

Determinants of Diversification of Livelihood Activities among Rural Women in Bade Local Government Area of Yobe State, Nigeria

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Abstract

The study examined rural women's livelihood activities and contribution to household income in Bade Local Government Area of Yobe State, Nigeria. Primary data used for the study was obtained through the use of structured questionnaires and interview schedules. A proportionate and random selection procedure was used to select 150 respondents. The analytical tools used were descriptive statistics and inferential (Logistic regression) statistics. The study revealed that majority (84%) of the respondents diversified their livelihood activities; while the remaining 16% indicated that they did not diversify at all. The Binary logit model revealed that; age, household size, educational level, extension contact and access to credit were positive and significant in influencing the diversification of livelihood activities among respondents. The results further indicated that respondents contribute to household especially; clothing the children, provision of food and at festivities times. The study recommended that promotion of changes in attitude towards women through public debate and enlightenment programme should be pursued with vigor so that rural women can utilize the opportunities of participating in livelihood activities that are available within their locality.

Keywords: Binary logit model, Determinants, Diversification, Livelihood Activities, Women

Introduction:

Participation of rural women in livelihood activities ensures the sustainability of a family, hence leading to economic development of the populace. They contribute to agricultural development and rural enterprises through these activities. 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 (Raufu *et al*: 2012). 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 others for the families' sustenance (Wanyama: 2010).

Kwaghe (1999); Matthews –Njoku and Adesope (2007); Ogunbameru *et al*: (2006) reported that at the farm level, women generate income from agricultural activities such as keeping poultry, animal husbandry, crop processing and as well as trading of agricultural produce in market places others include crop production, petty trading, tailoring, hair plaiting and dressing as well as cooking at accession. Women are in livelihood activity which ranges from farm to off-farm enterprises, earning vital income for themselves and their families, this is done to combat poverty. The pressure on income from a single source sometime cannot sufficiently meet the demand of rural women and children therefore they have to diversify their livelihood activities as way of improving their livelihood, the income that is generated from the activities they engaged in contributes greatly to the family welfare.

Women in Bade Local Government Area (L.G.A) are involved in a wide range of livelihood activities whereby they take advantage of the water body around the town as well as crop and livestock that survive within the geographical location, hence leading to the engagement in wide range of income generation activities. These include animal husbandry, crop processing, weaving of mats and basket, threshing of farm produce.

Olawoye (1994) observed that there is an upsurge of female-headed households in the rural areas of most regions. This is to say that, women's activities in the informal sector enable them effectively combine their productive and reproductive roles because hours of work are flexible, permitting them to care for their children and engage in livelihood activities (Emmanuella: 2009). Informal economic sector is being dominated by women yet are faced with a lot of constraints such as lack of capital, lack of knowledge on marketing, lack of access to land and extension services among others (Raufu *et al*: 2012). Mates (2005) observed that migration of male counterpart, male or husbands being killed are other constraints affecting rural women which make them diversify their livelihood for family sustenance. This study therefore assesses rural women livelihood activities and the contributions they make towards family welfare in Bade L.G.A of Yobe state, Nigeria.

Rural women contributes significantly in agricultural and non agricultural livelihood activities, the reason is to uplift the wellbeing of their families. They are involved in various types of livelihood activities in order to generate additional income for the family sustenance. These livelihood activities vary from one locality to another depending on where the rural women find themselves and the potentials present in the area. Bade L. G. A. of Yobe State is not an exception, women have a lot of opportunities to participate in various livelihood activities ranging from agricultural to non agricultural like; petty trading, food processing/crop processing, crop production, tailoring, hair plaiting, poultry keeping, dairy/making weaving of basket/mat and civil service. Some studies (Ayanwuyi, and Akintonde: 2011, Sunama: 2010) showed that rural women were engaged in livelihood activities for improved household welfare. However, these studies did not recognize the status of diversification in livelihood activities and the factors influencing such diversification implied in the study area. Therefore, this study was designed to investigate the determinants of diversification of livelihood activities among rural women in Bade Local Government area of Yobe State, Nigeria. The specific objectives of the study were to:

- i. describe the socio-economic characteristics of the rural women in the study area;
- ii. identify the status of diversification of livelihood activities of the rural women;
- iii. determine factors influencing diversification of livelihood activities of the rural women;
- iv. examine the rural women contribution to household welfare; and
- v. assess the reasons for diversifying livelihood activities by rural women.

Methodology:

The Study Area

The study was conducted in Bade Local Government Area, Yobe State, Nigeria. The Local Government Area lies between latitudes 11°50' and 12°55' North and longitudes 10°35' and 11°15' East. Bade is located in the North western part of Yobe State. It has a land mass of 5400 square kilometers. The area is bordered to the West by Zaki, Gamawa and Katagum Local Government Areas of Bauchi State and Hadeja Local Government Area, Jigawa State. To the South, the Local Government shares borders with Nangere and Fune Local Government Areas. To the north, it shares borders with Yusufari Local Government and to the East with Bursari Local Government Area (YOSADP: 2009). The National Population Commission, Census report of 2006 gives the population of Bade Local Government as 139,782. Considering the national population commission estimate of the growth rate of 2.8% (NPC: 2006), the local government has projected population of 174,340 in 2014.

The Local Government Area lies predominantly in the semi-arid zone with mean annual rainfall of less than 300mm per annum. The rainfall starts around middle of June and ends around October. Temperatures are high for most part of the year, reaching a maximum of 47°C around April and during the Harmattan months, (November to February) the mean temperature is 32°C. Relative humidity is usually less than 40% during the dry season but goes as high as 85% during the wet season (YOSADP: 2009). The major occupation of the people in the Local Government is farming and fishing. Food crops commonly cultivated include millet, rice, sorghum, wheat, cowpea and sesame. Vegetables are also grown in large quantity which includes tomatoes and pepper. The local government is one of the major livestock producers in the state.

In the Local Government Area, women engaged in a variety of livelihood activities essential to support the development of their family and the Local Government as a whole. They are involved in agricultural activities (food crop processing and livestock production) and non-agricultural activities (tailoring trading, weaving of basket and mats, plaiting, milking and pottery among others).

Sources of Data

Data for this study were obtained from both primary and secondary sources. The primary data was collected from respondents through interview schedules and structured questionnaires. Trained enumerators from Rural Development Centre for Women were used in data collection. Information relating to socio-economic characteristics of rural women, types of livelihood activities was collected, contribution they make to household income, as well as constraints faced by rural women in engaging in livelihood activities.

Sampling Procedure and Sample Size

Multistage sampling procedure was employed in the selection of the respondents. The target population for this study comprised of all women who are engaged in livelihood activities in the study area, from the 10 wards in the Local Government Area. At the first stage five (5) wards were selected in the study area. These include Sabon Gari, Katuzu, Gwio Kura, Usur and Dagona. At the second stage, five (5) streets were selected at random from the five (10) wards making a total of 25 streets. At third stage, simple random sampling technique was employed to select six (6) respondents in each selected streets making a total of one hundred and fifty respondents as sample size used for the study.

Analytical Techniques

Data collected were analyzed using both descriptive and inferential statistics. The descriptive statistical techniques such frequencies, percentages and means were used to analyze objectives (i), (ii), (iv) and (v).

The inferential statistical technique used in this study was logistic regression analysis. The SPSS computer package was used to estimate the logistic regression analysis.

The Binary Logit Model

The Binary Logit (BNL) Model was employed in this study. In this model, the data on the dependent variable (diversification of livelihood activities) is bi-variate, that is, diversified livelihood activities or not diversified. The BNL model was therefore, employed due to the nature of the decision variable. For such a dichotomous outcome, the BNL model is the most appropriate analytical tool (Benedicta *et al*: 2010, Kristof: 2009). The implicit form of the model is expressed as:

$$Y_i = \beta_0 + \sum \beta_i X_i + e \text{ -----(1)}$$

Where:

Y_i = Dependent variable (i.e, the binary variable; $Y_i = 1$ for a household that diversified livelihood activities and $Y_i = 0$ for otherwise.

β_0 Intercept

β_i = Estimated parameters

X_i = Explanatory variables

$i = 1, 2, 3, \dots, n$ number of explanatory variables

e = Error term

This model was used to achieve objective four (iv). The BNL model is explicitly expressed as follows:

$$Y_i = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_7 X_7 + e \text{ -----(2)}$$

Y_i = Dependent variable (i.e, the binary variable; $Y_i = 1$ for a household that diversified livelihood activities and $Y_i = 0$ for otherwise.

The independent variables were defined as follows:

X_1 = Age (years)

X_2 = Sex: Dummy (D) = 1 if male; 0 if female

X_3 = Marital status: Dummy (D) = 1 if married, 0 if single

X_4 = Household size (number)

X_5 = Formal education (years)

X_6 = Access to credit: Dummy (D) = 1 if yes, 0 if otherwise

X_7 = Extension contact (Number of contacts per season)

The BNL model was used to achieve specific objective (iii).

Results and Discussion:

Socio – Economic Characteristics of Respondents

Age: Table 1 showed that 2% of the respondents fell below 20 years old. This group constituted the lowest percentage. One reason for the small number of the respondents in this category could be that the teenagers are still under the care of their parents and have no felt – need to struggle for livelihood. All their needs are being met by their parents or guardians.

Table 1: Distribution of Respondents Based on Socio-Economic Characteristics (n=150)

Socio-economic Variables	Frequency	Percentage	Mean
Age			
<20	03	2.00	
20-30	71	47.30	

31-40	50	33.30	37
41-50	14	9.30	
51-60	08	5.30	
Above 60	04	2.70	
Marital status			
Married	103	68.70	
Single	08	5.30	
Divorced	16	10.70	
Widowed	23	15.30	
Educational Qualification			
Non formal school	50	33.30	
Qur'anic education	67	44.70	
Primary education	25	16.70	
Secondary education	04	2.70	
Tertiary education	04	2.70	
Primary Occupation			
Business /Agricultural production	45	30.00	
civil service	64	42.70	
Civil service and business/ agricultural production	41	27.30	
Household size (No.)			
<5	07	4.70	
6-10	94	62.70	7
11-14	36	24.00	
15 and above	13	8.70	
Annual income from livelihood (₦)			
<50,000	16	10.70	
51000-10000	33	22.00	
151,000-200000	58	38.70	162 653
201000-250000	11	7.30	
251000-300000	16	10.70	
Above 300000	16	10.70	
Annual Total Household Income(₦)			
< 100,000	08	5.30	
101,000 – 200,000	23	15.30	
201,000 – 300,000	58	38.70	250 354
301, 000 – 400,000	38	25.30	
401,000 – 500,000	10	6.70	
Above - 500,000	13	8.70	

Source: Field survey, 2015

The age classes 20-30 years and 31-50 years constituted 47.3% and 33.3% with mean of 37 of the respondents respectively. The respondents in these age categories constituted the majority (80.6%). They are in their productive and energetic age bracket. Therefore, the fact that the largest number of the respondents was found to be within these age classes is an indication those women were active enough to participate in livelihood activities to earn a living. The result of this study agrees with that of Vosanka *et*

al: (2010) which showed that most women were between 20 - 50 years of age, meaning they are in their economical active age to undertake various livelihood activities. This finding also agrees to the findings of a study by Bzugu and Hayatu (2007) where it was showed that most small farmers in Mubi region were in their active ages and can engage in activities that generate funds for their livelihood activities with women inclusive.

Marital Status: This study revealed that majority (68%) were married, 5.3% were single, 10.7% were divorced and 15.3% were widowed (Table 1). Married people have enormous responsibilities by virtue of their status, which could make them engage in livelihood activities to generate funds especially to cater for their family and especially their children. This finding was in agreement with that of Okoro and Odebode (2009) who examined that rural women who were engage in livelihood activities majority (68%) were married women. This implies that there is a significant relationship between marriage and engagement in livelihood activity particularly among the rural women.

Education level: Table 1 shows that most (44.7%) of the respondents had Qur'anic education, 33.3% had no formal education, 16.7% had gone through primary education, whereas, only 2.7% had completed secondary education and tertiary education. This disagrees with the observation made by Okoro and Odebode (2009) that education plays a vital role in formal orientation on livelihood activities; a condition which could create better insight in livelihood activities. Wanyama *et al:* (2010) found in their studies that education has a negative significant relationship with livelihood diversification. The reason for this could be that women in the study area are sometimes not allowed to further their education beyond some certain level but could have Quaranic Education even in their matrimonial home.

Primary Occupation: Table 1 indicates that 42.7% of the respondents were engaged in Business/Agricultural production as their occupation. These occupations include petty trading selling of weaved mats and basket, selling of farm produce/animal products as well as other activities. About 30% of the respondents were civil servants while 27.3% of them were both civil servants and were into business / agricultural production. This implies that major occupation of most of the women in the study area was business/ agricultural production. Due to the nature of the norms and values of the locality, respondents had to engage themselves mostly in petting trading which can be done indoors by the women. This agrees with the observation made by Olawoye (2002) that in developing countries like Nigeria (inclusive) livelihood can only be met by engaging in diverse livelihood activities.

Household size: Table 1 revealed the result on household size had the highest frequency were between six to ten consisting a total of 62.7%, about 24% were household size between eleven to fourteen people. Whereas, those with the least 4.7% were household size of less than five, this indication implies that a large household size were those mostly engaged in livelihood activities since the needs of each members of the family has to be met. This conclusion is in line with the result of studies carried out by Olawuyi and Rahji (2012) who observed that those households with more than six members in the family were those mostly engaged in livelihood activities. Similarly, Ayanwuyi and Akintode (2011) on their studies on income generating activities among rural women in ensuring household food security in Ill local government area who indicated that larger family size and larger number of children in the family increase the rate of involvement in livelihood activities. This could be because of feeding, health, education and other basic needs of life.

Annual income from livelihood: Table 1 shows that a good portion (38.7%) of the respondents had their income between 151,000 – N200, 000, followed by those that get between 51, 000- 100,000 (22%). Those who earn between 201, 000 – 300, 000 and above 300, 000 were 10.7 each. Based on these results it could be that those respondents that fall within this category are into larger livelihood activities and possibly diversified. This implies that the more the respondents diversify their livelihoods, more the chances of

increase in income among women. The result is in collaboration with that of Raufu *et al*: (2012), who found in their studies on economic analysis of rural women's income from non-timber forest product in life in Osun state Nigeria, while revealed that respondents get income from the non-timber livelihood activities of different types which earns them a reasonable income.

Annual Total Household Income: The study revealed that 5.3% of the respondents earned less than N100, 000 as their annual total household income, 15.3% earned between N101, 000 to 200, 000 per annum. About 38.7% get N201, 000 to N300, 000 while 25.3% of the respondents earned between N301, 000 to N400, 000 and 6.7 and 8.7 earned the total annual household income between N401, 000 and above N500, 000 respectively. Total household income was income that is got from both the man and woman irrespective of the occupation they are engaged in the income combined together contribute to the welfare of the household.

3.2 Diversification of Livelihood Activities among Respondents

This section was mainly concern with diversification of livelihood activities in the study area. Table 2 revealed that majority (84%) of the respondents diversified their livelihood activities; while the remaining 16% indicated that they did not diversify at all. This implies that majority of the respondents diversify their livelihood activities, this could be that the income generated from a single source may not be sufficient to cater for the household needs. Therefore, majority had decided to diversify to generate income from various sources.

Table 2: Distribution of Respondents by Status of Diversification of livelihood Activities (n = 150)

Status of Diversification	Frequency	Percentage
Diversified	126	84.00
Not Diversified	24	16.00

Source: field survey; 2015

Factors Influencing Diversification of Livelihood Activities among Respondents

To identify the factors influencing the likelihood of diversification of livelihood activities among respondents, the Binary Logit (BNL) models were estimated. The coefficients of the BNL model represented the effect of each explanatory variable on the ratio of the probability of the household to diversify livelihood activities, relative to the probability of not diversifying livelihood activities. In general, the results indicated that diversification of livelihood activities were associated with differences in factors that determine the way in which an individual household decides to diversify livelihood activities or not. Since the parameter estimates of the BNL model provides only the direction of the effect of the independent variables on the dependent variable, the discrete changes in the probabilities (marginal effects) were derived to explore the effects of the independent variables on the respondents' diversification of livelihood activities. To ease interpretation of the model result, the marginal effects of the explanatory variables (factors) on the probability of diversification of livelihood activities were presented in Tables 3.

Table 3: Marginal effects from BNL model of factors influencing diversification of livelihood activities

Variable	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
Sex	-0.3124658	0.4097928	-0.76	0.446	-1.115645	0.490713
Marital Status	0.2645164	0.5561233	0.48	0.634	-0.8254651	1.354498
Age	0.2737997	0.4482741	0.61	0.041**	-0.6048014	1.152401

Household size	0.5679143	0.2862373	1.98	0.072*	0.0068996	1.128929
Formal educ. (yrs)	0.8065407	0.2677577	3.01	0.023**	1.3313360	0.281745
Extension contact	0.0215498	0.3043731	0.07	0.044**	0.5750106	0.6181101
Access to credit	0.1881535	0.2339955	-0.80	0.071*	0.6467763	0.2704692

Source: Field survey; 2015

Note: * Significant at 10%, ** significant at 5%, and *** significant at 1%

Age: Table 3 showed that the coefficient of age had positive and significant ($p \leq 0.05$) relationship with diversification of livelihood activities among the respondents. This implies that a unit increase in age (years) of respondent could increase the likelihood probability of diversifying livelihood activities. This was in line with the result that young ruralites are more likely to face the risks associated with diversification (Asa and Valerie, 2009).

Household size: Household size significantly ($p \leq 0.10$) increases the probability to diversification of livelihood activities as a viable strategy to minimize the risk of single livelihood activity. In this case, as the number of productive labor force within a family increases with one individual, the probability of diversification of livelihood activities increases. This could be as a result of the fact that diversification of livelihood activities could require additional labour.

Formal education: - The result indicated that formal education significantly ($p \leq 0.05$) and positively influenced the diversification of livelihood activities. The implication could be that an increase in years of formal education of a respondent could increase the likelihood of diversification of livelihood activities. The educated respondents could have better information on how to diversify their livelihoods than the less educated ones.

Extension contact: - Access to extension services had significant ($p \leq 0.05$) and positive relationship with diversification of livelihood activities. This implied that as the number of extension contact increases; there could be a unit increase in diversification of livelihood activities. This is because, extension contact determines the information that respondents obtain on livelihood activities and the application of innovations through demonstrations by extension agents.

Access to credit: - The coefficient of access to credit indicated statistically significant ($p \leq 0.10$) and positively related with the probability of diversification of livelihood activities among the respondents. The study showed that as the access to credit increases by unit, the level of diversification of livelihood activities increases by a unit. This could be as a result of the fact that access to credit help respondents out of their predicaments, there by influencing them to diversify livelihood activities.

Contribution of Rural Women to the household

This section examined the contributions made by rural women to household welfare. The result is presented in Table 4 sustainability were considered. Rural women contribute to household welfare by engaging in various livelihood activities. Table 4 shows rural women's contribution to family up-keeping in the study area. It was revealed that majority of the respondents contributed in one way or the other. Rural women, being a mother, pay attention specifically on their children's welfare especially clothing and food. This as aspect is collaboration with findings of Chikiezie (2008); Dasgrupt (2009) and Kristof (2009), that women when employed or engaged in livelihood activities they are far more likely to spend their income on improving their children welfare especially food, health care, education, clothing and housing.

Table 4: Rural Women Contribution to household Welfare in the Study Area

Contribution to household Welfare	Always*		Occasionally*		Never*	
	(No.)	(%)	(No.)	(%)	(No.)	(%)
Pay school fees for Children	14	9.33	60	40.00	76	50.60
Provision of food to household	34	22.67	78	52.00	38	25.33
Contribute towards Festivities	58	38.67	72	48.00	20	13.33
Clothing the children	53	35.30	65	43.30	32	21.33
Health care	14	9.33	60	40.00	76	50.60
purchases of water	18	12.00	52	34.67	70	46.67

Source: Field Survey; 2015

Multiple Responses exist

Respondents Reasons for Diversifying Livelihood Activities

Table 5 shows the distribution of the respondents on the basis of the reasons why they have decided to engage in livelihood diversification. The distribution indicates that majority (94.7%) of the respondents indicated that they diversify in order to increase their income. Possibly, the yields or income from a single livelihood activity have always been grossly inadequate.

Another reason for engaging in more than one livelihood activities, which 67.3% of the respondents indicated that, was as a source of employment. This could be attributed to the fact that most of the rural women are not employed workers. Therefore, diversifying livelihood activities serves as a source of employment for them. The Table also shows that 84% of the respondents decided to engage in diversification because of increasing poverty conditions. This might be their reasons for engaging in multiple livelihood activities perhaps, the effects of increasing poverty conditions might be reduced since the source of income is from a diversified source.

Table 5: Distribution of Respondents Based on Reasons for Diversifying Livelihood Activities

Reasons for diversifying livelihood activities	*Frequency	*Percentage
Increases income	142	94.70
Ensures food security	86	57.30
Avoiding risk associated with farming	69	46.00
Meet family necessity	79	64.70
As a source of employment	101	67.30
Increase in poverty condition	82	54.70
Inadequate income from single source	99	66.00

Source: Field Survey; 2015

***Multiple responses exist**

Table 5 also shows that 64.7% of the respondents decided to diversify their livelihood activities because of household necessity. These necessities include shelter, health care, payment of children school fees and clothing among others. These necessities could not be met from a single source (Husband) of income; therefore, they have to engage in other income generating activities in order to be able to cater for their household needs. Inadequate income from single source, ensure food security and avoiding risk associated with farming were also indicated by 66%, 57.3 and 46% of the respondents as their reasons for engaging in livelihood diversification respectively.

The findings of this study on the respondent's reasons for engaging in livelihood diversification are in agreement with the findings of similar studies carried out in other areas. The reasons includes; among others: increase in income, ensure food security, risk associated with farming and meet family necessities (NPC: 2006, Ellis: 1999, Onyenechere: 2011). A similar study conducted by Mushi (2004) in Tanzania also revealed that the various reasons why rural people (women inclusive) in the study area involved themselves in livelihood diversification which includes the following: income from Agriculture is not enough; dislike for farming; need for self employment; agriculture is slow paying illness; absence of reliable and accessible market; reduction of risks by speeding income risk across several activities.

Conclusion

Based on the findings of this study, it was observed that rural women studied were in their active and productive age; therefore, they were able to engage in livelihood activities that generate income to support their basic needs. Majority of the women were married, mostly self employed through engaging in various types of occupation, only few combined livelihood activities and government employment. Majority of the respondents diversified their livelihoods to increase their income so that they can meet up with the family necessity, hence reducing the level of poverty condition. It can be concluded that a unit – increase in livelihood activities, the more the possibility of increase in unit income of the household. Despite some constraints, rural women contribute to increase in household income which is essential for survival of the rural poor families.

Recommendations

Based on the findings of the study, the following recommendations were made:

- i. Rural women can help themselves by identifying cooperatives and livelihood activities which they think are more profitable and can generated income for them and their families. Thus they can use the cooperatives to seek for assistance and credit facilities.
- ii. Promotion of changes in attitude towards women through public debate and enlightenment programme should be pursued with vigor so that rural women can utilize the opportunities of participating in livelihood activities that are available within their locality.
- iii. There is need for the Nigerian Government to improve the livelihood of rural women by increasing their employment opportunities. This will reduce the early girl child marriage hence this could take care of dependency ratio problem by the rural women on their husband.

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