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Socio Economic Features and Poverty Status of Livelihood Diversifiers in Marginal Communities of Ekiti State Nigeria

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Authors' contributions

This work was carried out in collaboration among all authors. Author AA designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Author SOWT provided further insight on the analysis. All the other authors read and helped in the interpretation of the results. All authors read and approved the final manuscript.

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ABSTRACT

The paper investigates the socio-economic features and poverty status of livelihood diversifiers in marginal communities of Ekiti State, Nigeria. Data were collected from a sample of 80 respondents' from three communities selected from three Local Government Areas. Descriptive and Hosmer and Lemeshow test were used to analyse the data. It was found that those engaged in livelihood diversification were predominantly male while few of them were female. Over 70 percent of them were still in their active age. Only a handful of them could be outright concluded in illiteracy which reveal how ekiti state people cherish education. In all, 71 percent of them were married which explained the difficulty for such families to relocate to urban centers. Household size was fairly large with 60 percent having between 5-10 household members. This further makes it pretty difficult to relocate to urban centers for greener pastures. Only 21 of them operated fairly large farm holdings of more than 4 ha. The result of the Hosmer and Lemeshow test showed that all the respondents have high degree of susceptibility to change their poverty status. The paper justified that livelihood

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diversification still remains one of the potent tools of dealing with abject poverty and inability to make ends meet among the rural households in a country where government has nothing or little to offer as safety nets for the vulnerable of the society.

Keywords: *Diversification; poverty; Hosmer and Lemeshow; expected frequency; predicted probability.*

1. INTRODUCTION

The importance of livelihood diversification in any country, where a big chunk of the population depends on agriculture and its related activities cannot be overemphasized. This is because, where poverty prevails, the people must be down to business to defend their meager income by a combination of many enterprises together at a time. Constructing a diverse portfolio of activities and social support capabilities, while struggling for survival and improvement in living standards and the means of gaining a living is typical of rural household settings. It is a historically tenacious and geographically widespread phenomenon everywhere rural households exist. The problem of livelihood diversification and poverty in Nigeria has already assumed a worrisome dimension [1]. The main purpose of diversification, as argued by many authors, is that it generates and strengthens flows of income [2,3], likewise opined that rural households in many different contexts have the history of diversifying their income sources, thus allocating their risks into different areas of enterprise and smoothen consumption over the year. These rural household families have continued to experience unmitigated changing political environment and climatic challenges in Nigeria thus, worsening their living conditions [4]. Furthermore, [5,6] explained that these families are characterized by low productivity in farming and limited access to non- farm incomes, thus increasing their vulnerability and depravity.

There is no gain saying that the poverty-livelihood Nexus needs urgent attention. Poverty is multidimensional in nature and scope and it is directly associated with a household income, asset holding, and other economic activities that mutually generate a livelihood strategy and outcomes [7]. Underpinning the underlying mechanism and dynamics of how rural livelihood strategy can navigate families out of poverty is a very significant feat in order to achieve the international goal of poverty reduction [5]. There have been flurries of research findings about the linkage between poverty reduction and livelihood diversification. Gebrehiwot [8] observed that non-

farm diversification is an important role player in the context of inadequate and rain-fed dependent agricultural income households. They opined that households who diversified their livelihood activities are the ones who are able to build better assets and less vulnerable than their counterparts who did not diversify. Barrett et al. [9] classified livelihood diversification as a function of the income quartiles of households. Van den Berg [10] and Ansoms [11] opined that asset ownership play a Paramount role in classifying rural livelihood strategy. Other studies have associated livelihood strategy with income composition [12,13,14]. There is another submission by Solomon and Adriana [15] that climate-related shocks are key push factors for livelihood diversification and that effect of the latter on household income are varied across countries and diversification strategies. They noted that a policy rescue is that livelihood diversification should be tailored toward specific socio-economic segment of the population. In Nigeria most rural families are still operating at subsistence level, despite the global technology advancement in farming [16]. In the same vein [17] established that there was a significant relationship between households' food insecurity and livelihood diversification strategies in Nigeria. Though Nigeria is resource-rich both natural and human yet the country can be described as a poverty capital of the world [17]. Recently, Nigeria is rated as the 178th poor in the world poverty ranking profile. Thus poverty issue becomes very endemic and systemic in the rural areas and marginal communities. It is with this in mind that the paper undertakes to proffer an answer to pertinent questions that are considered important among the correlates of poverty navigators in any society in the world. These are: what are the socioeconomic features of the diversifiers as affecting their poverty status and can it be predicted that these poverty status will change in the future, given their present features.

2. MATERIALS AND METHODS

The study was carried out in the rural areas of Ekiti State, Nigeria. A multistage sampling

technique was used in the survey. The first stage was a random sampling of three local government areas with the exemption of those local government areas that did not fall within the rural settings. Three communities were randomly selected from these LGAs after which 12 farming households were randomly chosen for interview. This amount to a total of 80 households. Data was collected through a well-structured questionnaire. The information that was contained therein included socio-economic characteristics of the household heads, their livelihood status and other questions relating to their material well-being. Descriptive analysis and Hosmer and Lemeshow test were used to analyse the data. The Hosmer–Lemeshow test is a statistical test for goodness of fit for logistic regression models. It is used frequently in risk prediction models. The test assesses whether or not the observed event rates match expected event rates in subgroups of the model population. The Hosmer–Lemeshow test specifically identifies subgroups as the deciles of fitted risk values. Models for which expected and observed event rates in subgroups are similar are called well calibrated.

The Hosmer–Lemeshow test statistic is given by:

$$H = \sum_{g=1}^G \left(\left(\frac{(O_{1g} - E_{1g})^2}{E_{1g}} + \left(\frac{(O_{0g} - E_{0g})^2}{E_{0g}} \right) \right) \right)$$

$$= \sum_{g=1}^G \left(\frac{(O_{1g} - E_{1g})^2}{N_g \pi_g} + \frac{(N_g - O_{1g} - (N_g - E_{1g}))^2}{N_g (1 - \pi_g)} \right)$$

$$= \sum_{g=1}^G \frac{(O_{1g} - E_{1g})^2}{N_g \pi_g (1 - \pi_g)}$$

Here O_{1g} , E_{1g} , O_{0g} , E_{0g} , N_g , and π_g denote the observed $Y=1$ events, expected $Y=1$ events, observed $Y=0$ events, expected $Y=0$ events, total observations, predicted risk for the g^{th} risk decile group, and G is the number of groups. The test statistic asymptotically follows A distribution with $G=2$ degrees of freedom. The number of risk groups may be adjusted depending on how many fitted risks are determined by the model. This helps to avoid singular decile groups.

3. RESULTS AND DISCUSSION

3.1 Socio-economic Characteristics of the Respondents

The socio economic and resources characteristics of the respondents are displayed in Table 1. According to the results, there is no

gender equality in terms of how livelihoods were diversified in the study area. In all, 71.2% of males as opposed to 28.8% who were females were diversifiers. The result is probably due to the fact that rural population who engaged in all kind of farm and non-farm activities were predominantly males. This is because Male householders are the Breadwinner's and thus expected to be more proactive in terms of maximizing opportunities at their beck and call to attain this goal. Over 70% of the diversifiers were still very active, being under the age of 50 years old. This stipulates that, all things being equal, productivities are expected to be high. It also suggests that rural urban migration of the youthful class is minimal. This is not in any way unexpected because the flurry of ICT technology that greeted Nigeria in these recent years is enough encouragement to minimize rural-urban drift. The agricultural program of the immediate past and present government is also germane in explaining why the youth in the area cling to the rural location for their sustenance. The respondents could not be concluded in illiteracy outright as seen from the table. In total, 11% of them did not have any formal education, 33.85% and 41.25% of them respectively had primary and secondary education. As seen from the age distribution ,majority of this educated people are still in their active ages which speaks volume either about their levels of frustration due to unemployment in the urban centers or because the rural setting is relatively becoming conducive for people of diverse educational cader.71.2% were married. It is naturally expected that this married class would have more difficulty relocating to urban centers because of the cost associated with resettling down an entire household. Unless the opportunity cost of doing so is far less than the marginal benefit of their productive efforts in the rural setting from where they intended to relocate. Those who were still single had little inertia to relocate to urban setting. Hence livelihood diversification is expected to be a well pronounced issue in the area. The result suggested that a lot of the respondents have a fairly large household's size. Only 20% had less than 5 households members, 60% had between 5 and 10 members while 20% had more than 10 members or people in their household. This also reveals while it is pretty difficult for many of this folks to relocate to urban centers and why livelihood diversification plays a significant role in the maintenance of their households.

This incidence of large household can of course undermine national development. Population

growth is one of the banes of national development and one of the key correlates of population increase is indiscriminate child bearing which results in large household sizes. The distribution according to primary occupation reveals that 71% of the respondents were fundamentally farmers as opposed to a handful of them who were government workers (6.25%). Reckoning this occupational distribution to what obtains in the educational distribution it is obvious that the failure of the government in gainfully employing this people after being certificated is colossal and responsible for the despondent lifestyles many of them live in the village. There is nothing, however wrong if educated people engage in agriculture. In fact, that should be typical of a developed economy, but it should not be on a subsistent level as seen in the cases of many of these respondents. Other occupational engagements of the respondents

are artisanal activities and petty trading. The farm size distribution also show that many of this respondents operate very low scale farm holdings, having an average of less than one hectare. 21.25% of them operated more than 1 ha but less than 4 ha. Only 17.5% operated more than 4 hectares which is on the large scale. Many reasons can be put forward as been responsible for this low engagement in large scale farming in the area. This might include poor access to land as result of land issues and tenure composition, poor access to credit from financial Institutions and insufficient infrastructural facilities. The distribution of the mode of land acquisition suggested some difficulties in having many of the respondents engaging in large scale farming .According to the results, only government owned land which basically encouraged large scale farming is 15% of the population sample.

Table 1. Distribution of the socio-economic characteristics of the respondents

Variable	Frequency	Percentage
Sex (dummy)		
Male	57	71.25
Female	23	28.25
Age (years)		
30-39	42	52.50
40-49	19	23.75
Above 50	19	23.75
Marital status (dummy)		
Single	23	28.80
Married	57	71.20
House hold size (actual)		
<5	16	20.00
5-9	48	60.00
>10	16	20.00
Primary occupation		
Farming	57	71.20
Government worker	5	6.25
Others	18	22.50
Farm size (Hectares)		
<1	49	61.25
1-4	17	21.25
>4	14	17.50
Mode of land acquisition (dummy)		
Self-owned	21	26.25
Rent/lease	26	32.50
Communal/inheritance	21	26.25
Government	12	15.00

Source: computed from survey data, 2018

Table 2. Frequency distribution of the respondents' income from their occupations

Income (N)	Primary occupation	Secondary occupation
<50000	1 (1.2%)	10 (12.5%)
50001-100000	4 (5%)	10 (12.5%)
100001-150000	40 (50%)	10 (12.5%)
150001-200000	25 (31.3%)	15 (18.75%)
>200000	10 (12.5%)	35 (43.75%)
Total	80 (100%)	80 (100%)
Mean	114000	286000

Source: computed from survey data, 2018

Table 3. Contingency table for Hosmer and Lemeshow test

	Poverty status= not poor		Poverty status= poor		Total
	Observed	Expected	Observed	Expected	
Step 1	10	10.00	0	0.000	10
Step 2	10	10.00	0	0.000	10
Step 3	10	10.00	0	0.000	10
Step 4	10	10.00	0	0.000	10
Step 5	10	9.995	0	0.004	10
Step 6	10	9.061	0	0.939	10
Step 7	04	1.920	6	8.080	10
Step 8	0	0.023	10	9.977	10

Source: Computed from survey data, 2018

Table 4. Classification table of the respondents

	Predicted poverty status		Percentage correct
	Not poor	Poor	
Poverty status			
Not poor	66	1	98.4
Poor	1	12	91.8
Overall percentage			97.3

Source: Computed from survey data, 2018

3.2 Frequency Distribution of the Respondents' Income from their Occupations

Distribution according to the income earned from primary occupation, as presented in Table 2, reveals that the respondents did not earn good deals of income because only about 13% of them earned more than 200,000 naira annually which is a little higher than 500USD. Those with the highest pay among the group are probably those who are salaried as primary school Teachers or local government employees. It is even ridiculous to find that some of them earned less than 50000 naira per annum, which were suspected to be the core peasants among them. Distribution of income earned from secondary occupation revealed fairly higher levels of earnings by the diversifiers. One method by which abject poverty could be dealt with was demonstrated by many in this rural communities and that is to diversify their means of livelihood. This was clearly

showed by the levels of income earned from secondary occupations.

3.3 Hosmer and Lemeshow Test of the Respondents

The contingency table for Hosmer and Lemeshow test in Table 3 shows that 10 respondents were used as group tests, until all the 80 respondents have undergone the test. The first ten shows that these respondents were observed not to be poor with expected frequency obtained to be 10. As the test progressed to the last 10 respondents, which formed the eighth group, all the ten respondents were observed to have poor status of poverty with the expected frequency number also being closed to 10 (9.977). However, the predicted probability is represented in Table 4. Out of the 80 respondents selected in this survey, 67 respondents were originally observed by the Hosmer and Lemeshow test not to be poor, but

66 would remain in this poverty status, all things being equal, while only one would change its poverty status to the level of being poor with the predicting probability of 0.984.

On the other hand, out of the remaining 13 respondents observed to be poor, 12 were predicted to remain poor, while only one would emerge not to be poor with the predicted probability of 0.918. The overall predicting probability status was found to be 0.973 (97%). This shows that all the respondents have high degree of susceptibility to change poverty status.

4. CONCLUSION AND RECOMMENDATIONS

We conclude that the issue of livelihood diversification is deeply entrenched in the area and remains a major vehicle that could convey the dwellers to a better position in terms of their material and physical well-beings. The Hosmer and Lemeshow test test actually underscored the efforts of many rural dwellers to wriggle out of poverty without adequate empowerment and or capacity building from either governments at various levels, NGOs or well-to-do individuals in the society. We recommend that these rural diversifiers should not rescind in their day-to-day struggle to make ends meet especially when the government has demonstrated poor gestures in accepting the challenge of bailing out such vulnerable groups from their life predicaments.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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