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SOCIOECONOMIC DYNAMICS AND RESILIENCE STRATEGIES AMONG MAIZE FARMER'S MICROCREDIT UTILIZATION IN SABON GARI LOCAL GOVERNMENT AREA OF KADUNA STATE, NIGERIA

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Abstract

This study investigated the socioeconomic dynamics and resilience strategies among maize farmers utilizing microcredit in Sabon Gari Local Government Area of Kaduna State, Nigeria. A multi-stage sampling technique was used to select 240 maize farmers, and data were analyzed using descriptive statistics. The results showed that most farmers were male (94%) and within the economically active age group of 30–39 years (58%). A majority were married (72%) and had at least secondary education (72%), with an average household size of eight persons and mean farming experience of 14 years. Most respondents operated small-scale farms (58%, 1.00–1.99 ha), with land mainly acquired through inheritance (71%). Microcredit was primarily utilized for purchasing inputs (19%), processing and packaging (15%), and working capital (12%), while some funds supported education (9%), healthcare (11%), and personal investments (3–6%). However, only 8% of farmers exhibited high utilization, indicating constraints related to limited financial literacy and restrictive loan conditions. Major production constraints included high input costs (25.7%), drought (23.5%), and poor soil fertility (14.1%). Farmers adopted coping strategies such as livestock sales, irrigation practices, and organic soil management. The study concludes that microcredit supports farm and household needs but its effectiveness is constrained by access limitations and production challenges. It recommends improved microcredit accessibility, financial literacy programs, and investment in irrigation infrastructure to enhance productivity and resilience.

Keywords: Maize Farmers, Socioeconomic Profiles, Microcredit Access, Resilience Strategies

INTRODUCTION

Maize production is a cornerstone of Nigeria's agricultural sector, supporting the livelihoods of millions of smallholder farmers and playing a crucial role in the country's food security (FAO, 2020; IFAD, 2021). Despite its agricultural potential, Nigeria faces persistent challenges that hinder the productivity and resilience of rural farming communities, particularly in Kaduna State, located in the northwest geopolitical zone (World Bank, 2019). In Kaduna State, maize farming is a vital component of the agricultural economy, serving as a primary source of income and food for numerous households (Nigeria Galleria, 2017; World Population Review, 2023). Sabon Gari Local Government Area (LGA) within Kaduna State is a key area for maize cultivation, where smallholder farmers play a central role in agricultural activities (National Population Commission, 2006; United Nations Development Programme, 2022). Despite its importance, many smallholder maize farmers in Sabon Gari LGA face significant food insecurity, struggling to access sufficient and nutritious food to meet their daily dietary needs (FAO, 2020; IFAD, 2021). This highlights the urgent need to explore effective strategies to enhance food security among farmers in the area. Meanwhile, microcredit has emerged as a key strategy to address these issues by providing farmers with financial resources to invest in improved seeds, fertilizers, and other agricultural inputs to improve their socioeconomic status (Umeifekwem & Umeifekwem, 2021; Unachukwu, Tanko, Jirgi, & Yisa, 2022). Smallholder farmers' socioeconomic status, such as land ownership, income levels, educational attainment, and access to agricultural resources, plays a critical role in shaping the livelihoods and food security status of smallholder farmers in Nigeria (World Bank, 2019).

In Nigeria, small-scale enterprises have received significant attention from various levels of government. The Bank of Agriculture is key in providing loans to support large-scale industrialists and small-scale farmers in establishing their businesses. Specifically, the Micro Credit Scheme is tailored to meet the needs of small-scale farmers by addressing the challenge of limited funding that often arises when starting such businesses (Umeifekwem & Umeifekwem, 2021; Unachukwu *et al*., 2022). The utilization of microcredit via the Bank of Agriculture (BoA) presents a promising solution to enhance agricultural productivity and address food insecurity among smallholder maize farmers in the Sabon Gari Local Government Area (LGA) of Kaduna State, Nigeria. By facilitating access to affordable credit, farmers can invest in modern farming practices, acquire essential inputs, and implement activities that boost their yield and resilience against shocks such as price volatility, pests, and climate change. However, the limited access to microcredit and uneven utilization among farmers has led to significant disparities in productivity outcomes, leaving many smallholders vulnerable. This study aims to bridge these gaps by

investigating the socioeconomic profiles of maize farmers, their access to microcredit facilities, and the resilience strategies in Sabon Gari LGA, Kaduna State, Nigeria, so that farmers can better utilize microcredit to boost their productivity, reduce disparities in outcomes, and build resilience to socioeconomic and environmental shocks in Sabon Gari LGA. This research seeks to provide empirical insights that can inform policy interventions aimed at enhancing agricultural productivity, improving food security outcomes, and promoting sustainable rural development in Sabon Gari LGA and similar agricultural regions across Nigeria. Consequently, the specific objectives are the socio-economic characteristics of maize farmers in the study area, the level of micro-credit utilization among farmers, and the constraints and resilience strategies in maize production in the study area.

Material and Methods

Description of the Study Area

The research was conducted in Sabon Gari Local Government Area (LGA), situated within the Northern Guinea Savannah ecological zone of Kaduna State, Nigeria. The LGA is geographically positioned between latitudes 11°15' N and 11°30' N and longitudes 7°30' E and 7°45' E, covering a significant portion of the state's agricultural landscape (Kaduna State Ministry of Land and Survey, 2022; World Population Review, 2023). Sabon Gari experiences a typical savannah climate characterized by two distinct seasons. The rainy season occurs from April to October, while the dry season extends from November to March. The area receives an average annual rainfall of 800 to 1,000 mm and has a mean temperature of approximately 27°C. Its predominantly ferrous soils are well-suited for various agricultural activities, enhancing its role as an agricultural hub (National Meteorological Agency, 2020; FAO, 2021).

As of 2023, the population of Sabon Gari was estimated at 382,945, based on a projected annual growth rate of 2.5% since the last national census in 2006 (National Population Commission, 2006; World Population Review, 2023). The local economy is predominantly agrarian, with agriculture forming the primary source of livelihood for the majority of the population. Key crops cultivated include maize, sorghum, millet, groundnuts, cowpeas, and yams, which provide essential dietary staples and contribute to household income. Additionally, livestock farming plays a vital role in the economy, with significant numbers of cattle, goats, sheep, and poultry raised for both subsistence and commercial purposes (National Agricultural Extension and Research Liaison Services, 2020; United Nations Development Programme, 2022).

The strong interdependence between crop cultivation and livestock production highlights the centrality of agriculture to Sabon Gari's socio-economic fabric. This sector not only supports local food security but also underpins the economic stability of the region. Despite its agricultural potential, the area faces challenges such as variability in rainfall patterns, limited access to modern farming inputs, and inadequate market infrastructure, which impact productivity and profitability. Addressing these challenges through sustainable practices and targeted interventions could further strengthen the agricultural sector, ensuring improved livelihoods and economic resilience for the residents of Sabon Gari and the broader Kaduna State.

Sampling Procedure and Sample Size

The study adopted a multi-stage sampling approach, combining purposive and random selection methods to ensure a representative and relevant sample. In the first stage, Sabon Gari Local Government Area (LGA) was purposively chosen based on specific criteria, including the presence of maize farmers who had accessed microcredit, the security situation in the area, and the willingness of farmers to participate in the research. The second stage involved the random selection of four wards (Samaru, Basawa, Dogarawa, & Tudun Wada) using a balloting technique to maintain impartiality. In the third stage, six communities were randomly selected from each of the four wards, resulting in a total of 24 communities. Finally, in the fourth stage, 10 maize farmers were randomly chosen from each community, culminating in a total sample size of 240 farmers.

Data Source

The study utilized primary data collected through a structured questionnaire administered to maize farmers by trained field enumerators under the supervision of the researcher. Data collection focused on farming activities during the 2022–2023 periods and encompassed various aspects, including the socio-economic characteristics of maize farmers, their utilization of microcredit, challenges encountered in maize production, and the coping strategies employed in the study area.

Data Analysis

Descriptive statistics, including mean, frequency table, percentage, and bar chart, were employed to achieve the study's objectives. These methods were used to analyze the socio-economic characteristics of maize farmers, assess their utilization of microcredit, and identify the constraints faced and resilience strategies in maize production within the study area.

Results and Discussion

Socio-Economic Characteristics of Maize Farmers in the Study Area

The socio-economic characteristics of maize farmers in the study area are summarized in Table 1, beginning with the distribution by gender. The data show that a significant majority of the farmers (94%) are male, while only 6% are female. This indicates that maize farming in the area is predominantly male-dominated. The gender disparity may be attributed to cultural norms that limit women's participation in farming activities and the physically demanding nature of agricultural labor. These findings are consistent with earlier research that highlights the unequal allocation of

agricultural tasks between men and women in rural areas (FAO, 2011; Quisumbing *et al.,* 2015).

The age distribution of maize farmers provides further insights into the demographic profile of the population. As presented in Table 1, 58% of the farmers are aged between 30 and 39 years, with an average age of approximately 34 years. This age group represents the most economically active and productive demographic for maize farming. The dominance of farmers in the 30–39 age group is indicative of trends in rural agricultural communities, where individuals in their prime working years are primarily engaged in farming (Ogunlela & Mukhtar, 2013).

The marital status distribution of maize farmers in the study area, as illustrated in Table 1, indicates that a large majority (72%) are married, while 28% are single. This dominance of married individuals highlights the influence of family dynamics on maize farming. Married farmers often bear greater financial responsibilities, which may motivate them to intensify their farming activities to generate higher income. These results align with existing studies that emphasize the relationship between family structures and agricultural productivity (FAO, 2020; Ogunlela & Mukhtar, 2013).

Table 1 also presents the educational qualifications of maize farmers, showing that most farmers (72%) have attained secondary education. Furthermore, 15% possess tertiary education, while 6% each have primary and adult education, and only 1% lack formal education. The high literacy rate among the farmers suggests a significant potential for improving agricultural productivity through the adoption of advanced inputs and efficient farming techniques. According to Sabo (2011), education plays a critical role in influencing farmers' decision-making and improving their capacity to implement better livelihood strategies and farm management practices.

The distribution of household sizes among maize farmers, as shown in Table 1, reveals that 78% of the farmers have between 1 and 10 household members, while only 7% have 21–30 members, with an average household size of 8 members. This indicates that farmers generally maintain relatively large households, which serve as a source of family labor. Larger households reduce the need for hired labor and associated costs, thereby contributing positively to farm productivity. These findings are consistent with the observations of FAO (2013), which suggest that the availability of family labor in rural agricultural settings supports smallholder farmers in managing farm activities effectively and minimizing labor expenses.

The experience levels of maize farmers, detailed in Table 1, show that 45% of farmers have 1–10 years of farming experience, while only 2% have 31–40 years of experience, with an average farming experience of 14 years. This substantial level of experience indicates that many farmers possess the technical knowledge and skills necessary for efficient maize production. Experienced farmers are better equipped to adapt to environmental changes, adopt innovative practices, and optimize farm operations. These findings corroborate earlier studies by Dossa *et al.* (2019), Belete (2020), & Omotilewa *et al.* (2021) that report that farmers with extensive experience are better equipped to efficiently utilize resources, apply modern inputs, make informed decisions, and adopt soil and water conservation techniques, which collectively enhance productivity and enable better adaptation to environmental changes.

Table 1: Socio-Economic Characteristics of Maize Farmers in the Study Area

Variables	Frequency	Percent	Mean	Standard Deviation
Sex				
Male	225	94		
Female	15	6		
Total	240	100		
Age				
20-29	53	22		
30-39	139	58	34	8.723
40-49	26	11		
50-59	18	7		
60 and above	4	2		
Total	240	100		
Marital status				
Married	172	72		
Single	68	28		
Total	240	100		
Educational qualification				
Non-formal education	2	1		
Adult education	15	6		
Primary education	15	6		
Secondary education	172	72		
Tertiary education	35	15		
Total	240	100		
Household size				
1-10	187	78		
11-20	35	15	8	5.85
21-30	18	7		
Total	240	100		
Farming experience				
1-10	108	45		
11-20	88	37		
21-30	40	17	14	9.211
31-40	4	2		
Total	240	100		
Farm size				
Less than 1.00	22	9		
1.00-1.99	139	58		
2.00-2.99	68	28	1.4	0.697
3.00-3.99	7	3		
4.00 and above	4	2		
Total	240	100		
Mode of land acquisition				
Borrowed	22	9		
Purchased	15	6		
Rented	33	14		
Inherited	170	71		
Total	240	100		

Field survey, 2023

The distribution of farm sizes among maize farmers, as presented in Table 1, indicates that a significant proportion (58%) cultivate farms ranging from 1.00 to 1.99 hectares. In addition, 28% of farmers operate on farm sizes of 2.00 to 2.99 hectares, while smaller percentages manage larger farms, with 3% cultivating 3.00 to 3.99 hectares and only 2% owning farms of 4.00 hectares or more. The average farm size is approximately 1.4 hectares, suggesting that maize farming in the area is predominantly small-scale. This small-scale cultivation is primarily aimed at meeting household consumption needs, with limited surplus production for commercial purposes. These findings align with reports by FAO (2019) and World Bank (2020), which emphasize the prevalence of smallholder farming in sub-Saharan Africa, where land fragmentation and restricted access to larger plots limit farmers' operational scale.

As shown in Table 1, the methods of land acquisition among maize farmers reveal that the majority (71%) inherit their land, while others rent (14%), borrow (9%), or purchase (6%) their land. The high proportion of inherited land suggests a substantial level of land ownership, which can positively influence participation in farming activities by eliminating or reducing the financial burden associated with land acquisition. Land ownership is a key determinant of agricultural productivity, as it enhances farmers' capacity to invest in and sustainably manage their farms. These observations are supported by FAO (2013), which highlights the importance of secure land tenure in promoting food production and agricultural development.

Level of Micro-Credit Utilization among Farmers

Figure 1 illustrates the diverse applications of micro-credit among maize farmers, highlighting a significant focus on agricultural-related expenditures. Notably, micro-credit is predominantly allocated to purchasing agricultural inputs (19%), processing and packaging agricultural products (15%), and working capital (12%). These allocations reflect farmers' prioritization of improving productivity and adding value to their farming operations. Such utilization aligns with previous studies, which emphasize that access to micro-credit enhances agricultural productivity by facilitating the purchase of essential inputs and adoption of improved farming techniques (IFAD, 2021; Kabir *et al.,* 2019). In addition to agricultural uses, micro-credit is also directed toward non-agricultural needs, including education (9%), healthcare (11%), and personal investments such as weddings (3%), vehicles (6%), and housing (4%). This indicates the dual role of micro-credit in supporting both agricultural activities and the broader financial needs of farming households. The findings underscore the critical role of financial inclusion in addressing the multifaceted requirements of rural communities, as highlighted in studies like World Bank (2019).

The distribution of micro-credit utilization levels shows that 53% of farmers exhibit low usage, 39% fall into the medium usage category, and only 8% report high utilization. This suggests varying degrees of access to and reliance on micro-credit, with the low percentage of high usage possibly reflecting barriers such as limited financial literacy, restrictive loan conditions, or risk aversion. These challenges align with issues identified in earlier studies, which point to constraints in fully leveraging micro-credit to meet agricultural and household needs (IFAD, 2021).

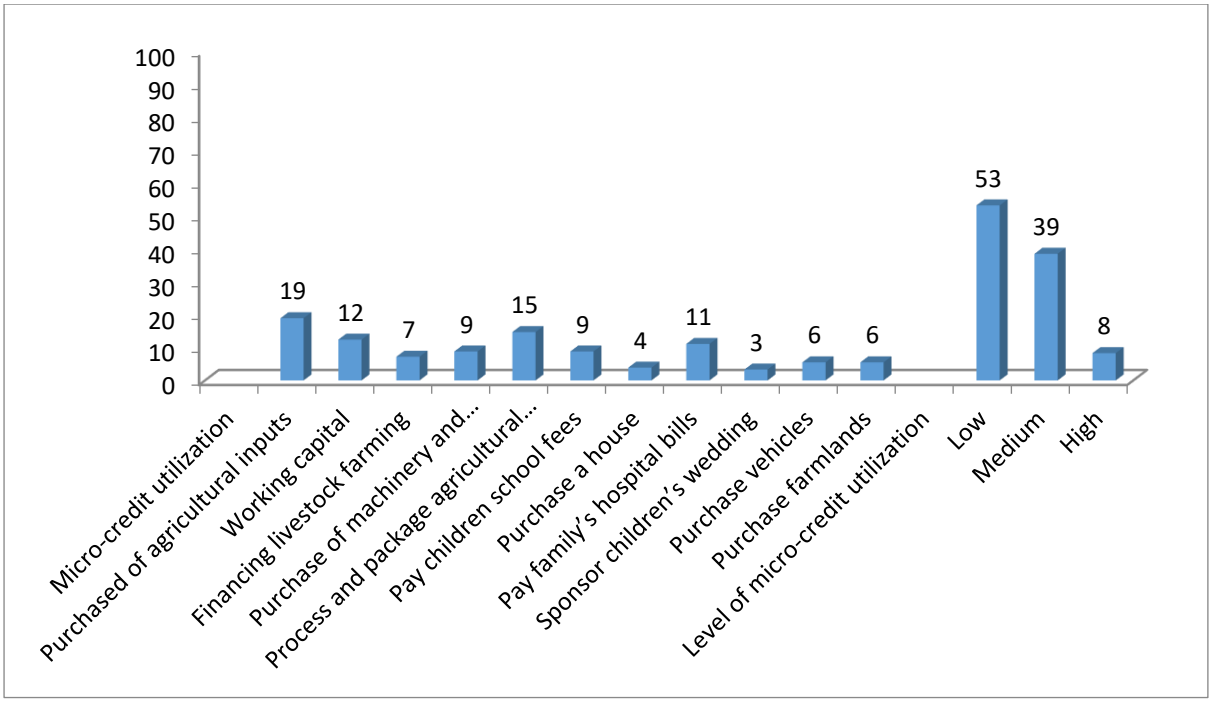

Figure 1: Bar Chart showing the Level of Micro-Credit Utilization among Farmers
Note: Low (< 20%), Medium (20% - 65%) and High (66% and above)

Constraints and Resilience Strategies in Maize Production in the Study Area

The study identifies several constraints affecting maize production in the area, which are crucial for understanding the agricultural challenges faced by farmers. The primary constraint is the high cost of inputs, reported by 25.7% of farmers, leading to financial strain. To cope with this, farmers sell livestock and produce and use personal savings strategies aimed at cushioning the impact of high input costs on their farm activities. This aligns with existing research, which points to the financial barriers that smallholder farmer's encounter, limiting their access to essential inputs and thereby affecting productivity (IFAD, 2021).

Another significant challenge is drought, which impacts 23.5% of farmers, highlighting the vulnerability of rain-fed agriculture to climatic changes. Farmers are increasingly adopting irrigation systems as a strategy to build resilience, consistent with recommendations in agricultural sustainability studies that advocate for improved water management practices (World Bank, 2019).

Poor soil fertility, affecting 14.1% of farmers, poses another substantial hurdle, often leading to increased reliance on inorganic fertilizers, raising production costs and lowering profitability. Farmers engage in practices like sequential farming, using cow dung, and applying fertilizers to counteract soil fertility issues. This aligns with prior research that emphasizes soil degradation as a key obstacle to sustainable agriculture in sub-Saharan Africa (FAO, 2020).

A lack of adequate farm funds, cited by 12.5% of farmers, reflects broader financial constraints that hinder small-scale farming success. Farmers compensate by selling farm produce, reducing farm sizes, and seeking family support to sustain their operations. Literature highlights the critical role financial access plays in boosting agricultural productivity and improving farmer livelihoods (Kabir *et al.,* 2019).

Furthermore, issues such as insufficient government support (12.5%), inadequate storage facilities (7.0%), and limited extension services (4.6%) exacerbate these challenges, highlighting systemic gaps in agricultural support infrastructure. The absence of government backing and extension services is particularly concerning, as these services are vital for offering technical assistance and resources, enabling farmers to adopt modern farming practices and enhance productivity (IFAD, 2021).

Inadequate storage facilities also contribute to post-harvest losses, reducing the overall efficiency of maize production. To address these constraints effectively, a multifaceted approach is required, including financial support to alleviate input costs, investments in irrigation and soil fertility management, improved credit access, and strengthened government support to enhance infrastructure and extension services. These findings align with broader literature, which calls for integrated strategies to mitigate agricultural constraints and boost the sustainability and productivity of smallholder farming systems (FAO, 2020; World Bank, 2019; IFAD, 2021).

Table 2: Constraints and Resilience Strategies in Maize Production in the Study Area

Constraints	*Freq.	%	Ranking	Resilience Strategies
Drought	77	23.5	2nd	Irrigation
Poor soil fertility	46	14.1	3rd	Sequential farming, cow dung and fertilizer application
Inadequate storage fertility	23	7.0	6th	Old method
Inadequate farm fund	41	12.5	4th	Sale of farm produce, reduce the farm size and family support
Government support	41	12.5	4th	Nil
Inadequate extension service	15	4.6	7th	Nil
High cost of inputs	84	25.7	1st	Sell livestock to acquire fund, sell farm produce and personal savings

Field survey, 2023
** Multiple choice allowed*

CONCLUSION

This study highlights the significant role of microcredit in shaping the socioeconomic dynamics and resilience strategies of maize farmers in Sabon Gari LGA, Kaduna State. It underscores that while microcredit provides much-needed financial support; its impact is limited by access barriers such as financial literacy and restrictive loan conditions. In addition, farmers face critical production challenges, including high input costs, drought, and poor soil fertility, which hinder productivity. Despite these constraints, farmers actively employ strategies such as livestock sales, irrigation, and organic farming to cope with these issues.

Recommendations

To enhance agricultural productivity and food security in the area, it is recommended to:

i. Government agencies and financial institutions need to improve the accessibility of affordable microcredit by streamlining loan application procedures, offering financial literacy programs, and increasing awareness about available funding opportunities. These efforts will enable more farmers to successfully access microcredit, empowering them to invest in essential inputs, expand their farming activities, and boost overall productivity; and

ii. To address the challenges posed by drought and poor soil fertility, focused investments in irrigation infrastructure are essential. By providing smallholder farmers with access to reliable irrigation systems, water supply stability can be achieved, leading to improved crop yields and increased resilience to climate fluctuations. This initiative will encourage the adoption of sustainable farming practices and significantly enhance food security in the area.

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