

EFFECTS OF LIVELIHOOD STRATEGIES ON RURAL WOMEN FARMERS ACCESS TO AND CONTROL OF AGRICULTURAL RESOURCES IN NIGER DELTA, NIGERIA

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Abstract

This study investigated the effect of rural women farmers' livelihood strategies on their control and access to agricultural production resources in the Niger Delta region of Nigeria. four hundred and sixty (460) respondents in three states were interviewed using structured interview schedules and focus group discussion. Multiple regression analysis revealed education ($\beta = 0.817$, $p < 0.01$), food security ($\beta = 1.152$, $p < 0.01$), health ($\beta = 0.509$, $p < 0.01$), and wealth ($\beta = 0.601$, $p < 0.01$) as major determinants of rural women's agricultural resource control, while income ($\beta = -0.014$, $p = 0.919$) and consumption ($\beta = 0.277$, $p = 0.098$) were not significant predictors. Food security ($\beta = 1.300$, $p < 0.01$), consumption ($\beta = 0.698$, $p < 0.01$), health ($\beta = 0.543$, $p < 0.01$), and wealth ($\beta = 0.936$, $p < 0.01$) significantly influenced access to agricultural resources, whereas income and education influenced negatively but not significantly at 5%. This validates the influence of education, food security, health status and wealth of rural women in their agricultural empowerment. Policymakers are advised to start adult education programmes and health programmes that would help women in rural farming in accessing farm production resources and controlling its management in the Niger Delta.

Keywords: Rural women farmers, Livelihood strategies, Agricultural resources, Niger Delta, Access, Control

Introduction

Agricultural output in the Niger Delta of Nigeria is integrated in rural livelihood and women are the main farmers. Regardless of their involvement in farm work, rural women's access to agricultural production resources, including land, credit, technology and extension services, is very limited (Chibuike, 2017). Gendered disparities in the ownership and control of agricultural resources and decision-making have continued due to entrenched cultural practices, discriminatory customary law, and asymmetrical gender power relations (Balasha *et al.*, 2024). At the global and sub-Saharan African levels, a study has identified the strategic role of women in farm

output but recorded their exclusion when it comes to access and ownership of productive resources (Meinzen-Dick *et al.*, 2019; Boateng, 2022). Balasha *et al.* (2024) showed in the Democratic Republic of Congo how gender norms adapted to men's authority over domestic land assets and only a few women showed interest in land ownership. In Ethiopia, Tigabie *et al.* (2022) also observed the same patterns in which women were involved in farm labour but unable to control land and other resources. Ifejika (2020) and Chibuike (2017) also reported that women in Nigeria hardly enjoy control over land following traditional inheritance practises that limit land inheritance in women and the agricultural technology control as only 8.3% of women hold title to land. These limitations were responsible not only for limiting productivity but also for raising the rate of gendered poverty and inequality. Similarly, Okoronkwo (2019) reported the gendered trend in unpaid domestic labour that had also brought negative impacts on the effective participation of rural women in the effective agricultural production and decision making.

While recognising the rural women's contribution to farm production, gender disparities in accessing and ownership of agricultural resources persist and is a problem that has remained in the Niger Delta, Nigeria. Various studies (Ifejika, 2020; Chibuike, 2017; Kilic *et al.*, 2018) have documented that rural women face various obstacles such as patriarchal inheritance regimes, social conventions favoring men, and exclusion from access to agricultural technology and credit facilities. Such constraints undermine the ability of women to improve livelihoods and bring about farm development.

Balasha *et al.* (2024) found in areas like Kabare and Mulungwishi marshlands in the DRC that marital status and household income caused women's access to land, yet cultural reasons kept land power in men's hand. The study in Ghana by Boateng (2022) showed that women had some level of access to resources but that men controlled them, thus perpetuating gender inequalities in agricultural decision making.

Rural women's livelihood choices including off farm work, petty trade or cooperative membership are conceivably viewed as a means to greater access and control over agricultural resources in the Niger Delta. Though empirical documentation of such linkages remains scant. Microloans access improved women's economic agency according to Okafor-Yarwood *et al.* (2019), while Nwanajie and Okonta (2018) explain that having access to water infrastructure enables women to engage in diversified agriculture and thereby improve their food security. This serves to highlight the capacity for livelihood strategies to overcome gendered barriers.

Yet, the nature and extent to which these livelihood strategies influence rural women's access to and ownership of land, credit, inputs, and decision-making power in the Niger Delta remain poorly explored. In the absence of a better vision for these dynamics, interventions to empower women farmers might fail to sufficiently overcome the sources of gendered inequalities in farm production.

Therefore, the study in the current research seeks to address this gap by examining the effects of livelihood strategies among rural women farmers on their access and control of agriculture production resources within the Niger Delta region in Nigeria. By so doing, the research will submit empirical evidence for policy interventions and ensure gender equity within agricultural development.

Objectives of the Study

The main objective of the study was to examine the effect of livelihood strategies of rural women farmers on their access to and control of agricultural production resources in the Niger Delta, Nigeria. The specific objectives of the study were to:

- i. describe the socioeconomic characteristics of the rural women farmers;
- ii. examine the effect of rural women farmers' livelihood strategies on their access to agricultural production resources; and
- iii. assess the effect of rural women farmers' livelihood strategies on their control over agricultural production resources.

Methodology

The study was conducted in the Niger Delta area of Nigeria which occupies about 70,000 square kilometres and occupies nine states of southern Nigeria, namely, Cross River, Edo, Delta, Abia, Imo, Bayelsa, Rivers, Akwa-Ibom and Ondo States. Geographically it lies on Latitude 5° 19' 20.40" N and Longitude 6° 28' 8.99" E. Over forty (40) ethnic groups live in the Niger Delta which is rich when it comes to biodiversity and natural resources. Although the area is known to be rich in oil and gas production, there are serious environmental challenges such as oil spills, climate variability and land degradation which in one way or the other impact on the agricultural economy and rural livelihood (Ebegbulem, Ekpe & Adejumo, 2013). The Niger Delta has a tropical climate, with high temperatures and much rainfall and this influences its agricultural calendar: wet season from April to October, dry season from November to March. Rural women farmers' agricultural activity is mostly influenced by these climatic patterns which also determine the type of crop to be cultivated (Ebegbulem, Ekpe & Adejumo, 2013).

A multi-stage sampling technique was used (Table 1) in the selection of respondents for the study. In the first stage, 30 percent of the Niger Delta states (about 3 states) were randomly selected. Rural towns and villages are located on the basis of the ruralness: areas that are dominated by only one government or public primary school (Ovwigho & Ifie, 2009). 40 percent of rural areas in each of the selected agricultural zones were sampled and 40 percent of the rural women farmers were randomly selected irrespective of the crop enterprises. Structured interview schedules were administered by the researcher and trained enumerators while focus group discussions were undertaken. Test retest method and Cronbach alpha ($r = 0.884$) determined the reliability while experts established the content and face validity. Various methods measuring variables were used such as Likert type scales pertaining to access, control, livelihood strategies. Objective (i) was analysed through descriptive statistics while (ii) & (iii) were analysed through multiple regression analysis.

Results and Discussion

Table 1: Sample size distribution

S/N	States	Agricultural zone	Total No. of rural towns/villages	Total number of women farmers	40% of women farmers
1	Delta	Delta North	23	147	59
		Delta Central	125	381	152
		Delta South	10	45	18
		Total	158	573	229
2	Bayelsa	Bayelsa East	7	42	17
		Bayelsa Central	10	45	18
		Bayelsa West	5	48	19
		Total	22	135	54
3	Edo	Esan Central	55	75	30
		Edo North	60	95	45
		Edo South	96	105	104
		Total	171	260	17
		Grand total	351	968	460

Multiple Regression Analysis

The multiple regression model is represented as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + e \dots (1)$$

Where:

Y = Access/Control: No access/control (1), Very limited access/control (2), Moderate access/control (3), and Full access/control (4)

X₁ = Income: High (1), Moderate (2), High (3), and Very High (4)

X₂ = Education: High (1), Moderate (2), High (3), and Very High (4)

X₃ = Food: High (1), Moderate (2), High (3), and Very High (4)

X₄ = Consumption: High (1), Moderate (2), High (3), and Very High (4)

X₅ = Health: High (1), Moderate (2), High (3), and Very High (4)

X₆ = Wealth: High (1), Moderate (2), High (3), and Very High (4)

β₀ = Constant

β₁ – β₆ = Regression model coefficients

e = Random error term

Results and Discussions

Socioeconomic characteristics of the respondents

As shown in Table 2, socioeconomic characteristics of the respondents are diversified, corresponding to the earlier empirical studies on rural women farmers in developing regions. Most of the respondents (43 years average) were within the economically active age bracket of 31–50 years which is similar to Dwomohet

al. (2023) who found out that women of similar age bracket in Ghana recorded higher empowerment levels in agricultural decision making. Studies by Balashaet *al.* (2024) confirm that married women are dominant (67.6%), a finding which indicates marital status as a vital indicator of women's access to farmland and production resources, similar to other studies. Our educational attainment shows progress compared to studies like Ifejika (2020) and Fadayomi (2018) who indicate very high illiteracy rates as barriers to women access to resources and technology adoption as they have a mode at secondary school (62.8%). Women's ability to diversify income may be hampered by the household size mean of eight persons which in turn may imply high dependency burdens as also noted for Pakistan by Nasir *et al.* (2024). Tryphone and Mkenda (2023) noted that being seasoned agricultural workforce they fall between ages 21–30 (35.7%) which is consistent with the findings of this study, however low cooperative membership (25.7%) is an indication of low social capital, in agreement with an observation of Ganiyu *et al.* (2021) that women lack social capital as a limiting factor in accessing extension services. Findings from these variables suggest that age, marital status, education, household size and cooperative membership have a role in determining rural women's access and control over agricultural resources and confirm the scope to target these multi-dimensional gender constraints, as proposed by Meinzen-Dick *et al.* (2019).

Table 2: Socioeconomic characteristics of the respondents

Variable	Frequency	Percent	Mean/Mode
Age (years)			
Less than 21	12	2.6	43 years
21 – 30	67	14.6	
31 – 40	112	24.3	
41 – 50	139	30.2	
51 – 60	92	20.0	
61 and above	38	8.3	
Marital status			
Single	24	5.2	Married
Married	311	67.6	
Divorced	51	11.1	
Widowed	37	8.0	
Separated	37	8.0	
Educational level			
No education	54	11.7	Secondary
Primary	9	2.0	
Secondary	289	62.8	
Secondary class stopped	6	1.3	
NCE/HND	28	6.1	
BSc	27	5.9	
MSc	18	3.9	
PhD	29	6.3	
Household size (persons)			
1 – 5	104	22.6	8 persons
6 – 10	235	51.1	
11 – 15	89	19.3	
Above 15	32	7.0	
Farming experience (years)			
0 – 10	91	19.8	25 years
11 – 20	132	28.7	
21 – 30	165	35.9	
Above 30	72	15.7	
Membership of Farmer's cooperative			
Yes	119	25.9	Yes
No	341	74.1	

Effect of rural women farmers livelihood strategies on access to agricultural production resources

Table 3 shows the results of regression analysis that indicate that some of the livelihood strategy variables have a significant effect on rural women farmers' access to agricultural production resources in the Niger Delta. Significant positive predictors of women's access to agricultural resources which include food security ($\beta = 1.300$, $p < 0.01$), consumption ($\beta = 0.698$, $p < 0.01$), health security ($\beta = 0.543$, $p < 0.01$) and wealth status ($\beta = 0.936$, $p < 0.01$) were also found. According to this finding, rural women's access to basic agricultural inputs and resources are enhanced by integrated livelihood strategies. The outcome of this study is in agreement with Oladele (2023) which observed that in South Africa, women's empowerment and access to productive resources are robustly affected by women's livelihood capital, especially in terms of health security and consumption. Like Nwanajie and Okonta (2018), they discovered the improvement of water access which consequently gives rise to food

security and enhances income generation, raised rural women's agricultural output in an important way in southeastern Nigeria, illustrating the possibility of a linkage between different dimensions of livelihood and that of access to agriculture.

On the contrary, income and education had non significant negative effects on the access to agricultural production resources (coefficient = 0.136, $p > 0.05$ and 0.088, $p > 0.05$ respectively). This implies that contrary to expectations, increases in income and education do not directly result in better access of rural women farmers in the Niger Delta to agricultural resources. Similarly the finding of Dwomohet *al.* (2023) advocated that even though there was variation in socioeconomic status, women have marginally higher access to agricultural productive resources in comparison with men, yet there is low empowerment in agricultural decision making. More to that, Balashaet *al.* (2024) report that in the Democratic Republic of Congo there were still barriers, notwithstanding income differences, preventing women from controlling land resources as a result of

existing cultural norms and gender inequalities. This further strengthens the belief that it is not merely income and education that control the well being of women's access to agricultural production resources but there are other factors like norms of culture, decision making power and dynamic of the household.

The summary of the model ($R^2 = 0.219$) indicates that these variables account for about 21.9% of the variance in access and there is also need for further research to identify other factors that might determine women's agricultural resource access in the Niger Delta.

Table 3: Effect of rural women farmers livelihood strategies on access to agricultural production resources

Model	Coefficient	Std. Error	t	Sig.
(Constant)	22.428	6.438	3.484	0.001
Income	-0.136	0.144	-0.946	0.344
Education	-0.088	0.155	-0.566	0.572
Food	1.300***	0.172	7.545	0.000
Consumption	0.698***	0.174	4.021	0.000
Health	0.543***	0.158	3.429	0.001
Wealth	0.936***	0.192	4.877	0.000
Model Summary				
R	R Square	Adjusted R Square	F	Sig.
0.468	0.219	0.209	21.194	0.000

*** is significant at 1% level

Effect of rural women farmers livelihood strategies on control over agricultural production resources

As shown in Table 4, education, food, health and wealth predict the rural women farmers' control over agricultural production resources in the Niger Delta. However, education ($\beta = 0.817$, $p < 0.01$) appears as a factor that has particularly a significant influence, given that it means literacy and knowledge acquisition capacity which is necessary for women to control the productive resources. This agrees with what Tryphone and Mkenda (2023) argued that post-primary education enables the women to improve their capabilities of running a business and also access to resources. Likewise, Doss *et al.* (2018) observed that literacy rates were necessary for the adoption of improved seed varieties and fertiliser by female farmers as the access to agricultural choices. There is a strong significant positive relation between food ($\beta = 1.152$, $P < 0.01$) and the control over resources confirming the centrality of food security to increase in women's agency as pointed out by Okafor-Yarwood *et al.* (2019), for instance, argued that better food security translated into better household decision power of women. Then there is the contribution of

health ($\beta = 0.509$, $p < 0.01$) and wealth ($\beta = 0.601$, $p < 0.01$) and this validates the claims of Oladele (2023) that livelihood capital which involves health security can boost women empowerment in the agricultural decision making process.

However, income ($\beta = -0.014$, $p = 0.919$), consumption ($\beta = 0.277$, $p = 0.098$) were not significantly important for rural women's control of agricultural resources. Income alone may not be sufficient to empower women in the Niger Delta region, as the entrenched gender norms and asset inequalities allow the gains in income not to be translated into actual control over resources (Meinzen-Dick *et al.* 2019). However, the relatively low R-squared value (0.213) suggests that the model explains a modest percentage of the variance in women's control over resources and other perhaps unmeasured factors, e.g. cultural norms and institutional barriers, may also be at work. However, as stated earlier by Chibuike (2017) and Fadayomi (2018), the studies indeed pointed out how patriarchal custom and discriminatory inheritance practises prevent women who are engaged in economic activities from exerting control over resources.

Table 4: Effect of ruralwomen farmers livelihood strategies on control over agricultural production resources

Model	Coefficient	Std. Error	t	Sig.
(Constant)	17.834	6.179	2.886	0.004
Income	-0.014	0.138	-0.102	0.919
Education	0.817***	0.149	5.478	0.000
Food	1.152***	0.165	6.969	0.000
Consumption	0.277	0.167	1.660	0.098
Health	0.509***	0.152	3.351	0.001
Wealth	0.601***	0.184	3.263	0.001
Model Summary				
R	R Square	Adjusted R Square	F	Sig.
0.462	0.213	0.203	20.458	0.000

*** is significant at 1% level

Conclusion and Recommendations

A combination of livelihood strategies offer the promise to increase women's agricultural resource access and control, however, this research reveals that isolated improvements of income or education fail to bring about a transformative change. This is because even though women's earnings or educational attainment have risen, deeply entrenched gendered structural inequalities are preventing women from being able to convert these increased gains into tangible control over productive resources. These include discriminatory land tenure systems that confer land ownership on males, entrenched cultural norms reinforcing a patriarchal household decision making space and institutional practises that deprive women from participating in agricultural value chains. Pressing on these inequalities is essential to inclusive and sustainable agricultural development in the Niger Delta and for the full participation and benefits of women farmers in agricultural growth. These results confirm the research conducted in the DRC, Ethiopia and Nigeria and further support the need for context specific interventions that prioritise the empowerment of women along a variety of dimensions like legal rights, economic rights and socio-cultural rights to promote an inclusive and resilient agricultural sector. The recommendations based upon the results of this study are:

- i. There is a necessity by government ministries of agriculture and gender affairs to prioritise the educational empowerment of rural women farmers through direct investment into adult education programmes and literacy initiatives specific to the agricultural context of the women's livelihoods in order to enable the women to participate in decision making and resources control.
- ii. Integrated livelihood enhancement programmes need to be designed by the Non-Governmental Organisations (NGOs) which should include those initiatives that lead to food security, supporting health and wealth

for women and strengthening women's control over agricultural production resources.

- iii. Community leaders and traditional institutions must be communicated with and persuaded to engage in campaigns to challenge the prevailing cultural norms and discriminatory practises that restrict women's access to and control over agricultural land and resources.
- iv. On the institutional level, financial institutions should develop gender sensitive credit facilities as well as support services like affordable microloans with flexible repayment plans to assist women in improving on their farms by accumulating capital and investing.
- v. Women focused agricultural extension training should help them develop technical and also leadership and management skills under cooperative and collective action for better access to agricultural production resources.

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