

## An Evaluation on the Impact of Microfinance on Agricultural Productivity in Bayelsa State

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**KEYWORDS:** Microfinance, Agricultural Productivity, loans, Rural Farmers, Income Levels.

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### ABSTRACT

This study investigated the impact of microfinance on agricultural productivity in Bayelsa State, Nigeria. That is, evaluating the role of microfinance access, microfinance loans, and the operational efficiency of microfinance institutions in enhancing agricultural output. A survey was conducted among 201 farmers in rural Bayelsa, and data were collected on their demographic characteristics, access to microfinance, loan usage, and perceived effects on productivity and income. Descriptive statistics and chi-square tests were used to analyze the data. The findings revealed a significant and positive impact of access to microfinance loans on agricultural productivity in Bayelsa State. Furthermore, microfinance loans significantly enhanced the income levels of farmers, with many reporting improved financial stability. The study also highlighted the importance of operational efficiency in microfinance institutions, as farmers who perceived these institutions as efficient reported better agricultural outcomes. Based on these findings, the study recommended expanding access to microfinance, improving the operational efficiency of microfinance institutions, and providing financial literacy training to farmers. These measures were deemed essential for boosting agricultural productivity and improving the livelihoods of rural farmers in Bayelsa State.

### 1.0 INTRODUCTION

Microfinance, a financial tool designed to provide small loans to individuals in underserved or low-income communities, plays a crucial role in promoting economic growth, particularly in rural areas. In Bayelsa State, Nigeria, agriculture remains the backbone of the economy, with a large portion of the population depending on farming for their livelihood (Adebayo & Oluwaseun, 2020). Despite its significance, farmers in Bayelsa State face numerous challenges, including limited access to credit, outdated farming techniques, and poor infrastructure. Microfinance institutions (MFIs) can address some of these challenges by providing financial resources to enhance agricultural productivity, improve income levels, and reduce poverty. In Bayelsa State, where many farmers operate at a subsistence level, the availability of microfinance loans can be crucial in boosting agricultural productivity. For instance, loans can be used to purchase improved agricultural inputs, such as fertilizers and equipment, which can lead to increased yields (Adebayo & Oluwaseun, 2020). However, it is necessary to evaluate whether these loans are effectively utilized and whether they result in tangible improvements in farm productivity. Furthermore, the operational challenges faced by Microfinance institutions (MFIs), such as the high cost of servicing rural clients, also need to be considered (Nwachukwu & Anyanwu, 2020).

Thus, evaluating the impact of microfinance on agricultural productivity in Bayelsa State, focusing on how access to microfinance could influence the productivity of smallholder farmers. By examining the role of Microfinance institutions (MFIs) in the agricultural sector, this research seeks to understand how financial support can contribute to increased crop yields, improved farming practices, and better market access, as well as to explore broader socio-economic effects of microfinance, such as poverty alleviation and food security (Ogundipe & Akinmoladun, 2021). In other words, microfinance is seen as an ideal financial strategy to empower farmers in developing economies. By providing capital, farmers can access modern farming tools, invest in better seeds, and improve their productivity (Igboke, 2022). However, despite the growth of MFIs in Bayelsa, challenges such as inadequate financial

literacy, repayment difficulties, and the limited reach of Microfinance institutions (MFIs) in remote areas hinder their full potential in driving agricultural productivity (Eze & Akinsanmi, 2021). Therefore, it is essential to assess how microfinance impacts smallholder farmers in terms of their agricultural output, income, and overall development. This study intends to fill the gap in literature by investigating the relationship between access to microfinance and agricultural productivity in Bayelsa State. The research will evaluate whether access to microfinance has a measurable impact on farmers' ability to improve their agricultural practices, increase their output, and achieve better financial outcomes. Therefore, the hypotheses for the study are:

**H01:** There is no significant relationship between access to microfinance and agricultural productivity in Bayelsa State.

**H02:** Microfinance loans do not significantly impact the income levels of farmers in Bayelsa State.

**H03:** The operational efficiency of microfinance institutions does not significantly affect agricultural productivity in Bayelsa State.

## **2.0 LITERATURE REVIEW**

Adebayo and Oluwaseun (2020) explored the relationship between microfinance services and agricultural productivity in Nigeria's South-West region. They conducted a survey of 400 farmers and found that access to microfinance loans was positively associated with a 25% increase in agricultural output. Regression analysis revealed that microfinance institutions (MFIs) played a crucial role in enhancing farmers' ability to invest in modern farming technologies and inputs, which led to higher productivity. The study concluded that microfinance access provides farmers with the capital necessary to improve productivity. The study recommended that microfinance institutions in Nigeria strengthen their focus on agricultural financing to improve the sector's overall productivity (Adebayo & Oluwaseun, 2020). Ochieng and Mwangi (2019) conducted a study on microfinance access and agricultural productivity in Kenya, focusing on the role of microfinance institutions in rural development. Using a sample size of 350 farmers, the research found that farmers with access to microfinance services reported a 30% improvement in crop yields. The study indicated that microcredit provided farmers with better access to agricultural inputs such as seeds, fertilizers, and machinery, which led to increased efficiency and higher agricultural output. The authors recommended that policymakers promote microfinance services specifically tailored to the agricultural sector to improve rural livelihoods (Ochieng & Mwangi, 2019). In Ghana, Nkrumah and Asamoah (2021) examined the impact of microfinance loans on agricultural productivity in rural communities. Their study, which surveyed 450 farmers, revealed that 60% of the farmers who received microfinance loans experienced a 35% increase in agricultural productivity. The study found that these loans enabled farmers to purchase modern farming tools and better-quality inputs. The authors recommended that microfinance institutions focus on developing agricultural loan products that cater to the unique needs of smallholder farmers, particularly in rural Ghana (Nkrumah & Asamoah, 2021).

Chukwu and Okeke (2022) studied the role of microfinance institutions in enhancing agricultural productivity in Nigeria's Northern region. The study utilized a sample size of 500 farmers and found that microfinance loans were instrumental in increasing farmers' adoption of improved agricultural techniques and inputs. The research concluded that microfinance significantly contributed to a 22% increase in agricultural output. The study suggested that microfinance institutions should collaborate with agricultural extension services to provide more holistic support to farmers, focusing on both financial and technical assistance (Chukwu & Okeke, 2022). Ndlovu and Zondi (2021) investigated the impact of microfinance and agricultural productivity in South Africa's rural areas. The study surveyed 400 farmers and revealed that microfinance services enabled farmers to access capital for purchasing inputs and investing in irrigation systems. The results showed a 28% improvement in agricultural productivity among farmers who accessed microfinance services. The authors emphasized that microfinance is a critical tool for boosting productivity and recommended expanding microfinance networks in rural South Africa to further enhance agricultural growth (Ndlovu & Zondi, 2021).

Moyo and Nyoni (2020) focused on the role of microfinance institutions in enhancing agricultural productivity in Zimbabwe. Through a survey of 350 farmers, the study found that farmers who received microfinance loans saw a 30% improvement in their crop yields. The research highlighted that microfinance enabled farmers to invest in new technologies, which led to increased productivity. The study recommended that Zimbabwean microfinance institutions develop more agriculture-specific financial products to enhance productivity in the agricultural sector (Moyo & Nyoni, 2020). Amadou and Sissoko (2021) explored the impact of microfinance on agricultural productivity in Mali. Their study, which surveyed 300 farmers, found that access to microfinance services led to a 20% increase in agricultural output. The study noted that microfinance loans provided farmers with the necessary capital to purchase fertilizers and modern agricultural tools. The authors recommended that Malian MFIs further target smallholder farmers with customized loan products and advisory services to maximize agricultural productivity (Amadou & Sissoko, 2021). Kamara and Fofana (2020) examined the role of microfinance in agricultural productivity in Sierra Leone's rural regions. The study surveyed 350 farmers and found that those who accessed microfinance loans were able to increase their agricultural productivity by 25%. The research indicated that microfinance facilitated access to essential farming inputs, such as improved seeds and tools, which directly contributed to higher yields. The study recommended that Sierra Leone's microfinance institutions develop tailored financial products that focus on improving agricultural output (Kamara & Fofana, 2020). Akinwale and Olatunji (2021) explored the relationship between microfinance access and agricultural productivity in Nigeria's South-East region. Their study, which involved 450 farmers, found that access to microfinance loans significantly improved agricultural productivity by 27%. The study emphasized that farmers who had access to microfinance were able to acquire modern farming tools, fertilizers, and irrigation

systems, all of which contributed to improved crop yields. The authors recommended that microfinance institutions in Nigeria provide farmers with more flexible loan repayment options to accommodate the seasonal nature of agricultural activities (Akinwale & Olatunji, 2021). Ibrahim and Ali (2021) analyzed the impact of microfinance on agricultural productivity in Sudan. The study surveyed 400 farmers and found that 70% of those who received microfinance loans reported a 33% increase in agricultural productivity. The study concluded that microfinance institutions in Sudan played a vital role in helping farmers invest in better farming practices and technologies. The study recommended that Sudanese microfinance institutions focus on providing tailored services that address the specific needs of farmers in different regions (Ibrahim & Ali, 2021).

Kamanzi and Dushimimana (2019) examined the effect of microfinance services on agricultural productivity in Rwanda. Their study surveyed 300 farmers and found that microfinance loans contributed to a 30% increase in agricultural output. The study revealed that loans allowed farmers to purchase quality seeds, fertilizers, and equipment that improved their productivity. The authors recommended that Rwandan microfinance institutions focus on strengthening agricultural loan products and incorporating training on sustainable farming practices for farmers (Kamanzi & Dushimimana, 2019). Nyathi and Moyo (2022) conducted a study on the role of microfinance in agricultural productivity in Zimbabwe's rural areas. The study found that microfinance loans facilitated the acquisition of farming tools and improved irrigation systems, which led to a 40% increase in productivity among farmers. The research emphasized the need for microfinance institutions to provide more training and technical support alongside financial services to ensure that farmers can effectively use the capital provided. The authors recommended that Zimbabwean MFIs expand their agricultural loan offerings to further support smallholder farmers (Nyathi & Moyo, 2022). Sossou and Kossivi (2020) examined the relationship between microfinance and agricultural productivity in Benin's rural agricultural sector. The study found that farmers who accessed microfinance loans experienced a 25% increase in agricultural productivity. The study emphasized that microfinance provided farmers with the capital needed to invest in better seeds, fertilizers, and tools. The authors recommended that microfinance institutions in Benin offer more targeted financial products that focus on increasing agricultural output (Sossou & Kossivi, 2020). Diallo and Coulibaly (2021) explored the impact of microfinance on agricultural productivity in Mali. Their study found that farmers who accessed microfinance loans reported a 27% increase in agricultural productivity. The study suggested that the provision of microfinance services allowed farmers to invest in more efficient farming technologies, leading to higher crop yields. The authors recommended that Mali's microfinance institutions focus on increasing their support for agricultural activities to drive economic growth in rural areas (Diallo & Coulibaly, 2021).

Adewale and Alabi (2021) investigated the effect of microfinance on agricultural productivity in Nigeria's North-West region. The study surveyed 550 farmers and found that microfinance loans had a significant impact on improving agricultural productivity by 22%. The study concluded that microfinance institutions provided farmers with access to necessary inputs, such as fertilizers, machinery, and irrigation systems, which led to increased productivity. The authors recommended that Nigerian MFIs develop specialized agricultural loan products that consider the seasonal nature of agricultural production (Adewale & Alabi, 2021).

Mbonyinshuti and Bizimana (2020) studied the relationship between microfinance services and agricultural productivity in Rwanda. Their findings showed that microfinance loans contributed to a 28% increase in agricultural productivity, especially in smallholder farming. The study highlighted that access to microfinance enabled farmers to invest in modern agricultural tools and better-quality inputs. The study recommended that microfinance institutions in Rwanda expand their reach and tailor their services to the agricultural sector to improve productivity (Mbonyinshuti & Bizimana, 2020). Sow and Sy (2022) examined the impact of microfinance on agricultural productivity in Senegal. The study found that microfinance services provided farmers with the capital to purchase improved seeds, fertilizers, and machinery, leading to a 25% increase in agricultural productivity. The authors recommended that Senegal's microfinance institutions strengthen their agricultural loan products and increase access to advisory services to further enhance productivity in the agricultural sector (Sow & Sy, 2022). Asante and Boateng (2020) studied the role of microfinance in improving agricultural productivity in Ghana. Their research found that microfinance access contributed to a 30% increase in crop yields, particularly among smallholder farmers. The study emphasized the importance of tailored financial products and training services for farmers. The authors recommended that Ghanaian microfinance institutions develop specialized products that target smallholder farmers and focus on sustainable agricultural practices (Asante & Boateng, 2020). Nguenang and Tchoupi (2021) examined how microfinance services impacted agricultural productivity in Cameroon. The study found that access to microfinance loans resulted in a 34% improvement in agricultural productivity. The study highlighted that loans helped farmers invest in irrigation systems and modern farming tools. The authors recommended that Cameroonian microfinance institutions expand their agricultural loan offerings and provide more technical assistance to farmers to increase agricultural productivity (Nguenang & Tchoupi, 2021).

## **2.1 Literature Gap**

The literature revealed that there is limited research on the specific role of microfinance in enhancing agricultural productivity in Bayelsa State, Nigeria. While various studies have explored the impact of microfinance on agricultural productivity in other regions and other countries. Thus, there is a need for further investigation into how microfinance services can be tailored to meet the unique challenges faced by farmers in Bayelsa State, Nigeria. This study aims to fill this gap by analyzing how microfinance can be optimized to boost agricultural productivity in the State.

### 3.0 MATERIALS AND METHOD

This study employed a cross-sectional survey design to collect data from a sample of 201 rural farmers in Bayelsa State, Nigeria. The cross-sectional design was chosen to gather data at a specific point in time and understand the relationship between microfinance access and agricultural productivity. This method provides an accurate snapshot of the current situation, which is essential for understanding the impact of microfinance on agricultural productivity in rural Bayelsa (Adebayo & Oluwaseun, 2020).

A random sampling technique was used to select the farmers. This method ensured that every farmer in the study had an equal chance of being selected, allowing the sample to be representative of the rural farming population in Bayelsa State (Akinwale & Olatunji, 2021). The farmers were selected from different rural communities within Bayelsa State to ensure diversity in the sample and provide a comprehensive view of microfinance's impact on agricultural productivity across the state.

Data for this study were collected using structured questionnaires to capture information on microfinance access, usage, and its impact on agricultural productivity among rural farmers in Bayelsa State. The questionnaire included both closed and open-ended questions, addressing loan amounts, purposes, usage in farming, and perceived productivity changes (Ibrahim & Ali, 2021). The instrument was reviewed by experts in microfinance and agriculture and pilot-tested with a small group of farmers to ensure validity and reliability (Amadou & Sissoko, 2021). Reliability was confirmed with a Cronbach's Alpha coefficient of 0.87, indicating strong internal consistency (Ibrahim & Ali, 2021).

### 4.0 DATA ANALYSIS AND DISCUSSION OF FINDINGS

#### 4.1 Descriptive Statistics

**Table4.1.1 Showing the Demographic Features of the Respondents**

Demographic Feature	Category	Frequency	Percentage (%)
Gender	Female	120	59.5%
	male	81	40.5%
Age Group	18-30 years	50	24.9%
	31-45 years	80	39.8%
	46-60 years	51	25.4%
	60+ years	20	9.9%
Education Level	No formal education	30	14.9%
	Primary school	40	19.9%
	Secondary school	60	29.9%
	Tertiary education	71	35.3%
Farm Size	Small (<1 hectare)	112	55.7%
	Medium (1 hectare)	72	35.8%
	Large (>5 hectares)	17	8.5%
Microfinance Access	Yes	150	75%
	No	51	25%

Source: Researcher's Computation

Table4.1.1 revealed that, a total of 59.5% of the respondents were female, while 40.5% were male, showing a higher proportion of female farmers in the sample. In terms of age, the largest group of respondents (39.8%) was between 31-45 years old, followed by 24.9% who were in the 18-30 years age group. The 46-60 years age group represented 25.4%, while 9.9% were aged 60 years and above.

Regarding education, a significant proportion of the respondents were well-educated, with 35.3% having completed tertiary education, 29.9% having secondary education, 19.9% having completed primary school, and 14.9% having no formal education. In terms of farm size, 55.7% of the respondents managed small-scale farms of less than one hectare, 35.8% operated medium-sized farms (1 hectare), and 8.5% had large farms, exceeding five hectares.

Microfinance access was also a noteworthy finding, with 75% of the respondents indicating that they had access to microfinance, while 25% did not. This suggests that a large majority of the farmers in the study have financial support through microfinance institutions.

#### 4.2 Inferential Statistics using Chi-Square

**Table 4.2.1 Hypothesis 1(H01): There is no significant relationship between access to microfinance and agricultural productivity in Bayelsa State.**

Variable	Chi-Square ( $\chi^2$ )	Df	p-value
Access to Microfinance vs. Agricultural Productivity	7.65	2	0.022*

Source: Researcher's Computation



**Interpretation:** The chi-square test showed a significant relationship between access to microfinance and agricultural productivity in Bayelsa State ( $p = 0.022$ ). This suggests that access to microfinance significantly influences agricultural productivity. More than half of the respondents (59.5%) reported an increase in productivity due to microfinance.

**Hypothesis 2 (H02): Microfinance loans do not significantly impact the income levels of farmers in Bayelsa State.**

Variable	Chi-Square ( $\chi^2$ )	df	p-value
Microfinance Loans vs. Income Levels	10.22	2	0.006**

**Interpretation:** The chi-square test results indicated a significant impact of microfinance loans on farmers' income levels ( $p = 0.006$ ). A majority of respondents (54.7%) reported increased income after accessing microfinance loans, while only 14.0% reported a decrease.

**Hypothesis 3 (H03): The operational efficiency of microfinance institutions does not significantly affect agricultural productivity in Bayelsa State.**

Variable	Chi-Square ( $\chi^2$ )	df	p-value
Operational Efficiency of MFI vs. Agricultural Productivity	4.52	2	0.034*

**Interpretation:** The chi-square test showed a significant relationship between the operational efficiency of microfinance institutions and agricultural productivity ( $p = 0.034$ ). This indicates that the efficiency of microfinance institutions significantly affects agricultural productivity, with farmers reporting improved productivity when they perceived microfinance institutions as efficient.

#### 4.3 Discussion of Findings

##### Access to Microfinance and Agricultural Productivity

The results indicated that there is a significant relationship between access to microfinance and agricultural productivity in Bayelsa State, as evidenced by the chi-square result ( $p = 0.022$ ). The majority of farmers (59.5%) experienced increased agricultural productivity due to access to microfinance, which aligns with the findings of similar studies that suggest access to financial resources positively impacts agricultural output (Adebayo & Oluwaseun, 2020).

##### Microfinance Loans and Income Levels

The chi-square test showed that microfinance loans significantly impact farmers' income levels ( $p = 0.006$ ). The majority of respondents (54.7%) reported that their income levels increased after receiving loans from microfinance institutions. This supports the view that microfinance plays a critical role in improving the financial status of farmers by providing access to credit for agricultural activities, similar to findings in other regions (Moyo & Nyoni, 2020).

##### Operational Efficiency of Microfinance Institutions and Agricultural Productivity

The operational efficiency of microfinance institutions significantly affects agricultural productivity ( $p = 0.034$ ). Respondents who perceived microfinance institutions as efficient were more likely to report increased agricultural productivity. This suggests that the effectiveness and reliability of microfinance institutions are crucial for ensuring that the loans provided to farmers lead to tangible improvements in agricultural output (Chukwu & Okeke, 2022).

#### 5.0 CONCLUSION

In conclusion, the results indicated that access to microfinance significantly impacts agricultural productivity and income levels in Bayelsa State. The relationship between access to microfinance and agricultural productivity was found to be significant. A large proportion of respondents reported increased agricultural productivity due to microfinance access. Regarding microfinance loans and income levels, the results showed a significant impact, with many farmers experiencing an increase in income after receiving loans. Finally, the operational efficiency of microfinance institutions also significantly influenced agricultural productivity, highlighting the importance of effective and reliable institutions in ensuring the success of microfinance interventions.

#### 5.1 Recommendations

- Microfinance institutions should expand their outreach in rural areas to ensure more farmers to access financial services, thereby improving agricultural productivity in the state.
- Microfinance institutions should focus on streamlining their processes and providing efficient customer service to ensure timely disbursement of loans, which would have a more significant impact on agricultural outcomes.
- Farmers should be offered training on how to effectively utilize microfinance loans, focusing on financial literacy and agricultural best practices to maximize the impact of the loans on their productivity and income.

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