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Research Article

Livelihood Diversification: A Panacea to Food Security by Rural Farmers in Osun State

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ABSTRACT

The study analyzed the livelihood diversification of rural women to improve food security in Osun state Nigeria. A multistage sampling procedure was used to select 129 respondents for this study. Primary data for this study were collected through an interview schedule. Data was analyzed using descriptive statistics and Chi-square as well as linear regression was used to test the hypotheses. Results revealed the need to increase family income and ensuring family food security was the highest reason for diversifying livelihood. The result further showed crop production and crop processing are the highest income for rural women. The data revealed the rural women in Osun state are not economically secure and the hypotheses showed that the monthly income from primary occupation determines the economic security of the rural women, trading as a form of livelihood diversification contributed positively to the food security of the rural women. The research concluded that livelihood diversification influences the economic security of rural women and diversification to trading contributed significantly to their economic security. It is recommended that the provision of favorable farming conditions and accessibility to loans at reduced interest rates will improve rural women's economic security in Osun State, Nigeria.

Key words: Food security, Women, Livelihood, Livelihood diversification, Nigeria

INTRODUCTION

Onakuse and Eamon (2008) defined livelihood as the activities and the resources done to earn a living. The most common definition of livelihoods encompasses the capabilities, assets and activities used to gain a living. Central to the sustainability of livelihoods are the livelihood assets, which are the means of production available to communities to generate material resources to survive (Vercillo, 2016). Livelihood is a means of securing the necessities of life such as food, water, shelter and clothing. The activities performed to live for a given life span, the capacity to acquire the above necessities working either individually or as a group by using endowment both human and material. Sustainable livelihoods are those that can cope with and recover from vulnerabilities. These should be able to maintain their form and structure, maintain their capabilities and assets presently and in the future without negatively affecting the natural resource base. The process of sustainability relies hugely on the resilience of rural livelihoods to various challenges for the empowerment of rural women (Davies *et al.,* 2013). Livelihoods are the strategies that people perform to satisfy their needs and earn a living (Bryceson, 1999). These livelihoods are possible activities to earn an income and could be from hired employment, self-employment, remittances or a combination (Mutopo, 2014).

Women are involved in livelihood activity which ranges from on-farm to off-farm enterprises to earn vital income for themselves and their families to combat poverty. The pressure on income from a single source cannot sufficiently meet the demand of rural women and their families and may not be able to assess basic needs. Therefore, they have to diversify their livelihood activities as a way of improving their livelihood and the income that is generated from the activities they engaged in contributes greatly to the family welfare (Matthews-Njoku & Adesope, 2007).

Based on the above, this study will therefore analyze livelihood diversification: A panacea to food security by rural women in Osun State.

While the objectives of the study will seek to;

- Identify the socio-economic characteristics of rural women in the study area;
- Examine the reasons for livelihood diversification among rural women in the study area;
- Determine the economic security status of rural women in the study area.

The hypotheses of the study state that

Ho1: There is no significant relationship between selected socio-economic characteristics and the economic security of rural women in the study area.

Ho4: There is no significant contribution of livelihood diversification to the economic security of rural women in the study area.

MATERIALS AND METHOD

The study was carried out in Osun State which has a rainfall average of about 1200 mm per annum distributed in two peaks

of July and September and a dry spell of about 5 months, October to February. A multistage sampling procedure was used to select 129 respondents for this study. Primary data for this study were collected through an interview schedule. Chi-square, PPMC and linear regression were used to test the hypotheses.

RESULTS AND DISCUSSION

Socio economic characteristics of respondents

The result in Table 1 shows that 19.4%, 32.7% and 35.7% of the respondents were between the ages of 31-40, 41-50 and 51-60 years respectively. The mean age of the respondents was 50 years. This reveals that the majority of the respondents who were actively involved in the major livelihood activities in the study area were adults and within the economically active age. Table 1 further reveals that 72.9% of the respondents were married and 27.1% were widowed. This shows that the majority of the rural women in the study area were married and mature adults. This reveals that for a married woman, the necessity to support the household is very key for the food security of the family. The family size analysis shows that more than half (51.9%) of the respondents had a household size of 5-7 people while 38.3% of the respondents had a household size of 2-4 people, 9.3% had a household size of 7 and above. The mean household size was 5 people which is fairly large. This result corroborates that of Aderinto (2012) that a fairly large household size is dominant in rural Nigeria and this also means women in these households are motivated to take up economic activities thereby supporting the large households. The monthly income table reveals that 48.8% of the respondents earned between ₦100,001- ₦150,000 while 39.0% and 27.0% of the respondents also earned ₦50,000 - ₦100,000 and above ₦150,000 respectively. The mean of the monthly income was ₦129,077.50. This implies that rural women had high incomes which made them to engage in diverse livelihood activities and also to meet their household needs.

The result is consistent with Babatunde and Qaim (2009) who also reported high monthly income among rural households. Table 1 further presents the educational background of the respondents' it reveals that 48.8% had no formal education, 35.7% had primary education and 14.7% and 0.8% had secondary and tertiary education respectively. The result shows that half of the respondents were illiterate. A high level of literacy can encourage livelihood diversification among rural women. Table 1 also reveals the primary occupation of the respondents, 72.1% of the respondents were farmers, 27.1% and 0.8% were traders and civil servants respectively. The result shows that the majority of the rural women were predominantly farmers. The result is in consonance with Fabusoro *et al.* (2010) who reported that a larger percentage of rural dwellers in southwest Nigeria were farmers. This also implies that rural women were involved in both agricultural and non-agricultural activities to meet their livelihood needs.

Table 1: Distribution of respondents by socio-economic characteristics

Variables	Frequency	Percentage	Mean	SD
Age (years)				
31-40	25	19.4		
41-50	42	32.6		
51-60	46	35.7	50.0	9.2
>60	16	12.4		
Marital status				
Married	94	72.9		
Widowed	35	27.1		
Household size				
2-5	50	38.8		
5-7	67	51.9	5.2	1.9
>7	12	9.3		
Monthly income				
50,000-100,000	39	30.2		
100,001-150,000	63	48.8	129,077.52	45,181.7
>150,000	27	20.9		
Educational background				
Non formal		48.8		
Primary		35.7		
Secondary		14.7		
Tertiary		0.8		
Primary occupation				
Farming		72.1		
Trading		27.1		
Civil servant		0.8		

Source: Field survey, 2023

Reasons for livelihood diversification

Table 2 reveals that the major reasons why the respondents diversify were for food security ($\bar{x}$ = 1.97), to increase income ($\bar{x}$ = 1.98), to cope with insufficiency ($\bar{x}$ = 1.96), seasonality of agricultural products ($\bar{x}$ = 1.94) and to compensate for failure in credit facilities ($\bar{x}$ = 1.93). This implies that the respondents diversified their livelihood activities to be food secured and also to have a stable income. It further reveals that the respondents diversified to manage with insufficiency and because of the seasonality of some agricultural produce. This shows that rural women diversified their livelihood during off season of some agricultural produce.

The other reasons for livelihood diversification were; for asset improvement ($\bar{x}$ =1.54), to build on complementaries ($\bar{x}$ =1.49), spreading of risk ($\bar{x}$ =1.43), to acquire skills ($\bar{x}$ =1.34) and due to natural disaster ($\bar{x}$ =1.33). This implies that the rural women see the above reasons as being minor for their diversification of livelihood activities.

Distribution of respondents by severity of reasons

The result of the analysis in Table 3 shows that 50.4% of the respondents had minor reasons for livelihood diversification while 49.6% had high reasons for livelihood diversification. This shows a slight difference in their reason for diversifying their livelihoods. It also implies that the respondent's severities of reasons are to secure food and to have a stable income.

Income flow from diversified livelihood activities

The analysis of results in Table 4 shows the annual income flow, income adequacy and income stability of livelihood activities. For crop production, 34.4% and 20.3% of the respondents had their annual income flow ranging from ₦110,001 – ₦160,000 and ₦60,001 – ₦110,000 respectively while 1.6% had their income flow above ₦210, 000. The mean actual income from crop production was ₦120,907.61. Most (66.7%) of the respondents had their income to be adequate, 1.6% very adequate and 31.8% had inadequate income. Based on income stability, 58.9% of the respondents had their income to be stable, 0.8% as very stable and 10.1% as not stable. The mean income adequacy and stability were 1.99 and 1.87 respectively. This implies the respondents income flow from crop production was high, adequate and stable.

For crop processing, 16.2%, 9.3% and 2.4% of the respondents had their annual income flow ranges from ₦60,001 – ₦110,000, ₦10,000 - ₦60,000 and ₦110, 001 – ₦160, 000 respectively. Only a few (0.8%) had their income flow to be above ₦160,000. The mean actual income was ₦76,891. Based on income adequacy, 66.7% of the respondents had their income to be adequate, 1.6% as very adequate and 2.3% as not adequate. For income stability, 19.4% had stable income and 10.1% as not stable. The mean income adequacy and stability were 1.78 and 1.66 respectively. This implies that respondents income from crop processing was high and adequate but not very stable.

For trading, the result reveals that 16.0%, 9.9% and 8.6% of the rural women had their annual income flow ranging from ₦60,001 – ₦110,000, ₦110,001 – ₦160,000 and ₦10,000 – ₦60,000 respectively while only a few (0.8%) had their income flow to be above ₦210, 000. The mean actual income from trading was ₦104,076. Based on income adequacy, 36.4% of the respondents had adequate income, 0.8% as very adequate and 2.3% as not adequate. For income stability, 32.6% of the respondents had stable income, 1.6% as very stable and 5.4% as not stable. The mean income adequacy and stability were 1.96 and 1.90 respectively. This implies the respondents' income flow from trading was high, adequate and stable.

Table 2: Distribution of respondents based on reasons for livelihood diversification

Reasons	High F (%)	Moderate F (%)	Low F (%)	Not a reason F (%)	Mean	Rank
Seasonality	72 (55.8)	46 (35.7)	4 (3.1)	7 (5.4)	1.94	7th
Natural disaster	3 (2.3)	16 (12.4)	24 (18.6)	86 (66.7)	1.33	1st
For asset improvement	8 (6.2)	55 (42.6)	8 (6.2)	58 (45.0)	1.54	5th
To acquire skills	3 (2.4)	16 (12.4)	25 (19.4)	85 (65.9)	1.34	2nd
For food security	121 (93.8)	5 (3.9)	0.0	3 (2.3)	1.97	9th
To increase income	119 (92.2)	8 (6.2)	0.0	2 (1.6)	1.98	10th
To build on complementaries	10 (7.8)	36 (27.9)	18 (14.0)	65 (50.4)	1.49	4th
Spreading of risk	18 (14.0)	19 (14.7)	19 (14.7)	73 (56.6)	1.43	3rd
To cope with insufficiency	108 (83.7)	17 (13.2)	0.0	4 (3.1)	1.96	8th
To compensate for failure in credit facilities	114 (88.4)	6 (4.7)	0.0	9 (7.0)	1.93	6th
Grand mean					1.69	

Source: Field survey, 2023

Table 3: Distribution of respondents by severity of reasons

Reasons severity	Frequency	Percentage	Mean	SD	Minimum	Maximum
Low	65	50.4	17.6	4.2	3.0	26.0
High	64	49.6				

Source: Field survey, 2019

Table 4: Distribution of respondents based on respondents income flow

Livelihood activities	Frequency	Percentage	Mean	SD
		Crop production		
Actual income (₦)				
10,000-60,000	11	8.7	120,907.61	46590.9
60,001-110,000	26	20.3		
110,001-160,000	44	34.4		
160.001-210,000	11	7.0		
>210,000	2	1.6		
Income adequacy				
Not adequate	34	31.8	1.99	0.24
Adequate	86	66.7		
Very adequate	2	1.6		
Income stability				
Not stable	13	10.1	1.87	0.37
Stable		76	58.9	
Very stable	1	0.8		
		Crop processing		
Actual income (₦)				
10,000-60,000	12	9.3	76891.89	32920.60
60,001-110,000	21	16.2		
110,001-160,000	3	2.4		
>160,000		1	0.8	
Income adequacy				
Not adequate	3	2.3	1.78	0.41
Adequate	86	66.7		
Very adequate	2	1.6		
Income stability				
Not stable	13	10.1	1.66	0.48
Stable	25	19.4		
Very stable	0	0		
		Trading		
Actual income (₦)				
10,000-60,000	12	8.6	104,076.92	50711.35
60,001-110,000	20	16.0		
110,001-160,000	14	9.9		
160.001-210,000	5	4.0		
>210,000	1	0.8		
Income adequacy				
Not adequate	3	2.3	1.96	0.28
Adequate	47	36.4		
Very adequate	1	0.8		
Income stability				
Not stable	7	5.4	1.90	0.41
Stable	42	32.6		
Very stable	2	1.6		
		Grinding		
Actual income (₦)				
5,000-10,000	4	3.2	11428.57	7480.13
10,001-15,000	2	1.6		
15,001-20,000	0	0		
>20,000	1	0.8		
Income adequacy				
Not adequate	1	0.8	1.86	0.38
Adequate	6	4.7		
Very adequate	0	0		

(Contd...)

Table 4: *(Continued)*

Livelihood activities	Frequency	Percentage	Mean	SD
		Grinding		
Income stability				
Not stable	2	1.6	1.71	0.48
Stable	5		3.9	
Very stable	0	0		

Source: Field survey, 2023

For grinding, 3.2% and 1.6% of the respondents had their income flow ranging from ₦5,000-₦10,000 and ₦15,001 and ₦20,000 respectively. Only a few (0.8%) had their income flow to be above ₦20,000. The mean actual income was ₦11.428.57. Based on income adequacy, 4.7% of the respondents had their income to be adequate and 0.8% as not adequate. For income stability, 3.9% had their income stable and 1.6% as not stable. The mean income adequacy and stability were 1.86 and 1.71 respectively. This implies that respondents' income from grinding was very low, adequate and stable. Low income from grinding may be the reason why rural women do not diversify into the enterprise.

The income flow from crop production and trading was very high while the income flow from grinding was low. Also from the diversified livelihood activities, the majority of the respondents had their income to be adequate and stable. This implies that the majority of the respondents diversified into crop production and trading as a result of the high income flow obtained from it. It may also imply that rural women diversified their activities to have their income to be adequate and stable.

Respondents level of income, adequacy and stability

Table 5 reveals that 62% of the respondents had a low level of monthly income and 38.0% had a high level of income. The result implies that rural women's level of income was very low due to limitations faced during livelihood diversification. The table also reveals that 63.6% of the respondents had a low level of income adequacy and stability while 36.4% had a high level of adequacy and stability of monthly income. This implies that the rural women had a low level of income adequacy and stability per month. This means that the monthly income of rural women was not adequate and stable. The result further implies that some of the livelihood activities in which rural women diversify do not generate a stable and adequate income.

Respondents' expenditure flow

Analysis of the results of respondents expenditure flow in Table 6 show that the majority (93.6%) of the rural women spent within ₦300 – ₦12,000 daily, 3.2% spent within ₦500 – ₦15000 weekly and 3.2% also spent within ₦12, 000 – ₦300,000 per month for feeding. The mean for expenses made on feeding monthly was ₦33,179.69. On agricultural production, 45.0% of the rural women spent within ₦1500 – ₦20,000 monthly and 2.3% spent within ₦2000 – ₦5000 daily while the mean for expenses made on agricultural production was ₦12,430.77. For transportation, 78.3% of the respondents spent within ₦100 – ₦1000 daily, 4.7% spent within ₦200 – ₦5000 weekly and 10.9% spent within ₦300 – ₦20,000 monthly. The mean expenses made on transportation were ₦10,461.16. Also on contribution, 65.1% spent within ₦100 – ₦5000 daily, 24.8% spent within ₦500 – ₦5000 weekly and 7.0% spent within ₦200 – ₦10,000 monthly, while the mean was ₦25, 901.60.

Table 5: Distribution of respondent by their level of monthly income, adequacy and stability

Variables	Frequency	Percentage	Mean	SD
Income level				
Low	80	62.0	150856.59	80230.75
High	49	38.0		
Adequacy level				
Low	82	63.6	2.80	1.31
High	47	36.4		
Stability level				
Low	82	63.6	2.64	1.28
High	47	36.4		

Source: Field survey, 2023

For other expenses, 10.1% spent within ₦500 – ₦2000 monthly on shelter, 85.7% spent within ₦2000 – ₦100,000 monthly on children's needs, 31.0% spent within ₦300 – ₦15,000 monthly on health, 65.9% spent within ₦1000 – ₦45,000 on agricultural input and 97.7% spent within ₦1500 – ₦80,000 monthly on clothing needs. The mean monthly expenses on shelter, children needs, health, agricultural input and clothing needs were ₦1115.38, ₦56,942.74, ₦3909.76, ₦6909.30 and ₦8801.59 respectively. This result implies that the expenses made by rural women are more than their income. The rural women had more to spend on feeding, children's needs and even on agricultural production which is likely to affect their economic security.

From all the expenses made, results shows that expenses made on children's needs, feeding, agricultural production and contribution were high. This means that rural women spend much on meeting the children's needs, providing food for the family and also on contributions. The least expenses made were on shelter and health; it shows that rural women do not spend much on health and shelter which may be because the husband made provision for shelter and that rural women depend more on indigenous health care.

Respondents level of expenditure flow

Results in Table 7 reveal that 58.9% of the respondents had a low level of expenditure flow and 41.1% had a high

Table 6: Distribution of respondents' by expenditure flow

Probable expense made (₦)	Frequency	Percentage	Mean	SD
		Feeding		
Daily				
300-12,000	120	93.6		
Weekly				
500-15,000	4	3.2		
Monthly			33179.69	32807.82
12,000-300,000	4	3.2		
		Agricultural production		
Daily				
2000-5000	3	2.3		
Monthly				
1500-20,000	59	45.0	12430.77	20931.79
>20000	3	2.3		
		Transportation		
Daily				
100-1000	101	78.3		
Weekly				
200-5000	6	4.7		
Monthly				
300-20000	14	10.9	10461.16	6289.56
		Shelter		
Monthly				
500-2000	13	10.1	1115.38	416.03
		Contribution		
Daily				
100-5000	84	65.1		
Weekly				
500-5000	32	24.8		
Monthly				
200-10000	9	7.0	25901.60	27005.29
Children needs				
2000-100000	111	85.7	56942.74	43392.09
>100,000	13	10.4		
Health				
300-15,000	40	31.0	3909.76	3794.26
Agricultural input				
1000-45,000	85	65.9	6909.30	14800.05
Clothing needs				
1500-80,000	126	97.7	8801.59	9598.35
Others				
500-8000	6	4.7	3416.67	3040.01

Source: Field survey, 2023

level of expenditure flow. The result implies that rural women level of expenditure flow was low due to instability and inadequacy of income which could not allow them to have desired savings, thereby affecting their Economic security.

Economic security

The result in Table 8 reveals that 51.2% of the respondents were not economically secured, 32.6% were fairly secured economically and 16.3% were highly secured economically. This implies that the rural women were not economically secured which may be because of the limitations faced in diversifying their livelihood activities. Therefore, the low level of income, inadequacy of income, and instability of income

Table 7: Distribution of respondents by their level of expenditure flow

Reasons severity	Frequency	Percentage	Mean	SD
Low	76	58.9	165057.36	102148.22
High	53	41.1		

Source: Field survey. 2023

Table 8: Distribution of respondents by their economic security status

Limitation severity	Frequency	Percentage	Mean	SD
Economically not secured	66	51.2	17.54	3.67
Fairly economically secured	42	36.6		
Highly economically secured	21	16.3		

Source: Field survey, 2023

Table 9: Correlation between respondents' socio-economic characteristics and economic security

Variables	Value	P-value	Decision
Age	-0.100	0.437	NS
Monthly income from primary occupation	0.540	0.000	S
Household size	-0.028	0.829	NS

Where S=significant, NS=Not significant, Source: Field survey, 2023

Table 10: Contribution of respondents' livelihood diversification to economic security

Variables	B	T	P-value	Decision
Crop farming	0.227	1.658	0.103	NS
Garri processing	-0.093	-0.631	0.530	NS
Palm oil processing	0.238	1.573	0.121	NS
Hair dressing	-0.101	-0.872	0.387	NS
Hawking	0.226	1.708	0.093	NS
Trading	0.359	2.402	0.020*	s
Shoe making/repairs	0.148	1.235	0.222	NS
Grinding	-0.191	-1.530	0.129	NS
R^2=0.304				
Adjusted R^2=0.201				
F-ratio=2.951				
F-proportion=0.008				

Source: Field survey, 2023

have contributed to rural women not being economically secured.

Correlation between respondents' socio-economic characteristics and economic security

The result of the analysis in Table 9 shows that monthly income from primary occupation (r^2=0.540, p= 0.000) was significantly related to economic security. This implies that monthly income from primary occupation influences the rural people's economic security. This result is also consistent with the claim of Gordon and Craig (2001) and Babatunde and Qaim (2009) that income at the disposal of rural households can go a long way in increasing financial capability to engage in various livelihood activities to improve their living conditions. Therefore income from other sources can be a driving force for livelihood diversification. Table 9 further shows that there is no significant relationship between age (r2 -0.100, p = 0.437), household size (r2 -0.028, p = 0.829) and economic security. This implies that age and household size do not affect the economic security of rural women. This further means that the age or the household size of rural women does not influence their economic security because either being young or old does not guarantee one to be economically secured.

Contribution of livelihood diversification to economic security

The result of the analysis in Table 10 reveals that trading (β=0.359, p=0.020) positively contributed to the economic security of rural women. This implies that trading is found to contribute to the economic security of rural women. This means that the income from trading also helps contribute more to economic security which may be as a result that income flow from trading can be gotten daily.

CONCLUSION AND RECOMMENDATION

It is therefore concluded that livelihood diversification influences the economic security of the rural women and diversification to trading contributed significantly to their economic security. Provision of good roads and accessibility to loans at reduced interest rates are recommended to improve rural women's economic security in Osun State, Nigeria.

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