Dunukofia, Idemili

North, Orumba North, and Ogbaru). **In the fourth stage,** from each of the eight LGAs that were selected, one community each were randomly selected, giving a total of 16 communities. **In the fifth stage,** from each of the communities that were selected, 20 vegetable farmer cooperators were randomly selected, giving a total of 320 respondents that were selected for the study.

The determination of the sample size follows Yamane's (1967) formula as follows:

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

Where:

N = 1,500 (total population)

e = 0.05 (margin of error)

$$n = \frac{1500}{1 + 1500(0.05^2)} = \frac{1500}{4.75} = 315 \approx 320$$

Thus, a sample size of 320 respondents was considered appropriate, as it provides a balance between statistical power and resource constraints.

Data Collection

Primary data were collected through a structured questionnaire designed to capture information on the study objectives. The questionnaire will be divided into four sections: Socioeconomic Characteristics, Loan Repayment Performance, Constraints to Loan Repayment, and Suggestions for Improving Loan Repayment. Data were collected through face-to-face interviews with respondents to ensure clarity and completeness of responses.

Data Analysis

The collected data were analysed using descriptive and inferential statistical methods: Objective (i) and (iv) were achieved using descriptive statistics such as frequencies, percentages and mean. Objective (ii) was achieved using a loan repayment index (LRI). While objective (iii) was achieved using multiple regression analysis.

Measurement of Variables

Socioeconomic Characteristics

i.   Gender: Gender was measured by dummy value of male (1) and female (0)

ii. Age: Respondents were asked to indicate their chronological age in years.

iii. Education: Level of Education was measured by nominal value of No Formal Education (1), Primary Education (2), Secondary Education (3), and Tertiary Education (4)

iv. Household size: Respondents was asked to indicate the number of persons in a household under the head of the farm family.

v.   Farm size: This was measured in hectares.

vi. Farming experience: This was measured in years.

vii. Annual income: This was measured in Naira (₦).

Constraints faced by the vegetable farmer co-operators in the study area

Constraints were measured using a 4-point Likert type scale. The scale was coded Strongly Disagree (1), Disagree (2), Agree (3), and Strongly Agree (4). A mean score of 2.5 was used as cut-off point to categorize the responses into Agree (2.5 and above) and Disagree (below 2.5).

Model Specification

Loan repayment performance was evaluated using a loan repayment index (LRI), calculated as:

$$LRI = \frac{Total\ Amount\ Repaid}{Total\ Loan\ Amount} x100 \dots \dots \dots \dots \dots \dots \dots . (2)$$

Farmers were classified into high repayment performance (LRI ≥ 75%) and low repayment performance (LRI < 75%) according to Afolabi and Adesina (2021).

Multiple regression analysis was used to estimate the factors affecting loan repayment performance among the respondents. The model is specified as:

$$Y_i = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \dots + \beta_9 X_9 + e_i \dots \dots \dots \dots \dots \dots . (3)$$

Where:

Y_i = Loan Repayment Performance

β_0 = Constant

$\beta_1, \beta_2, ..., \beta_9$ = Regression coefficients

X_1 = Age (years)

X_2 = Household size (number of persons)

X_3 = Education level (categorical: no formal education, primary, secondary, tertiary)

X_4 = Farming experience (years)

X_5 = Income level (₦ per annum)

X_6 = Loan amount received (₦)

X_7 = Interest rate (%)
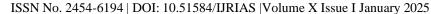
X_8 = Loan duration (months)

X_9 = Access to extension services (yes = 1, no = 0)

e_i = Error term

RESULTS AND DISCUSSIONS

Socioeconomic Characteristics of Vegetable Farmers Co-operators

The socioeconomic characteristics of the vegetable farmer co-operators, as presented in Table 1, reveal significant insights into the demographic and operational composition of these farmers. Notably, the majority (81.6%) are female, highlighting the critical role women play in vegetable farming within the region. This finding aligns with Ugwumba and Uchehara (2015), who also observed higher female participation in

agricultural cooperatives, suggesting a trend of women taking active roles in cooperative farming activities. The average age of 42 years indicates that the farmers are predominantly in their economically active years, which is critical for agricultural productivity. Similar findings were reported by Okonkwo-Emegha et al. (2021), who noted an average age of 40 years among cucumber farmers, emphasizing that middle-aged farmers are typically more engaged in farming due to their vigor and experience.

Marital status shows that 60.0% of the farmers are married, which might contribute to a stable household dynamic supportive of cooperative farming activities. This demographic aligns with studies like those of Nwibo and Nwakpu (2017), where a majority of cooperative farmers were married, and facilitating family labor contributions. The average household size of six persons further underscores the potential for significant family labor input, a critical factor for smallholder farming. Rotimi et al. (2024) highlighted that household size positively influences loan repayment capacity, as larger households often provide additional labor resources that enhance productivity.

Educational attainment shows that most farmers (61.6%) have attained at least secondary education. This level of education is significant because it enhances farmers' ability to adopt improved farming practices and efficiently manage resources, including loans. Akpaeti and Umoren (2020) reported that education positively affects loan repayment performance by improving farmers' financial literacy and decision-making skills. The average farm size of 0.35 hectares reflects the smallholder nature of these farmers, which is consistent with findings by Nwankwo et al. (2019), who emphasized the importance of cooperatives in enhancing credit access for small-scale farmers.

The table also indicates an average farming experience of 16 years, which is essential for effective farm management and productivity. Experience often correlates with better decision-making and loan utilization, as observed in studies like Mgbasonwu and Emmanuel (2018), where farming experience significantly influenced loan repayment capacity. Furthermore, the average annual income of ₦428,506.38 reflects moderate earnings, with most farmers falling within the ₦250,100–₦500,000 range. This income level is crucial for determining the ability to repay loans, as indicated by Shillie et al. (2022), who found that higher farm income enhances loan repayment performance. Access to extension services (58.1%) further supports the farmers' ability to implement modern practices, which can improve productivity and income, reinforcing their repayment capacities.
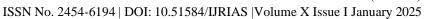
Table 1: Socioeconomic characteristics of vegetable farmer cooperators

Variable	Frequency	Percent	Mean
Gender			
Male	59	18.4	
Female	261	81.6	
Age (years)			
Less than 21	18	5.6	
21 – 30	62	19.4	
31 – 40	107	33.4	
41 – 50	78	24.4	42 years
Above 50	55	17.2	
Marital status			

Single	66	20.6	
Married	192	60.0	
Divorced	30	9.4	
Widowed	32	10.0	
Household size (persons)			
1 – 5	159	49.7	
6 – 10	102	31.9	6 persons
11 – 15	39	12.2	
Above 15	20	6.3	
Educational level			
No formal	40	12.5	
Primary	85	26.6	
Secondary	115	35.9	
Tertiary	80	25.0	
Farm size (hectare)			
0.1 – 0.2	138	43.1	
0.3 – 0.4	110	34.4	0.35 hectares
0.5 and above	72	22.5	
Farming experience (years)			
0 – 10	100	31.3	
11 – 20	120	37.5	16 years
21 – 30	62	19.4	
Above 30	38	11.9	
Annual income (₦)			
<100,000	30	9.4	
100,000 – 250,000	88	27.5	
250,100 – 500,000	115	35.9	₦428,506.38
500,100 – 750,000	45	14.1	

750,100 – 1,000,000	28	8.8	
Above 1,000,000	14	4.4	
Access to extension service			
Yes	186	58.1	
No	134	41.9	

Loan Repayment Performance of Vegetable Farmer Cooperators

The result presented in Table 2 highlights key elements of loan repayment performance among smallholder vegetable farmer co-operators in Anambra State, Nigeria. The results show that the majority of farmers accessed loans within the range of ₦250,100 to ₦500,000 (28.1%), with an average loan amount of ₦429,726.56. Interestingly, a smaller percentage of farmers (5.0%) accessed loans above ₦1,000,000, suggesting limited access to larger credit facilities. These findings are consistent with empirical studies, such as those by Akpaeti and Umoren (2020), which reported similar challenges in accessing sufficient loan amounts due to restrictive policies and bureaucratic hurdles in credit disbursement.

The average loan amount repaid (₦399,025.16) was slightly lower than the average amount received, indicating repayment challenges among the co-operators. The repayment distribution reveals that most farmers repaid amounts between ₦100,000 and ₦250,000 (29.7%), followed by those repaying between ₦250,100 and ₦500,000 (27.5%). This trend suggests a potential gap in repayment capacity, as highlighted by Shillie et al. (2022), who identified factors like high-interest rates, price fluctuations, and crop failures as constraints to full repayment. The minimal percentage (3.8%) of farmers who repaid above ₦1,000,000 underscores the difficulties in meeting obligations for larger loans.

Regarding loan repayment performance, most farmers (68.4%) exhibited a repayment rate between 50% and 90%. Specifically, 31.9% achieved a repayment rate of 50-70%, while 34.4% repaid 71-90%. Only 19.1% of the farmers had an excellent repayment performance above 90%, indicating room for improvement in financial discipline and capacity among co-operators. This finding aligns with Nwibo and Nwakpu (2017), who identified factors such as time of loan disbursement, interest rate, and nature of investment as critical determinants of repayment success. The challenges of inadequate loan size and untimely disbursement further compound the repayment difficulties faced by these farmers.

The study showed that loan repayment performance of smallholder vegetable farmer co-operators in Anambra State reflects a mixture of moderate success and challenges. Factors such as loan amount, repayment conditions, and institutional support are critical in influencing repayment behavior. The findings corroborate previous studies, including those by Mgbasonwu and Emmanuel (2018) and Rotimi et al. (2024), which emphasize the importance of addressing structural and economic barriers to enhance loan repayment performance. Strengthening cooperative frameworks, providing financial education, and implementing supportive policies can help improve loan utilization and repayment rates, ultimately fostering sustainable agricultural productivity.

Table 2: Loan repayment performance of vegetable farmer co-operators

Variable	Frequency	Percent	Mean
Loan amount received (₦)			
<100,000	38	11.9	
100,000 – 250,000	84	26.3	

250,100 – 500,000	90	28.1	₦429,726.56
500,100 – 750,000	62	19.4	
750,100 – 1,000,000	30	9.4	
Above 1,000,000	16	5.0	
Loan amount repaired (₦)			
<100,000	52	16.3	
100,000 – 250,000	95	29.7	
250,100 – 500,000	88	27.5	₦399,025.16
500,100 – 750,000	48	15.0	
750,100 – 1,000,000	25	7.8	
Above 1,000,000	12	3.8	
Loan Repayment Performance (%)			
<50	47	14.7	
50 – 70	102	31.9	68.4%
71 – 90	110	34.4	
Above 90	61	19.1	

Factors that Affect Loan Repayment of Vegetable Farmers Cooperators

The results in Table 3 reveal that socioeconomic and institutional factors significantly influence the loan repayment performance of vegetable farmer co-operators in Anambra State. The coefficient of determination (R-squared) at 0.654 indicates that approximately 65.4% of the variation in loan repayment performance can be explained by the variables included in the model. Among the variables, age, education level, farming experience, income level, and loan amount received, interest rate, and access to extension services were significant at varying levels. The negative coefficient for age (-0.012, p=0.003) suggests that older farmers may face greater challenges in meeting loan repayment obligations, possibly due to declining productivity or health-related limitations. This finding aligns with Nwibo and Nwakpu (2017), who noted that older farmers often face repayment constraints due to reduced farm output. On the other hand, the positive and significant influence of education level (0.065, p=0.001) highlights the role of literacy in improving financial management skills and repayment discipline, corroborating findings by Akpaeti and Umoren (2020).

Farming experience (0.015, p=0.013) and income level (0.098, p=0.001) were positively and significantly related to loan repayment performance. These results suggest that experienced farmers, having better knowledge of farming techniques, are more likely to utilize loans efficiently and repay promptly. Higher income levels also enhance repayment capacity by providing a steady stream of funds. Similar observations were made by Mgbasonwu and Emmanuel (2018), who found farming experience and income levels to be significant predictors of repayment capacity among farmers in Abia State. Conversely, a higher loan amount received (-0.045, p=0.013) and interest rate (-0.070, p=0.002) negatively influenced loan repayment. High-interest rates and large loan amounts can burden farmers, especially in the absence of grace periods or subsidies, as highlighted by Isibor and Nkamigbo (2019). This underscores the need for financial institutions to consider borrower capacity during loan disbursement.

Access to extension services (0.115, p=0.011) significantly enhanced loan repayment performance, indicating the importance of advisory support in guiding farmers on best practices and resource utilization. This finding aligns with Shillie et al. (2022), who emphasized that extension services improve loan utilization efficiency and repayment rates. Meanwhile, household size and loan duration were not significant, suggesting that family responsibilities and the repayment timeline might not directly affect repayment for this group of farmers. The Durbin-Watson statistic of 1.987 indicates no significant autocorrelation in the residuals, further validating the model's reliability.

Hypothesis Testing

HO_1: There is no significant effect of socioeconomic and institutional factors of vegetable farmers co-operators on their loan repayment performance in Anambra State.

The overall significance of the model was evaluated using the F-statistic. The F-statistic value of 39.876, with a corresponding p-value of 0.000. This suggests that the null hypothesis can be rejected at the 1% level of significance. This implies that collectively, the independent variables significantly influence the loan repayment performance of vegetable farmers' co-operators in Anambra State, N
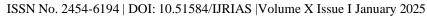
Table 3: Socioeconomic and institutional factors that affect loan repayment of vegetable farmers co-operators

Variable	Coefficient	Standard Error	t-Statistic	p-Value
Constant	0.845	0.210	4.024	0.000
Age	-0.012***	0.004	-3.000	0.003
Household size	0.018	0.014	1.286	0.199
Education level	0.065***	0.020	3.250	0.001
Farming experience	0.015**	0.006	2.500	0.013
Income level	0.098***	0.030	3.267	0.001
Loan amount received	-0.045**	0.018	-2.500	0.013
Interest rate	-0.070***	0.022	-3.182	0.002
Loan duration	0.010	0.012	0.833	0.405
Access to extension services	0.115**	0.045	2.556	0.011
Model Summary				
R-Squared	0.654			
Adjusted R-Squared	0.637			
F-Statistic	39.876			
Durbin-Watson	1.987			

*** And ** are significant at 1% and 5% respectively

Constraints Faced by the Vegetable Farmer Co-Operators

The analysis of Table 4 on the constraints faced by vegetable farmer co-operators in Anambra State reveals

significant challenges influencing loan repayment performance. The high cost of farm inputs, with the highest mean score of 4.12, is a critical concern. This finding aligns with studies by Okonkwo-Emegha et al. (2021) and Akpaeti and Umoren (2020), which identified high production costs as a significant challenge for cucumber and cassava farmers, respectively. Similarly, unfavorable weather conditions (mean = 3.90) and high-interest rates (mean = 3.82) also pose significant constraints. These factors exacerbate financial burdens, particularly as weather unpredictability directly affects crop yields, reducing farmers' ability to generate sufficient income for loan repayment. These constraints underscore the need for government intervention through subsidies on farm inputs and the provision of weather-indexed insurance schemes to mitigate risks. This report is in line with the findings of Emegha, (2023) who stated that several crises like the Boko Haram attacks have contributed to regional farming crisis, food insecurity and famines in the north east and other zones.

The table also highlights unstable market prices/ insecurity (mean = 3.75) and insufficient loan amounts (mean = 3.53) as significant barriers. Unstable prices reduce profitability, making it difficult for farmers to meet their financial obligations. Nwibo and Nwakpu (2017) and Rotimi et al. (2024) emphasize that price fluctuations and insufficient loan sizes are critical issues limiting farmers' repayment capacity. Furthermore, the short loan repayment period (mean = 3.68) complicates repayment schedules, particularly for farmers whose production cycles do not align with the repayment timeline. These findings suggest the necessity for financial institutions to adopt flexible repayment schedules and provide adequate loan amounts tailored to agricultural cycles. Additionally, training farmers on market dynamics and value addition strategies, as suggested by Rotimi et al. (2024), could enhance market stability and income. Thus, this result is in line with the findings of Emegha and Okafor, (2021) who reported that herdsmen and farmers clashes are feuds that have adversely led to wanton destruction of lives and crops, about 2,500 individuals lost and also cattle do eat on the homestead of farmers who in reprisal assault the dairy animal of the animals of the herders.

Interestingly, lack of collateral (mean = 2.40) and poor access to extension services (mean = 2.48) were not perceived as significant constraints, which may indicate improved institutional arrangements or cooperative frameworks. However, the mean score for the complex loan application process (mean = 3.12) suggests that procedural bottlenecks still exist, consistent with the findings of Ugwumba and Uchehara (2015), who identified excessive bureaucracy as a hindrance. Addressing these procedural issues through simplified application processes and better access to extension services would enhance the effectiveness of loan schemes. These recommendations, supported by empirical studies, could significantly improve loan repayment performance among smallholder vegetable farmers in Anambra State. High cost of farm inputs, poor access to extension services and lack of government support with the mean (4.12, 2.48 & 3.33) respectively. This is in line with the result of Okonkwo-Emegha, Achoja., & Okeke (2019) who state that high cost of farm inputs and poor access to extension service are the main constraints faced by vegetable smallholder farmers

Table 4: Constraints faced by the vegetable farmer co-operators

Constraints	Mean	Std. Dev.	Remark
High-interest rates on loans	3.82	0.532	Agree
Short loan repayment period	3.68	0.625	Agree
Insufficient loan amount	3.53	0.701	Agree
Lack of collateral	2.40	1.142	Disagree
Complex loan application process	3.12	0.931	Agree
Unstable prices/insecurity	3.75	0.657	Agree
High cost of farm inputs	4.12	0.432	Agree

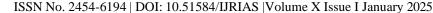|			
Poor access to extension services	2.48	1.034	Disagree
Unfavourable weather conditions	3.90	0.588	Agree
Lack of government support	3.33	0.765	Agree

CONCLUSION AND RECOMMENDATIONS

Loan repayment performance among vegetable farmer co-operators is influenced by a combination of socioeconomic and institutional factors. While education, farming experience, and income levels positively enhance repayment capabilities, high-interest rates, short repayment periods, and insufficient loan amounts impede performance. Notably, access to extension services improves resource utilization, fostering better loan repayment outcomes. The research highlights the necessity for a supportive ecosystem involving government, cooperatives, and financial institutions to address these challenges. Strengthening institutional frameworks and aligning loan conditions with the unique needs of vegetable farmers will ensure financial sustainability and agricultural growth in Anambra State based on the findings of the study, the following recommendations were made:

i. The government should subsidize farm inputs to reduce production costs and provide weather-indexed insurance to mitigate the risks associated with unfavourable weather conditions. Market stabilization policies, including minimum price guarantees for vegetables, should be implemented to reduce price volatility.

ii. Cooperative societies and financial institutions should offer flexible loan repayment schedules tailored to the seasonal nature of vegetable farming. Interest rates should be lowered, and loan sizes increased to meet the operational needs of smallholder farmers, ensuring adequate financial support for productivity.

iii. Cooperatives should simplify loan application processes to reduce bureaucratic hurdles and provide pre-loan training to enhance farmers' financial literacy and resource management.

iv. Agricultural extension agents should intensify advisory support, focusing on efficient farming practices, market information, and value addition to increase farmers' incomes.

REFERENCES

1. Akpaeti, A. J., & Umoren, A. A. (2020). Investigating the determinants of loan repayment performance among cooperative beneficiaries in the south-south, Nigeria. Int'l Journal of Agric. and Rural Dev, 23(2), 5223-5228.
2. Balana, B. B., & Oyeyemi, M. A. (2022). Agricultural credit constraints in smallholder farming in developing countries: Evidence from Nigeria. World Development Sustainability, 1, 100012.
3. Emegha, N. K. (2023). Boko Haram Sect Banditry, Insurgency or Terrorism? A global /Domestic Synthesis of an unrelenting group. Arts and Social Science Research, 13(4), 267-288. Retrieved from https://fassjassr.com.ng/index.php/assr/article/view/144. Vol. 13 No 4 (2023).
4. Emegha, K. N. (2023). Security Challenges and their Strategic Impacts on Trade and Commerce in South East Nigeria. South East Journal of Political Science, 9(1), 34 – 44. Retrieved from https://journals.npsa-se.org.ng/index.php/SEJPS/view/1.
5. Emegha, K. N. (2022). The Political Economy of Nigeria Indonesia: A Strategic Analysis of Secular States. University of Nigeria Journal of political Economy, 12(1). Retrieved from https://www.unipe.com/index.php/UNJPE/article/view/181
6. Emegha, K. N., Okafor, G. O. (2021).Diffusing the dynamics of Herder-farmer conflict in Nigeria. African political science Review, 13(1),Pp.137-148
7. Emegha, K. N. (2019). Nigerian Politics and Strategic Repositioning. A critical Analysis IDOSR Journal of Humanities and Social Sciences, 4(2), 85-94. Retrieved from: www.idosr.org/wp-content/

uploads/2019/10/IDOSR-JHSS-42-85-94-2019-ANSU-P2-pdf.

8. Fadeyi, O. A. (2018). Smallholder agricultural finance in Nigeria: The research gap. Journal of Development and Agricultural Economics, 10(11), 367-376.

9. Isibor, A. C., & Nkamigbo, D. C. (2019). Economic determinants of loan repayment to large and small scale farmer-beneficiaries of bank of agriculture loans from 2010-2016 in Anambra State, Nigeria. International Journal of Agricultural Policy and Research, 7(4), 91-99

10. Jimoh, A. T. (2021). Determinants of Financial Resources Mobilisation of Interest-Free Cooperative Societies in Ilorin, Kwara State, Nigeria. International Journal of Islamic Business & Management, 5(1), 48-66.

11. Jimoh, I. (2023). Determinants of Loan Repayments Culture among Credit Takers of Microfinance Banks in Kwara State (Master's thesis, Kwara State University (Nigeria)).

12. Kehinde, A., & Bamire, A. S. (2023). Determinants of demand and supply of microcredit among fish farmers in Osun State. Journal of Agribusiness and Rural Development, 67(1), 5-18.

13. Kuye, O. O., & Edem, T. O. (2019). Determinants of loan repayment among small-scale cassava farmers in Akpabuyo local government area of Cross River State, Nigeria. Asian Journal of Agricultural Extension, Economics & Sociology, 35(3), 1-11.

14. Mgbasonwu, V. N., & Emmanuel, U. (2018). Analysis of Factors Influencing Farmers Loan Repayment Capacity in Abia State. Agricultural Studies, 2, 58-69.

15. Mgbebu, E. S., & Achike, I. A. (2017). Analysis of loan acquisition and repayment among small scale rice farmers in Ebonyi State, Nigeria: Implication for effective credit delivery. Iosr Journal of Economics and Finance (Iosr-Jef), 8(3), 20-26.

16. Muhammad, I. B., Tafida, M., Ahmed, I., & Bello, A. (2021). Determinant of Loan Repayment Performance among SMEs in Nigeria: A Conceptual Review. 1(1), 112-127.

17. Nwankwo, F. O., Ogbodo, O. C., & Onwuchekwa, F. C. (2019). Agricultural credit and farm output of cooperative members in Anambra State, Nigeria. International Journal of Trend in Scientific Research and Development (IJTSRD), 3(3), 557-563.

18. Nwibo, S. U., & Nwakpu, C. (2017). Loan repayment capacity of cooperative farmers in Ohaukwu Local Government area of Ebonyi state, Nigeria. IOSR Journal of Agriculture and Veterinary Science, 10(5), 47-53.

19. Okonkwo-Emegha K.., Achoja, F. O., & Okeke, D. C., (2019). Financial Benefit Analysis of Organic Farming of Fluted Pumpkin (Telfairia occidentalis Hook. F.): Evidence from Nigeria. ANADOLU, J. of AARI. ISSN: 1300-0225 (Print), E-ISSN: 2667-6087 (Online) 2019, 29 (2): 93-102. DOI:10.18615/anadolu.660253.

20. Okonkwo, P. C., Onyeze, C. N., & Mbaogu, E. E. (2022). Effect of Farmers Co-operative Societies' Activities on Rural Development in Anambra State, Nigeria. Journal of Management 9(1), 50-68

21. Okonkwo-Emegha, K., Isibor, C. A., & Ahaneku, C. E. (2021). Socio-economic determinants of cucumber production amidst covid-19 pandemic in Ikwerre local government area of rivers state Nigeria. Nigerian Journal of Science and Environment, 19(2).

22. Okonkwo-Emegha, K., Umebali, E.E & Isibor, C. A., (2019). Socio- economic Determinants of Organic Farming Technology among Small Fluted Pumpkin Farmers' in South-South Zone, of Nigeria. International Journal of Innovative Research and Development. 8(11). DOI:10.24940/ijird/2019/v8/i11/NOV19084

23. Okonkwo-Emegha, K., Achoja, F.O. & Anarah, S. E. (2018). Credit Worthiness and Repayment Amomg Farmer Cooperators in Delta State, Nigeria. International Journal of Applied Economics Studies, 6(1). ISSN: 2345-5721. http://sijournals.com/IJAE/

24. Okunlola, O. C., & Ayetigbo, O. A. (2024). Impact of Agricultural Financing on Agricultural Growth Sustainability in Nigeria. The Journal of Developing Areas, 58(3), 171-203.

25. Onyeneke, R. U., Igberi, C. O., Uwadoka, C. O., & Aligbe, J. O. (2018). Status of climate-smart agriculture in southeast Nigeria. GeoJournal, 83, 333-346.

26. Rotimi, F., Olubiyo, S., Agbonlahor, M., & Adeogun, S. (2024). Determinants of loan repayment among agricultural beneficiaries of public funded credit scheme in Ekiti State, Nigeria. Journal of Contemporary African Studies, 42(1), 88-103.

27. Samson, A., & Obademi, O. (2018). The determinants and impact of access to agricultural credit on productivity by farmers in Nigeria; Evidence from Oyo State, Nigeria. Advances in Social Sciences

Research Journal, 5(3).

28. Shillie, P. N., Bime, M. J. E., Balgah, R. A., & Wiysherinyuy, M. L. (2022). Access to and repayment of Agricultural Credit in the face of COVID 19: A Gender Analysis in Selected Microfinance Institutions in Cameroon. Finance & $_{Economics}$ Review, 4(1), 1-10.

29. Solomon, E., Juliana, I., & Antonia, A. I. (2016). Analysis of the effects of microfinance banks loans on the livelihood of small-holder farmers in Delta state, Nigeria. Economic Affairs, 61(3), 381-390.

30. Ugwumba, C. O. A., & Uchehara, F. O. (2015). Gender differences in access to and repayment of bank of agriculture loans among cooperative farmers in Anambra State, Nigeria. International Journal of Arts & Sciences, 8(8), 263.

31. Yamane, T. (1967). Statistics, an introductory analysis (2nd Ed.). Harper and Row.