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**ASSESSMENT OF OFF AND ON-FARM INCOME  
DIVERSIFICATION FOR SUSTAINABLE LIVELIHOODS  
AMONGS THE RURAL WOMEN DWELLERS IN MOKWA  
LOCAL GOVERNMENT AREA OF NIGER STATE, NIGERIA.**

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**ABSTRACT**

*The study was on Assessment of Off and On-Farm Income Diversification for Sustainable Livelihoods amongs the Rural Women Dwellers in Mokwa Local Government area of Niger State, Nigeria. Multi-stage sampling technique was used to select 187 of rural women. Data were collected using structured questionnaire and interview scheduled; and analyzed using descriptive statistics (percentage and frequency), Livelihoods status index and Ordered Logit regression Model. The result of Demographic characteristics revealed that age (62.5%) and (35.5%) of the respondents had age of 21-30 years and 31-40 years respectively. The mean age of the respondents was 35 years, the result of marital status also indicated that 66.1% of the respondents were married while 29.9% and 4% were single and widowed respectively. That 66.0% of the respondents had between 6-10 persons while 31 % had 11-15 person while 3% <6 persons. The mean household size of the*

respondents was 8.5 persons, 67.2% of the respondents had one forms of formal education and the other, 32.8% of the respondents had non-formal education. Also more than half (62.0%) of the respondents had monthly income between ₦35,000–₦45,000 while 38.% had income of between ₦50,000 – ₦60,000. The mean monthly income of the respondents was ₦41309.02, indicating that majority of the rural women in the study area had monthly income that is above recommended minimum wage in Nigeria, 84.1% of the respondents had moderate livelihood while 12.5% had low livelihood. Also, only (3.4%) of the respondents had high livelihood. The result of ordered logit shows that coefficient of marital status on off and on-farm income (0.3439431) was positively significant at 10% level of probability, also the coefficient of education (0.1015516) was positively significant at 10% level of probability, implying that attainment of more formal education could expose rural women new ways of strategizing on how to improve their livelihood. It was recommended that rural women should diversify into other viable income generating activities in order to increase their livelihood status and Government policy that will create a suitable atmosphere for rural women to market their business should be implemented.

**Keywords:** Assessment, off and on-farm income, Livelihoods, Diversification, Rural women, Dwellers.

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## **BACKGROUND OF THE STUDY**

Agriculture share GDP of 55.% in 2019 (Adewale, 2020). According to the Labor Force Survey for 2019, the agricultural sector employs 67million persons. 41.6% of the total labor force (Ashiru, 2019). Rural areas (80%) lag behind in terms of socio-economic development and still face many problems. Around 61% of the country total population can be classified as rural. Agriculture provides a source of income for about 58% of the total population of the country. The Agro-food processing industry is recovering following a decade of under-investment and its share in GDP is increasing (about11%) (Ndanitsa et al., 2019).Despite its declining

gross value added, agriculture continues to have an important influence on the rural economy (Olugbaga, 2019). Generally speaking, as an economy grows the non-farm economy also grows in importance within the rural economy Mohammed et.al, (2019). It is clear that nowadays agriculture is not sufficient to insure the sustainable development of rural areas due to insecurity, that's why rural economy should be diversified (Amale et al., 2019).. Farming households in developing nations receive quite reasonable proportion of their incomes from off and on-agricultural employment and off and on-farm income, is income earned from non-agricultural sources either in wage-employment or self-employment (Mohammed *et al.*, 2019).

According to (Bola *et al.* 2019). Non-agricultural income constitutes 40 - 45 per cent of farming household income across the developing world. Literature revealed two main factors that drive diversification into off and on-farm activities among farm households in developing countries. These factors are broadly classified into "pull factors" and "push factors". Reasons why a farm household can be pulled into the off and on-farm sector include higher returns to labour and or capital; and the less risky nature of investment in the off and on-farm sector (Kunle *et al.*, 2019). The push factors that may drive off-farm income diversification includes the need to increase family income when farm income alone cannot provide sufficient livelihood (Nawoji *et al.*, 2018). The desire to manage agricultural production and mark risks in the face of a missing insurance market (Nawoji *et al.*, 2018) and the need to earn income to finance farm investment in the absence of a functioning credit market (Nawoji *et al.*, 2018).. Livelihood diversification can occur in two ways, that is, either out of necessity or by choice (Mohammed, 2019). Diversification out of necessity refers to conditions in which the income from the household's farm production is not enough to sustain an acceptable standard of living, while Diversification by choice refers to voluntary reasons for diversification, which always connected to the desire for higher returns from off-farm activities. However, according to (Mohammed, 2019), having different income sources can also be considered a risk-coping

strategy because diversified households are less vulnerable to economic shocks than undiversified households. It is important to note that different income-generating activities cannot be viewed partly, as they are linked through investment, production and consumption. The increasing detachment of women and children from men's income has led to an upsurge in the involvement of rural women into livelihood activities (Adewale, 2020). Thus the emerging trend is such that some men cannot provide for their families sufficiently, therefore, their wives have to engage in livelihood activities such as hair plating, crop production/processing, animal rearing, poultry keeping among petty trading, weaving of mats and baskets for the family sustenance (Adewale, 2020). The term "Sustainable Livelihood" is used here to refer to a livelihood that can cope with and recover from stresses and shocks, maintain or enhance its capabilities and assets both now and in the future, while not undermining the natural resource base. Diversification is defined as the process by which rural households construct increasingly diverse livelihood portfolios, making use of increasingly diverse combinations of resources and assets in order to meet their basic needs, improve their living standards or welfare, and manage risk. This study therefore accesses off and on-farm income diversification for sustainable livelihoods amongs the rural women dwellers in Mokwa Local Government area of Niger state. The objectives of this study are to:

1. describe the socio economic characteristics of rural women in the study area;
2. determine the livelihood status of rural women in the study area; and
3. accesses the effects of off and on-farm income diversification strategies on the livelihood status.

## **MATERIALS AND METHODS**

Mokwa Local Government Area of Niger State is located in Agricultural Zone I, its headquarter is in the town of Mokwa. It has an area of 7,038 square kilometers (2,897 sq mi) and a projected population of 468,312 as

at 2020. (Niger State Bureau of Statistics 2020). About 75% of its land area is good for arable crops production (Niger State Geographical Information System, 2020). It is located within Latitudes 7– 9°N and Longitudes 5 – 8°E) and with a growth rate of 3.1%. Mokwa Local Government experiences two distinct season dry and wet seasons with annual rainfall varying from 1,100mm in the Northern part to 1,600mm in the Southern parts. The average annual rainfall is about 1,400mm. The duration of the rainy season is approximately 180 days. The wet season usually begins in April/May to October, while the dry season starts from November to March. The maximum temperature of 30°C, average temperature of 23°C and minimum temperature of 25°C. The mean average temperature is around 32°C. Dry season commences in October (Niger State Geographical Information System, 2020). Most of the communities in the Local are predominantly agrarian. Cereals crops grown such as Guinea corn, Millets Tuber crops grown such as yam and cocoa yam, vegetables grown in the Local Government are, Spinach, Pumpkin, bitter leaf and water leaf leave. Tree crops grown are mango, citrus, coconut, cashew, banana and pawpaw. Other non-agricultural activities engaged by the people include blacksmithing, leatherwork, mat and basket making and trading. Women on the other hand engaged in technical handicraft and trading.

### **Sampling Procedure and Sample Size**

Multi-stage sampling technique was used for the study. The first stage involved random selection of Agricultural zones I in the State. At the second stage, involved random selection of six (8) communities from the Local Government Areas (LGA). At the third stage, 15% of the farmers were randomly selected from the sampling frame of each community. In all, a total of 187 respondents were selected from the LGA as the sample size for the study.

Table 1: Sample distribution of the respondents in the study area

<i>Communities</i>	Sample frame	Sample size (10%)
<i>Mokwa</i>	152	22.8

<i>Tatabu</i>	53	7,95
<i>Kudu</i>	81	12,1
<i>Tyabo</i>	66	9.9
<i>Gbajibo</i>	81	12.15
<i>Kaniye</i>	89	13.35
<i>Gbara</i>	79	11,85
<i>Wuya</i>	66	9.9
<i>Total</i>	667	100

**Sources: Field survey, 2020**

### **Method of Data collection and Analytical Techniques**

Primary data was used for the study, the data were collected by researchers and trained enumerators using structured questionnaire complimented with interview schedule. The data obtained from objective I was analyzed using descriptive statistics such as (frequency distribution, percentage mean) objective II was achieved using Livelihood Status Index (LSI) adopted from Mohammed et.al, (2019) in a research title effects of forests resources utilization on livelihoods of rural populace in Kogi and Niger state, Nigeria. The livelihood indicators that were considered for respondent include household assets, production assets and livestock assets which were measured in terms of numbers and monetary value (Naira). Therefore the livelihood status were categorized as  $\leq 0.25$  = Very low,  $0.26 - 0.49$  = Low,  $0.50 - 0.75$  = Moderate, and  $> 0.80$  = High livelihood. while, objective III was achieved using Ordered Logit regression Model.

## **RESULTS AND DISCUSSIONS**

### **Socio-economic Characteristics of Respondents**

The socioeconomic characteristics of the rural women under consideration include age, marital status, household size, educational level, and monthly income

Table 2, reported that age (62.5%) and (35.5%) of the respondents had age of 21-30 years and 31-40 years respectively. The mean age of the

respondents was 35 years. This finding suggests that rural women in the study area were still within their active and productive age where diversifying into various off and on-farm income is of high paramount to enhance their livelihood. This finding is in line with that Adamu and Sunday (2019) who reported that 39 years are the mean age for rural women that diversified in off and on farm activities in Northern parts of Nigeria.( Adewale, 2020). Also reported that majority of women in South west of Nigeria that diversified into off and on-farm activities are of middle age and active in their respective occupations. Marital status Table 2 also indicated that 66.1% of the respondents were married while 29.9% and 4% were single and widowed respectively. This implies that most of the respondents in the study area were married. Marriage involves some kind of responsibilities on the family whereby rural women are implored to diversify into off and on-farm income generation for improving livelihoods and enhanced standard of living. .This finding concurs with Babaje *et al.* (2019) who reported that majority of rural households in Nigeria are married. Table 2 also showed that 66.0% of the respondents had between 6-10 persons while 31 % had 11-15 person while 3% <6 persons. The mean household size of the respondents was 8.5 persons, implying that rural women in the study area were of large household size. It is generally believed that large household size is an advantage in the farming households in terms of its effect on household labour force that will assist in sourcing for off and on-farm income in order to improve their livelihood. It equally agrees with earlier findings of Babaje *et al.* (2019) who stated that a household size of 8 persons for small holder rice farmers in Rabba Local Government area of Sokoto State have positive effects to increase in income of diversify rice processing to improved their livelihoods. Table 2, also revealed that 67.2% of the respondents had one forms of formal education and the other. On the other hand, 32.8% of the respondents had non-formal education. This finding shows that more than half of the rural women in the study area had formal education and this may influence decision to apply different strategies of off and on-farm income that will improve their livelihood. This finding agrees with Yusuf

*et al.* (2019) who reported that level of formal education among the rural dwellers in Nigeria influence their decision to apply positive strategies on diversifying sources of income so as to improve their livelihoods. Table 2 showed that more than half (62.0%) of the respondents had monthly income between ₦35,000–₦45,000 while 38.% had income of between ₦50,000 – ₦60,000. The mean monthly income of the respondents was ₦41309.02, indicating that majority of the rural women in the study area had monthly income that is above recommended minimum wage in Nigeria. This finding is in agreement with Mohammed *et.al*, (2019) who reported that increase in income of rural household had tendency of improving their livelihood.

**Table 2: Distribution of respondents according to socio-economic characteristics (n=187)**

<i>Variables</i>	Frequency	Percentage	Mean
<b><i>Age</i></b>			
<21	14	2.0	35
21 – 30	415	62.5	
31 – 40	235	35.5	
<b><i>Marital status</i></b>			
Married	443	66.1	
Single	198	29.9	
Widowed	28	4.0	
<b><i>Household size</i></b>			
< 6	17	3	8.5
6 – 10	444	66	
11 – 15	207	31	
<b><i>Educational level</i></b>			
Non Formal	211	32.8	
Primary	369	57.2	
Secondary	47	6.0	
Tertiary	28	4.0	



<i>Monthly income</i>			
25,001 - 30,000	51	7.0	4125.00
35,001 - 40,000	413	62.0	
45,001 - 50,000	178	28	
> 60,000	17	3.0	

Sources: Field survey, 2020

### Livelihood status of rural women

Table 3 showed that 84.1% of the respondents had moderate livelihood while 12.5% had low livelihood. Also, only (3.4%) of the respondents had high livelihood. This finding agreed that majority of the respondents had moderate livelihood. Moderate and high livelihood among rural women in the study area is a strong indication of improved livelihood from off and on-farm income strategies in the study area. This finding contradicts with that of Ifeanyi-obi and Mathews-Njoku (2018) who revealed that majorities of farmers in South East of Nigeria had high livelihood. The study now agreed Afeez *et al.* (2019) revealed that most of the rural women farmers in Oyo State, Nigeria, had moderate livelihood

Table 3: Distribution of the respondents based on their livelihood status (n=187)

<i>Status</i>	Frequency	Percentages
<i>Very low</i>	0	0.0
<i>Low</i>	6	3.4
<i>Moderate</i>	164	84.1
<i>High</i>	17	12.5
<i>Total</i>	<b>187</b>	<b>100.0</b>
<i>Mean Livelihood Index</i>	<b>0.462</b>	
<i>Minimum Livelihood Index</i>	<b>0.273</b>	
<i>Maximum Livelihood Index</i>	<b>0.717</b>	

Source: Field Survey, 2021

Note: Livelihood index is classified as  $\leq 0.25$  = very Low,  $0.26 - 0.49$  = low Moderate,  $0.50 - 0.75$  = moderate  $> 0.80$  = High.

### **Accesses effects of off and on-farm income diversification on the livelihood status of rural women**

Table 4. Showed the effects of off and on-farm income diversification on the livelihood status of rural women. The coefficient of marital status on off and on-farm income (0.3439431) was positively significant at 10% level of probability, signifying that the respondents who are married has family responsibility to carter for family needs, this mighty push then to involved on off and on- farm income which will improve the livelihood of rural women in the study area. This finding agreed with Babaji, et.al (2019) who posited that marital status determined level of involvement in any agricultural and economic activities in rural Nigeria. The coefficient of education (0.1015516) was positively significant at 10% level of probability, implying that attainment of more formal education could expose rural women new ways of strategizing on how to improve their livelihood. This is not surprising, as education facilitates access to a number of different economic activities, either as a formal requirement for wage earning jobs or because it helps setting up and managing own small businesses Babaji, et.al (2019) The coefficient of mat weaving (0.000212) was positively significant at 5% level of probability. This indicates more engagement in mat weaving by rural women will increase their livelihood. This could be as a result of profits involved in the making of mats. This finding is in agreement with that of Ayodele *et al.* (2019) who reported engaging in off and on-farm income generating activities are incentives to improved livelihood in Osun State, Nigeria. The coefficient of sewing/ tailoring (0.0002211) was positively significant at 1% level of probability, indicating that increase in sewing/tailoring will definitely increase the livelihood of women in the study area The coefficient of petty trading (0.0001975) and food vendor (0.0003129) were both significant at 1% level of probability, signifying that engaging in food vendor and petty trading will improved rural women livelihoods in the study area. This finding is in line with that of Ayodele *et al.* (2019) who posits that off and on-farm activities such as petty trading, food vendor and

sewing/tailoring are the major off and on-farm income sources of livelihood for farmers in Southwestern of Nigeria. The coefficient of hair dressing 0.0001885 was significant at 5% level of probability. This shows that more engagement in hair dressing will add more income to rural women and also improve their livelihood. The coefficient of domestic work (0.0002629) was positively significant at 5% level of probability, implying that increase in women participation in domestic work will reduce their amount they spend in hiring domestic works and also improve their ;livelihood.

**Table 4: Distribution of respondents according to effects of off and on-farm income diversification on the livelihood status of rural women (n=187)**

<i>Variables</i>	<b>Coefficient</b>	<b>Z-value</b>	<b>Marginal Effect</b>		
			<b>Y=0</b>	<b>Y=1</b>	<b>Y=2</b>
<i>Age</i>	0.1997546	1.41	-1.35	1.35	0.98
<i>Household size</i>	0.0223074	0.12	-0.12	0.12	0.12
<i>Marital status</i>	0.3439431	1.97*	1.76*	1.75*	-1.14
<i>Education level</i>	0.1015516	1.78*	1.74*	1.72*	-1.14
<i>Income</i>	-.0000173	-0.39	0.38	-0.38	-0.37
<i>Sewing tailoring</i>	0.0002211	2.95***	2.57***	2.47**	1.37
<i>Black smiting</i>	0.0003467	1.43	-1.52	1.52	1.05
<i>Petty trading</i>	0.0001975	3.00***	2.59***	2.51***	1.33
<i>Food vendor</i>	0.0003129	3.81***	3.20***	2.94***	1.52
<i>Knitting</i>	-0.0003476	-0.79	0.78	-0.77	-0.73
<i>Hair dressing</i>	0.0001885	2.28**	2.15**	2.10**	1.27
<i>Charcoal production</i>	-0.0000869	-0.94	0.93	-0.93	-0.78
<i>Domestic work</i>	0.0002629	2.78***	2.52**	2.42**	1.36
<i>Pseudo R2</i>	0.3515				
<i>Chi2</i>	75.96***				
<i>Log likelihood</i>	-70.06068				

Sources: Field survey, 2020

## **Conclusion and Recommendation**

Based on the findings, it can be concluded that rural women in the study area were in their active and productive age and married. Also, majority of the women had large household. Most of the respondents had formal education, charcoal production, food vendor and petty trading were the major sources of off and on-farm income in the study area. More so, majority of the respondents had moderate livelihoods. The coefficient of educational level, marital status, sewing tailoring, petty trading, food vendor, hair dressing and domestic work had significant effect on the livelihood of rural women.

## **Recommendations**

1. Rural women should diversify into other viable income generating activities in order to increase their livelihood status
2. Older rural women must be fully involved in diversification strategies in the study area.
3. Government policy that will create a suitable atmosphere for rural women to market their business should be implemented
4. Individual rural women should be supported by government, NGO and women groups with productive inputs in the study area

## **References.**

- Adewale, R.O. (2020). Patterns of income diversification in rural Nigeria: Determinants and Impacts, *Quarterly Journal of International Agriculture* 48 (4), 305-320
- Ashiru, D. (2019). Rural livelihood diversification in west Bengal: Determinants and constraints. *Agricultural Economics Research Review*, 25(1), 115-124.
- Ayodele, J.O., Afolami, C.A., Obayelu, A.E. and Ladebo, O.J. (2019). Social Capital and Access to Credit among Cassava Farming Households in Ogun State, Nigeria. *Journal of Agriculture and Environmental Sciences*, 3(2), 175-196.
- Adamu A. B., and Sunday B. (2019). Determinants of non-farm livelihood diversification: evidence from rainfed-dependent smallholder farmers in north central Ethiopia (Woleka sub-basin), *Development Studies Research*, 4 (1), 22-36
- Amale, U. E., & Omole O. O. (2019). Evaluating the Impacts of Rural-Urban Migration on Agricultural Productivity in Akoko South West Local Government

- area of Ondo State, South Western Nigeria. *International Journal of Social Science and Economic Research*, 2 (5), 1-15
- Afeez, B.A., Adebola, S.D., Olufunmilola, A & Abiodun, O.O. (2019). Determinants of rural women livelihood in Ibarapa North Local Government Area of Oyo State, *Journal of human and ecology*, 56, 1-2.
- Babajee, M.N., & Jacobs, P.T. (2019). The contribution of subsistence farming to food security in South Africa, *Agrekon* 48 (4), 459-482
- Bola, E.C., Chidebelu, S.A.N.D. and Nweze, N.J. (2019). An Evaluation of Off-farm Work and Household Income among Small-scale Farmers in North Central Nigeria. *Journal of Agriculture and Sustainability*, 7(2), 227-244.
- Ifeanyi-obi, C.C., & Mathews-Njoku, E.C (2018). Socio-economic factors affecting choice of livelihood activities among rural dwellers in Southeast Nigeria, *Journal of agriculture and veterinary science*, 1,52-56
- Kunle, D. and Roy, B.C. (2019). Rural livelihood diversification in west Bengal: Determinants and constraints. *Agricultural Economics Research Review*, 25(1), 115-124.
- Mohammed, U., Umar, I. S., Saliu, I. T., Tsado, J. H and Pelemo, J. J., (2019). Analysis of Livelihood Benefits Derived from Forest Resources Utilization among Farming Populace in Kogi and Niger States, Nigeria, *Journal of Agripreneurship and Sustainable Development*, 3 (3), 47-50
- Ndanitsa. A.M. Sallawu, H., L. Tanko, and J. N. Nmadu, (2019).“ Determinants of Income Diversification among FarmHouseholds in Niger State, Nigeria.” *Russian Journal of Agricultural and Socio-Economic Sciences* 2 (50), 55 – 65.
- Niger State Geographical Information System. (2020). Background information. Retrieved from [www.nigersis.com/about-niger-state](http://www.nigersis.com/about-niger-state). Accessed on 13/05/2020
- Niger State Bureau of Statistics Yearly Bulletin (2020)
- Nawoje, J. C., and Ekumankama, O. O. (2018). Economics of Resource Use by Women Arable Crop Farms in Abia State. Research Report Submitted to the Senate Grant Committee, Michael Okpara University of Agriculture, Umudike, December 40p
- Olugbenga, C. O. (2019). Bridging Agricultural gap and enhancing food production for sustainable production. *Journal of Agricultural and Food Sciences* 1(3), 7-9.
- Yusuf, E.C., Chidebelu, S.A.N.D. and Nweze, N.J. (2019). An Evaluation of Off-farm Work and Household Income among Small-scale Farmers in North Central Nigeria. *Journal of Agriculture and Sustainability*, 7(2), 227-244.