

THE ISSUE OF INCOME DIVERSIFICATION AMONG RURAL FARMING HOUSEHOLDS: EMPIRICAL EVIDENCE FROM KWARA STATE, NIGERIA

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Abstract. The rising incidences of poverty among rural farming families are the reason behind renewed interest in income diversification. This study determined the level of income diversification; identified alternative income sources; examined the reasons for diversification; and identified the constraints to diversification. A three-stage random sampling technique was used in selecting 160 households on which a structured interview schedule was administered. Descriptive statistics, a Likert-type scale, and the Pearson's Product Moment Correlation were used for data analyses. Findings reveal that 1.3% of the households had no additional sources of income while 40.6% had at least four. Trading (55%) and livestock keeping (40.7%) were the most popular alternative income sources. The declining farm income (mean = 2.96) was the primary reason for diversification, while poor rural infrastructure (mean = 3.04) was the most severe constraint to income diversification. Farm size, access to extension services, household size, age and educational level of the household head were significantly related to the level of income diversification at $p < 0.05$. The study concluded that the level of income diversification was high and influenced by socioeconomic characteristics of the households. It recommends that the government should provide adequate infrastructural facilities in rural areas. Farmer associations should also ensure better prices for agricultural produce through joint marketing.

Keywords: income diversification, rural households, constraints

INTRODUCTION

Income diversification involves strategies employed to earn cash income in addition to primary economic activity. It refers to an increase in the number of sources of income as well as to ensuring a balance among them. Therefore, a household with two sources of income would be adjudged more diversified than a household with just one source. Also, a household with two income sources, each contributing half of the total, would be more diversified than a household with two sources such that one accounts for 90 percent of the total (Joshi et al., 2003; Ersado, 2003). Income diversification is believed to be a strategy primarily intended to offset risk. Babatunde and Qaim (2009) noted that income diversification is not only a risk management strategy in rural Nigeria, but a means to increase overall income. Diversification refers to the expansion of the range of rural activities outside the farm and is seen as a dynamic adaptation process created through pressures and opportunities (Ellis, 2000). It may occur as a deliberate household strategy or as an involuntary response to crisis; and can be used both as a safety net for the rural poor or as a means of accumulation for the rural rich (Ellis, 1998).

Farming as the major source of earning in rural areas has not successfully assured sufficient means of living for the majority of Nigerian farming households. The situation is further aggravated by the effects of climate

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change and the farmers-herdsmen conflict over agricultural land. Rural farming families, therefore, continue to struggle with food security and other livelihood-related issues. Though diversification has a significantly positive impact on total household income, households differ in their abilities to diversify their income sources (Babatunde and Qaim, 2009). An understanding of factors associated with income diversification will assist rural development stakeholders in providing an enabling environment for farmers to enhance their livelihood. It is against this background that the study assessed the factors influencing income diversification among rural farming households in Kwara State, Nigeria.

The specific objectives of this study were to:

- describe the socioeconomic characteristics of rural households in the study area;
- assess the level of income diversification of rural households;
- identify the various income sources of rural farming households;
- examine the reasons for income diversification among rural households; and
- identify the constraints to income diversification among rural households.

HYPOTHESIS OF THE STUDY

The hypothesis of this study was stated in the null form as follows:

H0: There is no significant relationship between some selected socioeconomic characteristics of rural farming households and income diversification.

LITERATURE REVIEW

Two sets of factors induce rural households to diversify their incomes: Push factors and pull factors. Push factors, like risk and seasonality, are the common reasons for rural farming households diversifying their activities away from agriculture as a means of dealing with agricultural risks and to smooth income and consumption (Ellis 2005; Barrett et al., 2001b). In an agricultural environment full of uncertainty, rural households aim at lower covariate risk between different household activities to smooth consumption (Lay et al., 2008). However, in developing countries, many farm activities such as own farm production and farm wage labor exhibit high-risk correlations between alternative income generating

activities. Conversely, non-farm incomes can cause lower risk correlations between income-generating activities (Ellis, 1998). Also, diversification is used as a risk management strategy mainly due to lack of social insurance or safety nets from government transfers, non-government agencies, and community or family members. Rural African households, therefore, substitute for social insurance by self-insuring through diversified income sources (Barrett et al., 2001b).

As regards seasonality, in the dry season, especially in semi-arid regions, some rural households obtain remittances from seasonal migrants, earn incomes from local non-farm activities and cash from sales of crop and livestock products (Reardon, 1997; Ellis, 1998). Some farm households can also allocate a part of their labor during the rainy season where non-farm labor pays better than farming and where farm households can count on food markets to buy food (Reardon, 1997).

Andersson (2012) opined that in Kenya, the lack of non-farm sources of income and the variation in the consumption burden over time made poorer households less food secure and more vulnerable to seasonal changes in agricultural production and food prices. Some wealthier farm households that could access non-farm income were able to profit from the seasonality through trade-based or barter exchanges of produce in agricultural markets.

Pull factors are opportunities for diversification of income sources connected to commercial agriculture, proximity to an urban area, improved infrastructure, better market access, etc. (Chamberlin and Jayne, 2012). Also, access is a key determinant of diversification (Barrett et al., 2001b; Winters et al., 2009; Losch et al., 2011). When faced with appropriate incentives, those with access to adequate assets and infrastructure engage actively in markets, while those who lack one or more of those three essential ingredients largely do not (Barrett, 2008). Proximity to markets provides opportunities to sell output (and purchase inputs) from self-employment activities as well as opportunities for non-farm wage employment (Escobal, 2001; Djurfeldt et al., 2008).

METHODOLOGY

Study area

The study was carried out in Kwara State, Nigeria. With a total landmass of 32,500 km² and a population of about 2.5 million (National Population Commission, 2006), the state is bounded west by the Republic of Benin (Kwara

State Government, 2003). It is located at longitudes between 2°30'E and 6°25'E and latitudes between 7°45'N and 9°30'N. The Kwara State comprises rainforest in the southern parts with wooded savannah covering the larger part of the state. The state has an annual rainfall between 1000 mm and 1500 mm. Maximum temperatures vary between 30°C and 35°C. Though agriculture is the mainstay of the economy, other income sources in the state include trading, tailoring, and agro-processing.

Sampling procedure and sample size

The population for this study consisted of all rural farming households in Kwara State, Nigeria. The Ministry of Agriculture has divided the state into 4 zones for the administration of agricultural extension services. The zones are further subdivided into blocks. The smallest administrative unit are cells which make up the blocks. A three-stage random sampling procedure was used for the study. The first stage was the random selection of 50% of all four (4) Kwara State Agricultural Development (ADP) zones in Kwara State drawn by dip hat method to give two (2) ADP zones. The two (2) randomly selected zones were Zones B and C. The second

stage involved the random selection of 30% of the six (6) blocks in Zone B and nine (9) blocks in Zone C. 30% of households in the selected blocks were drawn from a list of farm families from the ADP. The total sample size used in the study was 160. The justification for the use of percentages at each stage is to achieve a manageable sample size while still ensuring equitable distribution across the sampling frames used.

Data collection and analytical technique

The instrument for data collection was a structured interview schedule. Descriptive statistics were used to describe the socioeconomic characteristics of the respondents, the level of income diversification and the various income sources of the households. A Likert-type scale was used to present the reasons for, and constraints to, income diversification. The Pearson Product Moment Correlation (PPMC) analysis was used to test the hypothesis.

RESULTS AND DISCUSSION

Table 1 reveals that household heads in the study area were primarily middle-aged farmers, predominantly

Table 1. Selected socioeconomic characteristics of respondents

Socioeconomic variables	Dominant indicator	Mean	S.D.	Minimum	Maximum
Age	Most (85%) respondents were between 40 and 69 years old	51.6 years	10.6	30 years	70 years
Gender	Most (85%) respondents were male				
Household size	68.8% had between 5 and 9 household members	7.0	3.0	2.0	17.0
Education level	56.2% had formal education, though most at primary school level only				
Primary occupation	Farming was the primary occupation for 80% of respondents				
Farm size	84.4% had between 1 and 4 hectares of farmland	3.3 ha	1.4	1.0	6.0
Farming experience	88.1% had more than 15 years of farming experience	24.9 years	10.3	2 years	55 years
Extension contact	45% had extension contact more than two times in the recent six-month period	2.7	1.2	2	6
Membership of farmer groups	91.3% belonged to a farmer group				
Total annual income	Only 41.3% earn less than NGN 250,000 per annum (NGN 360 = USD 1)	NGN 728,225		144,000	1,368,000

Source: own elaboration based on research.

male, poorly schooled, with about 25 years of farming experience on the average. The mean farm size, household size and annual income of the household were 3.3 ha, seven (7) members and NGN 250,000, respectively.

Table 2 reveals that only 1.3% of respondents had no other sources of income aside farming. It also shows that on the average, households had at least three (3) sources of income. The minimum number of income sources was 2, and the maximum was 5. Awotide et al. (2010) also reported that rural households in the study area diversify their income sources by combining two or more jobs to enhance consumption smoothing and address other basic needs.

Table 2. Distribution of respondents by number of income sources

Number of income sources	Frequency	Percentage	Mean	S.D.
<2	2	1.3		
2–3	93	58.1	3.3	1.2
4–5	65	40.6		

S.D. = standard deviation.

Source: own elaboration based on research.

Table 3 shows that all (100%) of the households sampled were engaged in crop farming. This finding underscores the fact that despite the poor level of development of agriculture in Nigeria, farming remains the major source of rural income. Trading (55%) and livestock farming (32%) were the most common sources of income after crop farming. Babatunde and Qaim (2008) also reported the prominence of small-scale livestock farming (mostly free-range backyard type) among rural households. The Table also reveals a high level of involvement of farming households in off-farm income generating activities. This finding supports the views of Okoye (1995) and Oladeji (2007) that though farming was the predominant activity in most rural areas, farmers usually engage in supplementary or complementary activities off the farms during the off-season periods. Barrett et al. (2001a), Kydd (2002), Reardon et al. (2006), Wanyama (2010) and Senadza (2011) stated that income diversification among farmers involved adding

Table 3. Income sources of respondents

Income sources*	Frequency	Percentage
Crop farming	160	100.00
Agro-processing	51	31.90
Livestock farming	65	40.70
Trading and marketing	88	55.00
Salaried work	37	23.10
Fish farming	36	22.50
Fish processing	7	4.40
Gathering activities	16	10
Artisanal activities	35	21.90
Transport	35	21.90

* Multiple responses.

Source: own elaboration based on research.

income-generating activities including livestock, crop, non-farm and off-farm activities. They opined that the activities generate a set of income portfolios with different degrees of risk, expected returns, liquidity and seasonality.

According to Table 4, the most important reasons the respondents diversified their income were: to augment declining farm income (Mean = 2.96), to generate income for investments (2.92) and to sustain a quality standard of living (2.85). Other reasons for income diversification among farming households are: to raise capital for farming and create employment opportunities for members of the family who may not want to embrace farming. However, it is important to note that risk mitigation is ranked last (8th) in order of prominence among the reasons why farmers diversify income. This was found to be largely due to the indigenous belief that all mishaps (including downturns in agricultural production) were acts of God.

Table 5 shows that the most severe constraints identified by the respondents were the lack of infrastructure facilities such as electricity, communication network etc. (MS = 3.04). Good infrastructural facilities are important to income diversification, while reliable supply of electricity and other facilities encourage the population to engage in income-generating activities. Access to electrification appears to help households diversify into non-farm activities and also facilitates the starting up of

Table 4. Reasons for income diversification cited by respondents

Reasons	S.D. F (%)	D F (%)	A F (%)	S.A. F (%)	MS	R
Declining farm income	8(5)	29(18.1)	84(52.5)	39(24.4)	2.96	1 st
Investment in personal development and education of household members	19(11.9)	16(10)	84(52.5)	41(25.6)	2.92	2 nd
To sustain a quality standard of living	20(12.5)	23(14.4)	78(48.8)	39(24.4)	2.85	3 rd
To raise capital for farming	23(14.4)	20(12.5)	93(58.1)	24(15)	2.74	4 th
To create employment opportunities for family members	35(21.9)	16(10)	79(49.4)	30(18.8)	2.65	5 th
Other economic activities offer better returns than farming	32(20)	46(28.8)	44(27.5)	38(23.8)	2.55	6 th
Other activities are more prestigious than farming	18(11.3)	68(42.5)	44(27.5)	30(18.8)	2.54	7 th
Seeking insurance against agricultural production risk	18(11.3)	69(43.1)	53(33.1)	20(12.5)	2.47	8 th

S.D. = Strongly Disagree, D = Disagree, A = Agree, S.A. = Strongly Agree, M.S. = Mean score, R = Rank
Source: own elaboration based on research.

Table 5. Constraints to income diversification

Challenges	V.S. F (%)	S F (%)	L.S. F (%)	N F (%)	MS	Rank
Poor condition of infrastructural facilities	81(50.6)	28(17.5)	28(17.5)	23(14.4)	3.04	1 st
Poor skills and knowledge	56(35)	56(35)	33(20.6)	15(9.4)	2.96	2 nd
Price fluctuation	51(31.9)	63(39.4)	32(20)	14(8.8)	2.94	3 rd
Poor access to start-up capital	59(36.9)	42(26.3)	47(29.4)	12(7.5)	2.93	4 th
High level of competition	51(31.9)	30(18.8)	62(38.8)	17(10.6)	2.72	5 th
Risks involved	24(15)	86(53.8)	26(16.3)	24(15)	2.69	6 th
High cost of transportation	49(30.6)	41(25.6)	35(21.9)	35(21.9)	2.65	7 th
Poor pricing	24(15)	77(48.1)	38(23.8)	21(13.1)	2.65	7 th
Level of exposure	52(32.5)	28(17.5)	44(27.5)	36(22.5)	2.60	9 th
Small household size	45(28.1)	33(20.6)	38(23.8)	44(27.5)	2.49	10 th
Bad weather	45(28.1)	14(8.8)	58(36.3)	43(26.9)	2.38	11 th
Poor health	10(6.3)	74(46.3)	31(19.4)	45(28.1)	2.31	12 th
Socio-cultural belief	9(5.6)	39(24.4)	69(43.1)	43(26.9)	2.09	13 th
Religious belief	12(7.5)	18(11.3)	70(43.8)	60(37.5)	1.89	14 th

V.S. = Very Severe, S = Severe, L.S. = Less Severe, N = Not a constraint, N.S. = Not Severe, MS = Mean Score
Source: own elaboration based on research.

own businesses (Awotide et al., 2012). Poor skills and knowledge of various income sources (MS = 2.96) and price fluctuation (MS = 2.94) were ranked 2nd and 3rd,

respectively, as constraints to income diversification. Other constraints in order of severity are poor access start-up capitals (MS = 2.93), high level of competition

Table 6. Correlation analysis showing the relationship between socioeconomic characteristics and income diversification

Socioeconomic characteristics	<i>r</i> -value	<i>p</i> -value	Decision
Age of the household head	0.238**	0.002	Significant
Gender	–0.037	0.647	Not significant
Marital status	0.054	0.501	Not significant
Household size	0.196*	0.013	Significant
Education level	–0.296**	0.000	Significant
Farm size	0.183*	0.021	Significant
Farming experience	–0.112	0.158	Not significant
Annual income	0.125	0.115	Not significant
Extension contact	0.242**	0.002	Significant

p* < 0.05, *p* < 0.01.

Source: own elaboration based on research.

(MS = 2.72), risk involved in various income sources (MS = 2.69), poor pricing (MS = 2.65), high cost of transportation and level of exposure (MS = 2.60). Also, small household size (MS = 2.49), bad weather (MS = 2.38), poor health (MS = 2.31) and socio-cultural beliefs (2.09) were constraints to income diversification. However, the least identified constraints to income diversification by respondents were religious beliefs (MS = 1.89).

Table 6 shows that age (*r* = 0.238) and educational level of the household head (*r* = –0.296), household size (*r* = –0.196), farm size (*r* = 0.183) and frequency of extension contact (*r* = –0.260) had a significant relationship with income diversification. The positive relationship between age of household head and income diversification implies that the number of income sources increased with the age of the household heads. This contradicts the *a priori* expectation that younger household heads tend to diversify income sources because of their strength and willingness to explore new opportunities. Furthermore, the household size had a negative and significant effect on income diversification among the rural farming households. This could be explained by the fact that large household sizes mean higher expenses and also tend to aggravate poverty, as noted by Reardon et al. (1998). Large household sizes also imply higher consumption expenditure, thus reducing the available resources needed to diversify into other activities. The

result contradicts the findings of Ovwigho (2014) that the larger the household, the higher the number of non-farm income-generating activities. Also, the result indicated that the lower the education level of the household head, the higher the level of income diversification. These findings support the views of Reardon et al. (2001) that income diversification seems to offer a pathway out of poverty if non-farm opportunities could be seized by the rural poor. The negative relationship between the level of education and income diversification does not agree with the *a priori* expectation because the more educated a household is, the stronger the expectation that it will be able to diversify their income-generating sources. Education has been reported to be crucial as it provides skills and abilities which allow households to secure productive and well-paying jobs. Extension contacts on the other side had a positive significant relationship with income diversification. This implies that the content of extension services delivered by agents during their visit motivated rural farming households to diversify their income sources.

CONCLUSION AND RECOMMENDATION

The study concluded that there was evidence of a high level of income diversification among rural households in Kwara State. The level of income diversification was related to the age and educational level of household

heads, the frequency of extension contact, and farm and household sizes. It also affirmed the existence of severe constraints such as the poor condition of infrastructural facilities which impedes income diversification in the state. Based on the findings of the study, the following recommendations are put forward:

The government and other rural development stakeholders should intensify their efforts to improve the condition of infrastructural facilities in the study area. This will create an enabling environment for entrepreneurial activities which will lead to further income diversification.

Farmers' access to credit facilities should be enhanced through government schemes, rural banks and cooperative societies. This will solve the problem of start-up capital to be engaged in income-generating activities.

Efforts should be intensified to increase the frequency of extension contact. This is necessary as the study revealed that income diversification increased with the frequency of extension contacts.

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