

SUSTAINABILITY OF COOPERATIVE MEMBERS' FARM BUSINESSES IN THE POST COVID-19 ERA IN THE OSHIMILI SOUTH LOCAL GOVERNMENT AREA, DELTA STATE NIGERIA.

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Article Info

Keywords: Sustainability, Agricultural Cooperatives, Cooperative Members Farm Business, Cooperative loan and Sustainable Livelihood Theory

DOI

10.5281/zenodo.11097111

Abstract

This study investigated the sustainability of cooperative members' farm businesses in the post COVID-19 era in the Oshimili south local government area of Delta State in Nigeria. This study was undertaken because of limited access to credit, lockdown measures, and social distance imposed by the government. This study examines the effect of cooperative loans in increasing the value of farm products, examines the effect of members' participation on the success of cooperative farm business, and determines the effect of cooperative marketing of members' farm produce on their income. The research used a purposive sampling technique to select 20 farmers' cooperative societies with a total membership size of 295 from the study area. The Taro Yemeni formula was used to obtain the sample size of 169 members. A well-structured (5) five Likert scale questionnaire captured questions raised in their research question. The collected data were analyzed using descriptive statistics frequency percentage and mean. The study reveals that farmers' cooperative members benefit from soft loans. The study indicated that members' involvement has improved the cooperative farm business and the market for their cooperative farm products. The developed hypothesis was tested using regression analysis. The results of the test show that the null hypotheses were accepted. This means that the cooperative in Oshimili South L.G.A is still suffering from the impact of COVID-19. This made them unable to provide the needed services to their members. The work therefore recommends that cooperatives should do more to provide loans to their members in a timely manner to enable them to produce more farm products. The cooperative should organize training sessions for members on the importance of participating in cooperative business. In addition, cooperatives should encourage their members to bring their products to the cooperative to ensure an increase in their standard of living and income.

Background of the study

Cooperative have been a part of human societies since the beginning of time. People have always worked together to achieve goals that would be difficult to achieve alone (O'Neill and Brannstron, (2022). A cooperative is an autonomous association of people united voluntarily to meet their common economic, social, and cultural needs

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and aspirations through a joint-owned and democratically controlled enterprise (International Co-operative Alliance, 1995). Cooperatives cover a large part of the agricultural sector and could therefore play a role in improving farm sustainability. Through their close relationships with farmers, agricultural cooperatives may be key actors in supply chains that help farmers change their agricultural practices and favor the adoption of more sustainable practices.

Cooperative values such as democratic decision-making, equality, and solidarity give cooperatives and other types of enterprise distinct organizational characteristics (International Cooperative Alliance, 2020). As cooperative members are the owners, investors, and users of the cooperative, agricultural cooperatives have a large spectrum of action. They can design incentives to encourage farmers to change their practices through the services provided, a stronger market position, and the pooling of investments, resulting in cost sharing among members. Cooperatives may also promote the adoption of these practices by decreasing farmers' perceived risks and making investment more feasible. Okello and Vincenzo (2021) cooperatives "play a key role in promoting sustainable agricultural development" by increasing access to resources and services, as well as by providing a platform for sharing knowledge and expertise.

Sustainability can be seen as long-term survival or growth. Costanza (2015) defines sustainability as "the ability of an economic, environmental, or social system to maintain its functions over time. It can be applied to various systems, from environmental systems to economic systems. Sustainability goes beyond environmental concerns, emphasizing the interconnectedness of ecological, economic, and social dimensions, promoting holistic well-being (Burndtland, 2019). In the context of business, sustainability typically refers to the ability of a company to operate in a way that does not deplete resources or cause harm to the environment and is economically viable in the long term. Sustainability is often viewed as a balance between social, environmental, and economic factors. The ability to meet present needs without compromising the ability of future generations to meet their own needs. Cooperative have been a part of human societies since the beginning of time. People have always worked together to achieve goals that would be difficult to achieve alone (O'Neill and Brannstron, (2022). A cooperative is an autonomous association of people united voluntarily to meet their common economic, social, and cultural needs and aspirations through a joint-owned and democratically controlled enterprise (International Co-operative Alliance, 1995). Cooperatives cover a large part of the agricultural sector and could therefore play a role in improving farm sustainability. Through their close relationships with farmers, agricultural cooperatives may be key actors in supply chains that help farmers change their agricultural practices and favor the adoption of more sustainable practices.

Agricultural cooperatives are organizations where farming individuals or groups collaborate to collectively engage in production, processing, marketing, and distribution activities aimed at improving their economic condition and strengthening their bargaining power in the agricultural industry (Tesfu, 2018). An Agricultural Cooperative is a type of cooperative that unites agricultural producers for production or other activities needed by the members, such as processing, marketing of output, or supply of means of production. (Obi-Okogbuo, Okonkwo & Michael, 2015). This agricultural cooperative operates according to the seven principles of cooperation. These include Democratic Member Control, Members' Economic Participation, Autonomy and Independence, Education, Training and Information, Cooperation among Cooperatives, and Concern for Community.

Radcliffe (2019) opined that cooperative farm businesses are a group of individuals who have come together to pool their resources and share the risks and benefits of farming. Cooperative farm businesses are owned and managed by a group of farmers who work together to share resources and achieve common goals.

The COVID-19 pandemic has caused a global crisis that has affected all countries, with over 759 million confirmed cases and more than 6 million deaths as of March 2023 (World Bank Group, 2021). This unprecedented situation has led to the closure of many businesses, including co-operatives, because of the significant economic hardship caused by the pandemic. The global economy has been disrupted, resulting in decreased demand for various products and services, leading to lower profits for businesses and, in some cases, permanent closure (Gilad, Lustig, Modica, Ravina, Ringel, 2020). To combat this situation, we need to enhance the sustainability of cooperative members' farm businesses in the Oshimili South Local Government Area, Delta State. This study provides a comprehensive overview of how to achieve this goal. By identifying the challenges faced by cooperative members and providing practical solutions, we can help these businesses not only survive but also thrive during these difficult times. As a result, we can help these businesses become more resilient and sustainable, benefiting both the cooperative members and the wider community.

Statement of the Problem

The cooperative business model has proven to be a more sustainable and equitable option for individuals and communities, especially during and after the COVID-19 pandemic. This is because cooperatives put people before profit and empower individuals to work together for the common good (Ojiaju, 2021). Agricultural farmers encountered some problems during the COVID-19 pandemic, including control of the government (imposing curfew), limited access to credit, inability to scale up their activities, lockdown measures, and social distancing imposed by government and authorities across the globe, resulting in a food emergency. The success of farm businesses has been a key factor in ensuring a steady supply of food for people around the world. This is because farm businesses are responsible for producing the majority of the world's food, and their ability to adapt and innovate has helped them meet the growing demand for food despite changing conditions, such as climate change and population growth (Nepal 2021).

Much research has been conducted by Nepal (2021) on sustainable farming practices in India, and Ayo (2018) wrote on cooperative societies and the sustainability of small-scale farming in Nigeria. However, to the researcher's knowledge, there is no known work on Enhancing the sustainability of cooperative members' farm businesses in the post COVID-19 era in Oshimili South Local Government in Delta state.

Objective of the study

The broad objective of this study is the sustainability of cooperative members' farm businesses in the post-COVID-19 era in the Oshimili South Local Government Area.

The specific objectives include the following:

1. To examine the effect of cooperative loans on increasing the value of farm products
2. To examine the effect of member participation on the success of cooperative farm businesses in the study area
3. Determine the effect of cooperative marketing of members' farm produce on their income

Research Hypothesis

Hypothesis 1

Ho: There is no significant positive effect of soft loans on increasing the value of farm products.

H1: There is a significant positive effect of soft loans in increasing the value of farm products.

Hypothesis 2

Ho: There is no significant positive effect of members' participation on the success of cooperative farm businesses.

H1: There is a significant positive effect of members' participation on the success of cooperative farm businesses.

Hypothesis 3

Ho: There is no significant positive effect of cooperative marketing of members' farm produce on their income.

Ho: There is a significant positive effect of cooperative marketing of members' farm produce on their income.

Conceptual Review

Concept of sustainability

Sustainability in farming refers to the ability of a farm business to continue operating without compromising the health of the land or livelihood of the farmer (Zilberman, Kontoleon, & Yaron, 2018). It can also be regarded as long-term survival and growth. The term sustainability is broadly used to indicate programs, initiatives, and actions aimed at the preservation of a particular resource. Businesses must consider the long-term impact of their actions on both the environment and society. Sustainability is not just about environmental protection but also about protecting the health and well-being of future generations. There are four pillars of sustainability. These include human sustainability, social sustainability, economic sustainability, and environmental sustainability.

Concept of cooperatives

Taiwo, Udenze, and Agbasi (2015) opined that a cooperative society is an organization for promoting the economic interests of its members. Cooperative can also be seen as the coming together of individuals with common needs and aspirations to achieve a common objective. A cooperative is an autonomous association of persons united voluntarily to meet their common economic, social, and cultural needs and aspirations through a jointly owned and democratically controlled enterprise (ICA, 1995, 2014). A cooperative is a voluntary association of people who work together to achieve shared goals through a democratically controlled business (Iwuji and Nwankwo 2021). A cooperative is a voluntary association of people who come together to achieve common goals through a democratically controlled organization.

Members of the cooperative contribute capital, accept a fair share of the risks and benefits, and actively participate in the organization (International Labor Organization, 2015). Cooperatives play an important role in supporting member farm businesses, particularly in the areas of production, distribution, and sales. By working together, cooperatives can help improve the efficiency and profitability of their members' businesses (Ifeanyi, (2017). A cooperative is a formal organization that is democratically controlled and owned by its members, who pool their resources and share the risks and benefits of the cooperative.

Concept of Agricultural Cooperatives

Agricultural cooperatives are organizations that help farmers and other agricultural producers work together to achieve common goals, such as processing and marketing their products or obtaining supplies. By working together, these cooperatives can provide a variety of benefits to their members, including access to resources, economies of scale, and shared knowledge and expertise (Obi-okogbuo, Okonkwo, & Michael, 2015). Agricultural cooperatives are organizations formed by farmers and other agricultural producers to provide services such as marketing, processing, and distribution of agricultural products. These cooperatives allow members to benefit from economies of scale and access to resources that would otherwise be difficult to obtain individually. Members of the cooperative can also receive professional advice, loans, and farm inputs such as fertilizer, often at a discounted rate. These benefits help members improve their farming practices and increase their productivity (Okonkwo & Nwokorobia, 2013 cited by me 2023).

Aside from being an oil-producing state, Delta State is also well-known for its agricultural productivity and self-sufficiency (Shadare & Egbon 2014). An agricultural cooperative is a group of farmers who have come together to work toward a common goal, usually related to marketing their products or providing services to members (Emmanuel 2019). Agricultural cooperatives are categorized as appropriate institutions that allow farmers to participate in competitive market inputs and outputs, increase quality and food security, adopt technological advances, and improve agricultural economic performance and the welfare of rural households. The study area is known for farming activities, including livestock rearing and food production (Ajie, Ehiaghe, & Onoja, 2020).

An agricultural cooperative society is a legal entity established to help farmers improve their livelihood by improving access to services, supplies, and markets, as well as giving farmers a voice in policy discussions (Abubakar 2023). Being a member of an agricultural cooperative helps in reducing the feeling of isolation, which is common in rural areas. It helps in increasing farm production through soft loans from cooperative organizations.

Cooperative Members' Farm Business

Lee (2012) opined that cooperative members farm businesses as farms that are of members of a cooperative, an organization owned and controlled by farmers themselves, to meet the needs and interests of their members. Cooperatives are committed to economic, social, and environmental sustainability and make decisions through democratic processes. Debaere, Nnadi, and Okeke (2017) defined cooperative member farm business in Nigeria as a farm owned and operated by members of a cooperative. These businesses are common in Nigeria and play an important role in the country's agricultural sector. They can help farmers access inputs and services, improve productivity, and increase market access.

There are various types of member farm businesses that participate in cooperatives. Some examples include

Agricultural supply cooperatives:

Agricultural supply cooperatives, also known as input cooperatives, are cooperative organizations that provide farmers with inputs such as seeds, fertilizers, and other agricultural supplies. These cooperatives help farmers reduce costs by negotiating lower prices for inputs and sharing the costs of transportation and storage. They can also provide training and technical assistance to farmers. These types of cooperatives are common in Nigeria and play an important role in supporting small-scale farmers.

Agricultural Marketing Cooperatives:

Agricultural marketing cooperatives market and sell agricultural products on behalf of their members. These cooperatives help farmers obtain a fair price for their products and ensure that their products are sold promptly. They may also provide services such as storage, transportation, and grading of agricultural products.

Farm credit cooperatives:

A farm credit cooperative is a financial institution that provides credit and other financial services to farmers and other agricultural businesses. These cooperatives are owned and controlled by their members, who are typically farmers or other agricultural businesses. Farm credit cooperatives may provide various services, including loans, lines of credit, insurance, and financial planning.

Effect of cooperative soft loans on increasing the value of farm products

Soft loans typically have lower interest rates and more flexible repayment terms than traditional loans (Merriam Webster). They are often provided by governments or other organizations to promote economic development or social change. For example, soft loans may be used to fund environmental projects or to help businesses expand their operations. The Oxford Dictionary (2023) defines a soft loan as "a loan with a below-market interest rate, given to support a borrower rather than make a profit."

Investopedia also defines (2020) a soft loan as one that has a low or zero interest rate and usually has generous terms that allow for easier repayment. A soft loan was also defined by the World Bank as a loan that has a lower interest rate than the market rate and may also have a grace period before repayment begins or longer repayment periods.

Soft loans can improve the provision of land for farming in several ways. They can help farmers purchase land or secure land tenure, which can increase their security of tenure and give them the incentive to invest in the land. Soft loans can be used to finance land improvements, such as irrigation, drainage, and soil conservation, which can increase the value of the land. Soft loans can be used to support the development of infrastructure, such as roads and electricity, which can improve access to markets and increase the productivity of the lands Binswanger-

Mkhize (2012) Soft loans can also increase the value of farm produce in several ways. First, by providing access to credit, soft loans can help farmers purchase inputs like seeds, fertilizer, and equipment that can increase productivity and yields, Chiabi. A. (2019). It can help farmers invest in post-harvest storage, processing, and marketing, which can increase the value of their products. Soft loans can help farmers adopt sustainable practices, such as conservation agriculture, that can increase the value of their products in the long term.

Effect of members' participation on the success of cooperative farm businesses

Cooperatives are a unique form of organization that operates under the principles of democratic control and shared benefits. One of the key aspects of cooperatives is the active participation of their members in the decision-making process. Members' participation ensures a democratic distribution of power within the cooperative and promotes the collective welfare of its members (Galera, Montoriol-Garriga, Chiva, Dusi & Frese, (2019). Participation is essential for cooperatives because it aligns with the principle of democratic control. (Gulati, 2011. Members' participation ensures that decisions are made collectively, reducing the chances of arbitrary decisions being made by a few individuals." (Sharma & Rai, 2018). Effective member participation is crucial for the success and sustainability of cooperatives. It ensures democratic control and shared benefits and enhances the overall well-being of the members. However, it is important to address these challenges and implement measures to enhance members' participation. By fostering a culture of inclusiveness, cooperation, and empowerment, cooperatives can harness the potential of their members' collective intelligence, thereby contributing to a more equitable and just society.

Effect of cooperative marketing of members' farm produce on income:

- Marketing is the science and art of exploring, creating, and delivering value to satisfy the needs of a target market at a profit" (Kotler, 2012). Christensen (2011) defines marketing as "the process of understanding the needs of your customers and creating a business that meets those needs better than anyone else. Cooperative marketing is a system in which farmers, ranchers, and producers form marketing cooperatives to pool their resources, control their supplies, and build market power" (Dunn, 2019). Cooperative marketing is a voluntary organization that helps farmers and other agricultural producers sell their products" (Sillup, 2019).
- Cooperative marketing allows members to access a larger market than they could reach on their own. This is because the cooperative can pool its resources and marketing efforts to reach a broader range of customers. In addition, cooperative marketing allows members to share resources and expertise, which can help them improve the quality and efficiency of their marketing efforts. Cooperative marketing can also help members build relationships and trust with other members and customers.

- **Theoretical framework**

- **Sustainable Living Theory**

This study is anchored on sustainable livelihood theory. This theory was proposed by the Department for International Development (DFID) in 1999. The sustainable livelihood theory emphasizes the importance of addressing poverty and vulnerability by promoting economic, social, and environmental sustainability. Sustainable livelihood theory highlights the need for a holistic approach that considers the interconnections between people and their environment and promotes the development of strategies that can enhance the well-being and resilience of individuals and communities over the long term. Sustainable livelihood theory revolves around the five key capital assets that individuals or communities depend on for their livelihoods. These include natural, physical, human, financial, and social capital. By harnessing and integrating these capital assets effectively, rural communities and cooperatives can achieve sustainable livelihoods and improve their overall well-being. This theory can be used to understand and enhance the sustainability of cooperative members' farm businesses by analyzing how each of the five components of the framework affects farmers' livelihoods. For

example, a cooperative could provide training and resources to improve farmers' human capital, such as their knowledge of sustainable farming practices. The cooperative could also provide access to physical capital, such as equipment for sustainable farming. The cooperative could also help farmers access financial capital, such as loans and grants for

Sustainable farming.

Relevance of the theory

The sustainable livelihoods theory provides a useful way to think about development and poverty reduction. It recognizes that improving the livelihoods of individuals and communities requires a holistic and integrated approach that considers multiple dimensions of their lives. This approach can help ensure that development initiatives are more effective and sustainable. By focusing on multiple capital assets, the framework can also help to ensure that development initiatives are not only economically sustainable, but also socially and environmentally sustainable (Hanks, K., & Maxwell, S. (2016).

Empirical Review

Ayo (2018) examined the factors that contribute to the sustainability of small-scale farming in Nigeria, with a focus on the role of cooperatives. The study used a combination of secondary and primary data collected through interviews with key informants and farmers. The data were analyzed using descriptive statistics and content analysis. The study found that access to finance, land tenure, and training were key factors in improving the sustainability of small-scale farming in Nigeria. In addition, the study found that the cost of inputs was a major challenge for small-scale farmers, and cooperatives could play a role in helping farmers access inputs at lower costs. Cooperatives could also play a role in improving access to credit for small-scale farmers. The study recommends that the government should play a role in supporting cooperatives through policies and programs that promote their formation and development.

Akinyemi et al. (2021) examined how the COVID-19 pandemic has impacted agricultural cooperatives in Nigeria, specifically in terms of their access to markets and financial services. The authors also aimed to identify the challenges that cooperatives have faced in responding to the pandemic and to suggest recommendations for how cooperatives can adapt and become more resilient despite future shocks. The researcher used a mixed-methods approach that combined both quantitative and qualitative data. They collected quantitative data through an online survey of cooperative members and conducted semi-structured interviews with cooperative leaders. It appears that they used a combination of descriptive statistics and thematic analysis to analyze the data. This study shows that the COVID-19 pandemic had a significant impact on agricultural cooperatives in Nigeria, particularly in terms of their ability to access markets and financial services. The study found that cooperative leaders reported difficulties in accessing markets due to restrictions on movement and reduced demand for agricultural products. The study also found that cooperatives faced challenges in accessing credit and loans, which made it difficult for them to meet the needs of their members.

Gap in the literature

Enhancing the sustainability of cooperative member farm businesses in Nigeria is a well-researched topic. Even in the area of farm production, much research has been conducted. However, most of the studies focused on agricultural production in the Western region of Nigeria nothing substantial has been done concerning Enhancing the Sustainability of Cooperative members' farm businesses in the post-Covid 19 era in the Niger Delta region, especially in the Oshimili South Local Government Area of Delta State. This is the gap that this study intends to fill.

METHODOLOGY

Research design is a survey research design.

Area of study

The study was conducted in the Oshimili South Local Government Area of Delta State.

Population of the study

The population of the study is made up of farmer's cooperatives in the Oshimili-south Local Government Area of Delta State. The Oshimili South Local Government Area has two hundred and twenty-nine farmer's cooperative societies with a membership size of three thousand seven hundred and forty-three members in the Department of Cooperative Asaba Delta State.

Sampling technique and sample size determination

The purposive sampling technique was used to select 20 cooperative societies out of the total cooperative societies operating in the Oshimili-south local government area with a membership strength of 295. They were selected for their accessibility and functionality.

Method of Data Analysis

The data were analyzed using descriptive tools such as simple percentages, a frequency distribution table with a 5-point Likert rating, and inferential statistics such as regression analysis.

The research objectives will be analyzed using percentage and frequency distribution tables and statistical charts. Regression analysis will be used to test the hypothesis with the aid of the statistical package for social sciences (SPSS vs. 23).

DECISION RULE: Reject the null hypothesis (Ho) if the calculated r is less than the critical P- value at 0.05 level of significance.

The level of significance was fixed at 5%

The Likert scale keys were as follows:

Strongly Agreed (SA) 5 points

Agreed (A) 4 points

Undecided (U) 3 points

Strongly disagreed (SD) 2 points

Disagreed (D) 1 point

Therefore, mean = $\frac{5+4+3+2+1}{5}$

= 15 /5

= 3.0

After computing the mean, a mean score above 3.0 is considered an accepted opinion; otherwise, negation of the statement is implied.

DATA PRESENTATION**Table (2): Distribution of members' personal data**

	Personal data variables	Categories	Frequency (n=124)	Percentage (%)
1	Gender	Male	74	60
		Female	50	40
		Total	124	100
2	Marital Status	Single	39	32
		Married	76	61
		Divorced	9	7
		Total	124	100
3	Age (Years)	21-30 years	4	3
		31-40 years	80	65
		41-50 years	20	16
		51-60 years	20	16
		TOTAL	124	100
4	Educational Qualification	FSLC	64	52
		WAEC	40	32
		OND/NCE	10	8
		HND/B. Sc	5	4
		MBA/M.Sc. and others	5	4
		Total	124	100
5	Years of Cooperative Experience	1-5 years	20	16
		6-10 years	29	23
		11-15 years	31	25
		16 years and above	44	36
		Total	124	100

Source: Field Survey, January 2024.

Gender: Table (2) indicates that there were 74 male and 50 female respondents in the study area with percentages of 60 and 40, respectively. This implies that there are more males than females.

Marital Status: It further shows that 39(32%) of the respondents are single, 76(61%) are married, and 9 (7%) are divorced. This implies that there are more married couples in the cooperatives.

Age: The majority of the respondents fall within the age range of 41–50 years with a frequency rate of 80(65%). In addition, it depicts that there are only 4(3%) young adults within the age range of 21–30 years, 20 (16%) within the age range of 31–40 years, 80 (65%) within the age range of 41–50 years, and 20 (16%) within the range of 51-60 years who are members of the Cooperative in the study area.

Level of Educational Qualification: According to the findings, 64(52%) acquired primary education, 40(32%) acquired secondary education, 10(8%) obtained OND/NCE certificates, while 5 (4%) of the respondents obtained HND/BSc degree and 5(4%) obtained MBA/M.SC and others. The statistics show that members of Farmers Cooperatives in the study area are not well educated and may not be able to read and write fluently.

Years of Cooperative Experience: The study shows that more members of cooperative societies in the study area are quite experienced. The research proved that 20(16%) of the respondents had 1–5 years' experience, 29(23%) of the respondents had 6–10 years' experience, 31(25%) have 11-15 years' experience, and 44 (36%) had 16 years and above experience.

Examine the effect of soft loans on increasing the value of farm products

Table 3: distribution of the effect of soft loans in increasing the value of farm products

S/N	Items	SA (5)	A (4)	U (3)	D (2)	SD (1)	Total	Mean	Remark
a	The cooperative provides soft loans for members regularly	50 (250)	38 (152)	25 (75)	11 (22)	0 (0)	124 (499)	4.0	Accepted
b	Cooperative soft loans improve the accessibility of land for farming	80 (400)	28 (112)	16 (48)	0 (0)	0 (0)	124 (560)	4.5	Accepted
c	Soft loans help increase farm productivity and yield	39 (195)	65 (260)	12 (36)	0 (0)	8 (8)	124 (499)	4.0	Accepted
d	Availability of soft loans can improve provision of food for human consumption	18 (90)	96 (384)	7 (21)	3 (6)	0 (0)	124 (501)	4.0	Accepted
e	Soft loans are used to construct drainage in the farm	33 (165)	41 (164)	37 (111)	9 (18)	4 (4)	124 (462)	3.7	Accepted

Source: Field Survey, January 2024.

Table (3) shows how cooperative members benefit from soft loans in increasing the value of their farm products. The grand mean of 4.0 indicates that farmers' cooperative members benefit from soft loans.

Examine the effect of members' participation on the success of cooperative farm business**Table 4: distribution based on the effect of members' participation on the success of cooperative farm business**

S/N	Items	SA (5)	A (4)	U (3)	D (2)	SD (1)	Total	Mean	Remark
A	Members' participation has increased farm production	36 (180)	59 (236)	14 (42)	9 (18)	6 (6)	124 (482)	3.9	Accepted
B	Active participation promotes cooperation	77 (385)	35 (140)	2 (6)	6 (12)	4 (4)	124 (547)	4.4	Accepted
C	Use of cooperative services has improved their livelihoods	40 (200)	19 (76)	39 (117)	26 (52)	0 (0)	124 (445)	3.6	Accepted
D	Members' education and training enhances their expertise and knowledge of farm businesses	65 (325)	12 (48)	17 (51)	16 (32)	14 (14)	124 (470)	3.8	Accepted
E	Members' participation ensures that decisions are made collectively	40 (200)	66 (264)	8 (24)	3 (6)	7 (7)	124 (501)	4.0	Accepted

Source: Field Survey, January 2024

Table (4) shows the effect of members' participation on the success of the cooperative farm business. The grand mean of 3.94 in Table 5 indicates that members' involvement has improved the cooperative farm business.

Determine the effect of cooperative marketing on farm produce**Table 5: Distribution based on the effect of cooperative marketing on farm produce**

S/N	Items	SA (5)	A (4)	U (3)	D (2)	SD (1)	Total	Mean	Remark
A	The cooperative helps members sell their products at a better price	83 (415)	25 (100)	18 (54)	0 (0)	0 (0)	124 (569)	4.6	Accepted
B	Assembling of member farm produce by cooperatives improves the quality of their produce	69 (345)	30 (120)	2 (6)	19 (38)	4 (4)	124 (513)	4.1	Accepted
C	Marketing cooperative farm products has	50 (250)	43 (172)	24 (72)	7 (14)	0 (0)	124 (508)	4.1	Accepted

	increased the income of farmers									
D	Marketing cooperative members' produce has enhanced their living standards	of	81 (405)	26 (104)	11 (33)	6 (12)	0 (0)	124 (554)	4.5	Accepted
E	Marketing cooperative members' farm produce has empowered their members to do more	of	24 (120)	67 (268)	16 (48)	4 (8)	13 (13)	124 (457)	3.7	Accepted

Source: Field Survey, January 2024.

Table (5) shows the importance of cooperative marketing on farm products. The grand mean of 4.2 in Table 6 indicates that sales of cooperative farm products are increased by cooperative marketing.

Test of the Hypothesis

In this section, the research hypothesis formulated earlier was tested using linear regression analysis. Questions i– v of Table 5 (Distribution according to the effect of soft loan in increasing the value of farm product, distribution according to the effect members participation on success of cooperative farm business, distribution according to effect cooperative marketing of members farm produce on their income) were used to test the hypothesis.

Decision rule: Reject the H_0 (null hypothesis) if a positive correlation exists between the two variables.

Hypothesis 1

There is no significant positive effect of soft loans on increasing the value of farm products

H_1 : There is a significant positive effect of soft loans in increasing the value of farm products.

Test for hypothesis 1

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.565 ^a	.319	.092	31.33727	2.947

a. Predictors: (Constant), S.L

b. Dependent Variable: F.M

The table shows the model summary of the analysis conducted on the variables. It shows that the R squared value of 0.319 shows that about 31.9 % of changes in farm product are explained by soft loans

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1379.727	1	1379.727	1.405	.321 ^b
	Residual	2946.073	3	982.024		
	Total	4325.800	4			

a. Dependent Variable: F.M

b. Predictors: (Constant), S.L

F.M: Farm Products; S.L: Soft Loans

The tables show the ANOVA view of the model, which measures the overall significance of the model. The ANOVA measured the F. statistic value to be (1.405) and $P = 0.321$ at a 5% level of significance, which indicates that the overall significance of the model is not good enough.

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 (Constant)	3.505	22.785		.154	.888		
S.L	.859	.724	.565	1.185	.321	1.000	1.000

a. Dependent Variable: F.M

This table shows the t-statistics and significance values included in the coefficient results. The regression coefficients of summary explain that the soft loan coefficient of (0.859) shows a unit increase and on average increases by (0.859). The calculated t-value for the relationship between soft loans and farm products is (1.185) with an associated p-value of 0.321. Since the p-value is less than a 5% level of significance, soft loans have no significant impact on farm products.

Therefore, we accept the null hypothesis that “There is no significant positive effect of soft loans in increasing the value of farm product” and reject the alternate hypothesis that “There is a significant positive effect of soft loans in increasing the value of farm product” This means that there could be other sources available to members other than their cooperative

Test for hypothesis 2

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.473 ^a	.224	-.035	17.58302	2.594

a. Predictors: (Constant), M.P

b. Dependent Variable: C.F.B

The table shows the model summary of the analysis conducted on the variables. It shows that the R squared value of 0.224 shows that about 22.4 % of changes in cooperative farm business are explained by members’ participation.

Durbin– Watson measures the evidence of autocorrelation of the variables. The Durbin– Watson value of 2.594 indicates autocorrelation.

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	267.812	1	267.812	.866	.421 ^b
	Residual	927.488	3	309.163		
	Total	1195.300	4			

a. Dependent Variable: C.F.B

b. Predictors: (Constant), M.P

The tables show the ANOVA view of the model, which measures the overall significance of the model. The ANOVA measured the F. statistic value to be (0.866) and P = 0.421 at a 5% level of significance, which indicates that the overall significance of the model is not good enough.

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 (Constant)	16.687	11.740		1.421	.250		
M.P	.327	.351	.473	.931	.421	1.000	1.000

a. Dependent Variable: C.F.B

This table shows the t-statistics and significance values included in the coefficient results. The regression coefficients of summary explain that the member's participation coefficient of (0.327) shows a unit increase and on average increases by (0.327). The calculated t-value for the relationship between members' participation and cooperative farm business is (0.931) with an associated p-value of 0.421. Since the p-value is less than a 5% level of significance, the member's participation has no significant impact on the cooperative farm business.

Therefore, we accept the null hypothesis that "There is no significant positive effect of a member's participation on the success of cooperative farm business" and reject the alternate hypothesis that "There is a significant positive effect of a member's participation on the success of cooperative farm business"

Test for hypothesis 3

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.820 ^a	.672	.563	13.72985	3.105

a. Predictors: (Constant), C.M

b. Dependent Variable: F.P

The table shows the model summary of the analysis conducted on the variables. It shows that the R squared value of 0.672 shows that approximately 67.2 % of changes in farm produce are explained by cooperative marketing. Durbin– Watson measures the evidence of autocorrelation of the variables. The Durbin– Watson value of 3.105 shows no evidence of autocorrelation

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1159.273	1	1159.273	6.150	.089 ^b
	Residual	565.527	3	188.509		
	Total	1724.800	4			

a. Dependent Variable: F.P

b. Predictors: (Constant), C.M

The tables show the ANOVA view of the model, which measures the overall significance of the model. The ANOVA measured the F. statistic value to be (6.150) and $P = 0.09$ at a 5% level of significance, which indicates that the overall significance of the model is not good enough.

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 (Constant)	10.006	8.561		1.169	.327		
C.M	.593	.239	.820	2.480	.089	1.000	1.000

a. Dependent Variable: F.P

This table shows the t-statistics and significance values included in the coefficient results. The regression coefficients of summary explain that the cooperative marketing (C.M) coefficient of (0.593) shows a unit increase and on average increases by (0.327). The calculated t-value for the relationship between cooperative marketing and farm produce is (2.480) with an associated p-value of 0.09. Because the p-value is less than a 5% level of significance, cooperative marketing has no significant impact on farm produce.

Therefore, we accept the null hypothesis that “There is no significant positive effect of cooperative marketing of a member’s farm produce on their income” and reject the alternate hypothesis that “There is significant positive effect of cooperative marketing of a member’s farm produce on their income”. This could be because the members in the study sell their farm products by themselves and not through their cooperatives.

Discussion of the Findings

This study is centered on the sustainability of cooperative members’ farm businesses in the post COVID-19 era in Oshimili South local government area Delta State. Specifically, this study assessed the effect of cooperative activities via soft loans, members’ participation, and cooperative marketing in enhancing the sustainability of cooperative members’ farm businesses in the post-COVID-19 era in the study area. However, the findings of the study revealed that

Cooperative loans have a negative effect on increasing the value of farm products in the post-COVID-19 era Oshimili South Local Government Area. This could be a result of cooperative members failing to save money with their cooperative during and after COVID-19. Therefore, no funds were made available for the loan. It also affected the purchase of farm implements by my members. This is in contrast to the work of Douflo et al. on the impact of soft loans on farmers’ livelihoods in Kenya. The findings showed that soft loans had a significant positive effect on household consumption, income, and assets.

Members ‘participation hurts the success of cooperative members’ farm businesses in the Oshimili South Local Government Area. Due to COVID-19 social distancing measures, members lost their interest in participating in cooperative activities. In contrast to Dagne and Ishengoma (2017), cooperative membership has a significant positive effect on farmers ‘income and technical efficiencies.

Cooperative marketing hurts members’ incomes. After COVID-19, the members began to walk alone. The lockdown measure affected the sales of farm produce, thereby resulting in low income for members. This is in contrast to Baryayanga and Ssennoga’s (2017) study on the impact of cooperative marketing on members’ incomes and livelihood in Uganda. The findings showed that cooperative marketing had a significant positive impact on members’ incomes

Conclusion

This study examines the sustainability of cooperative members' farm businesses in the post COVID-19 era in Oshimili South local Government Area Delta State. From the findings of the study, all the variables tested were negative and all the null hypotheses for the research study were accepted, meaning that cooperatives in the area have not done so much in the provision of loans as a result of the effect of Covid 19. More so, members' participation has reduced due to incessant lockdown. In addition, cooperative marketing has no relaying effect on their member's farm produce to generate income. These in general showed the applying effects of the variables in the research conducted.

5.3. Recommendation

The following are recommended in line with the proposed objectives of the study:

1. Cooperatives should do more to provide loans to their members so that it will have a corresponding effect on the farm product.
2. The cooperative should organize a training section for members on the importance of participating in cooperative business.
3. Cooperatives should always market their members' farm produce to attract more income to their members.

Author's Biography

1. Dr (Mrs.) Michael Maureen Chinenye is an accomplished educationist with about 14 years teaching experience in Cooperative Economics & Management at the Federal Polytechnic Nekede Owerri. She holds a B.Sc., M.Sc. and Ph.D. Degrees in Cooperative Economics and Management of Nnamdi Azikiwe University, Awka, Anambra State. She is a lover of good education and enjoys teaching with passion. Dr. Maureen has authored several books and has published many conference papers, and has made a lot of publications in both local and international journals. She is a responsible wife and a proud mother of her children.
2. Uju Ifesinachukwu had BSc and currently a MSc student of Cooperative Economics and Management in Nnamdi Azikiwe University. she loves singing, reading and creative art, she is member of cathedral church of St faith Awka, a chorister for more than 20 years she is an administrator, she loves humanity which made her to be devoted. She is selfless and have served voluntarily at Redcross Awka. Uju is loved by anyone that comes her way.

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