Paul Agu IGWE*

Determinants of Household Income and Employment Choices in the Rural Agripreneurship Economy

The paper seeks to link the discussions on diversification and pluriactivity among farm business owners (FBOs) and examine the topic in the context of small-scale farming. It asks households if diversification and wage-seeking behaviour in the rural agripreneurship economy is prompted by "push" or "pull" factors. The quantitative method enabled the analysis of data generated from 480 rural FBOs from Nigeria (regarded as entrepreneurs or agripreneurs). The findings reveal that education, asset endowment, access to credit, and good infrastructure conditions increase the levels of household diversification. Lack of access to capital, low farm income and fluctuations in farm income were the three most influencing factors (push factors) towards diversification.

*University of Lincoln, Lincoln International Business School, Brayford Pool, Lincoln, LN6 7TS. E-mail: pigwe@lincoln.ac.uk

Introduction

Globally, urban migrations and low farm income have put rural economies under stress. In the rural areas of developed and developing economies agriculture has been subject to extreme and rapid change which has led to many farmers becoming engaged in diversification activities (Hayatullah, 2020; Walley *et al.*, 2011). Also, small-scale farming dominates rural livelihood activities in many countries of the world. Entrepreneurs are affected by a three-way interaction between individual capabilities, resource availability and the constraints of the environmental conditions in which they operate (Bamiatzi *et al.,* 2016). Therefore, rural studies have become relevant in understanding the dynamics leading to the creation of new businesses, rural development and regional economic growth.

This study examines the determinants of household income and employment choices of farm business owners (FBOs) in the rural Nigerian economy. In the rural economy of most African countries, three choices of livelihood income exist – farming/agro-processing activities, micro/small non-farm enterprise and wage employment. In most cases, there are no social security benefits or state welfare payments. Therefore, households must choose one of the employment options to earn a living and support themselves. In rural areas, small-scale farming dominates as a livelihood option. Small farms are estimated to undertake more than 70 per cent of agricultural activities, thereby helping ensure food, employment and rural livelihoods (FAO, 2020).

Agripreneurship refers to entrepreneurship in agriculture. In both developed and developing regions, the need for diversification activities has led to high levels of "pluriactivity", off-farm work or non-farm employment. The discussion on pluriactivity and diversification started in Europe and the US in the 1990s (Arkleton, 1993; Brun and Fuller, 1992; Dax *et al.*, 1995). Since then, both concepts have been used in many studies referring to farmers' decision to have multiple income-generating activities (Morris *et al.*, 2017; Radicic *et al.*, 2017). These studies reveal that adopting a diversification strategy significantly increases farm profitability, adapt-

ability and farm business resilience to seasonality, risk and vulnerability.

Rural development practices examine boundaries mapped into broadening, deepening and re-grounding (Ploeg *et al.,* 2012). This study applies a 'Resource-based View' (RBV) to examine the determinants of household income in constrained environments. As part of its objectives, it asks if moving out of farming is prompted by resource availability. The motives of farmers and external factors in the African rural context are different from those of developed nations that are commonly found in the literature (see, e.g. Morris *et al.,* 2017; Radicic *et al.,* 2017). This study focuses on Nigeria. Like many African countries, 52 per cent of Nigerian farmers cultivate less than 1 hectare of land (FAO, 2020) and 76 per cent operate on less than 2 hectares (Fabusoro *et al.,* 2010).

This article makes important contributions to knowledge of the critical issues concerning rural household income and local/regional employment opportunities in the developing country context. There have been calls for research to focus on the developing world context where entrepreneurship has recently been proved to be an important driver of economic growth (Pham, 2018). First, this article highlights the potential of diversification to contribute to increasing household income levels. Second, it explores the implications of agricultural change and adaptation, and the close interlinkages of agripreneurship, sectoral and rural development. A study by Hayatullah (2020) reveals that while landholding size, farm characteristics and assets, and proximity to markets significantly increase diversification, a significantly lower degree of diversification is found for households with higher non-farm income.

Third, it offers an empirical research approach towards previously unexplored elements of rural entrepreneurship in Africa such as the influence of individual characteristics (e.g. level of education, family size, size of farmland or membership of social club) on diversification decisions. Arguably, diversification involving both farm work and off-farm work, and the divergent involvement of household members in

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these employment arrangements, are largely influenced by individual factors (Nguyen *et al.*, 2015), as well as resource/external factors (Nagler and Naudé, 2017). Finally, the data are drawn from a survey of rural farmers (heads of households) from South-eastern Nigeria selected purposefully from a list of farmers registered with the State government Ministry of Agriculture. The South-eastern region of Nigeria is also known for its agricultural activities, as well as a high level of entrepreneurial and small business activities (see, Igwe *et al.*, 2018, 2019 and 2020).

Resource-Based View (RBV) and Hypotheses

The RBV approach enables both internal and external analyses of the competitive environment of firms, industries and sectors. Agriculture in developing countries is constrained by a tendency to be growth-averse, underdeveloped capabilities in key business areas and often inadequate business support provision. However, the growth of entrepreneurial ventures results from the interaction between entrepreneurs' internal resources and capabilities and the constraints (Pindado and Sánchez, 2018). Since its introduction, RBV has become one of the most influential and cited theories in the history of management theorizing (Kraaijenbrink *et al.*, 2010).

At the heart of the RBV is the concept of organisational resources. These resources include tangible and intangible resources including human capital (know-how or tacit knowledge), financial, buildings, machinery and other resources. Successful entrepreneurs are those that create the most value from the resources available to them. This process creates "capabilities" (Walley *et al.,* 2011). The entrepreneurial process encompasses opportunity identification, which is either created or discovered (Goss and Sadler-Smith, 2017). Meanwhile, opportunity exploitation involves acquiring resources, bundling those resources into capabilities, and leveraging these capabilities to create and capture value (Sutter *et al.*, 2019).

Agripreneurship' denotes entrepreneurship in the areas of agriculture and agribusiness. Within the agripreneurship context, diversification is a strategy that takes farmers away from a focus on farming to other livelihood choices and opportunities. Also, diversification can be viewed as an evolving set of responses to market failures (Ploeg *et al.*, 2012). It could be argued that diversification behaviour is related to low prices of agricultural products and the dysfunctional or imperfect factor markets (low value of agricultural land and high cost of labour in the rural communities). As a consequence, low farm income led farmers into opportunity-seeking and exploitation through diversification, pluriactivity, off-farm work or non-farm work. This leads to the development of the first hypothesis.

H1: Household diversification capability will be positively and significantly associated with individual characteristics of FBOs.

The determinants of livelihood choices are supported by many empirical studies (Hayatullah, 2020; Morris *et al.,* 2017). However, less discussed in the literature are the environmental challenges (external factors that support or hinder diversification or pluriactivity). There are examples of many countries like Cambodia that has recorded remarkable economic growth driven mainly by rural economy, thereby reducing poverty from 50 per cent in 2004 to 20 per cent in 2011 (Seng, 2015). In Uganda, Ghana and Ethiopia, a sharp rise in local income inequality was evident due to differential capacities of households to diversify (Gautam and Andersen, 2017). This leads to the development of the second hypothesis.

H2: Household income and employment choice will be positively and significantly associated with resource availability and external factors.

A distinction between positive factors that 'pull' and negative factors that 'push' people into entrepreneurship has been explained by previous studies (Igwe *et al.,* 2019). Examples of 'pull' factors include the need for achievement or the desire to be independent (van der Zwan *et al.,* 2016). 'Push' motivations may arise from (the risk of) unemployment, family pressure, and individuals' general dissatisfaction with their current situation (van der Zwan *et al.,* 2016). Also, the literature on the decision to enter entrepreneurship has identified dichotomisation contrast between 'economic' and 'lifestyle' choices (Hansson *et al.,* 2013), the former being concerned with farm business strategies to reduce risk and capitalise on an additional resource, whereas the latter views strategy as supporting social motives and identity.

Ploeg *et al.* (2012) examined rural development practices through boundaries. The boundaries were mapped into three categories: broadening, deepening and re-grounding. Broadening refer to a range of productive activities beyond merely farming (although there might be considerable intertwinement and synergy) and enlarges farm income. Deepening describes the introduction of new practices that (re-)internalize processing and distribution within the farm (e.g., adding values to the end-products). Re-grounding involves reconstituting the resource base of the farm thereby reducing dependence on external resources and increasing the dependence on internally available resources. At the farm enterprise level, these shifts, and their interactions, increase multifunctionality (Ploeg *et al.,* 2012).

The Nigerian Rural Context

The Nigerian rural sector represents an unique environment where rural regions cover more than 90 per cent of the geographical landscape and where 49.66 per cent of the country's population live (World Bank, 2018). Like that of many countries in West Africa, the Nigerian rural economy is heavily concentrated in agriculture (World Bank, 2014) with over 70 per cent of the population employed in agriculture (Fasoyiro and Taiwo, 2012) which contributes over 40 per cent to GDP (World Bank, 2014). The average small family farm sources labour from family members with an almost

balanced proportion of labour dedicated to off-farm and on-farm activities (FAO, 2018). Land tenure is characterised by a very unequal distribution of ownership and high level of tenure insecurity making commercial farming difficult.

Besides, the rural sector has numerous production challenges ranging from lack of modernised production inputs to lack of credit facilities for farm expansion; there is also poor linkage to market and post-harvest technology (Fabusoro *et al.,* 2010). Among small family farms, men usually have the decision-making power and women lack access to ownership of land (only a small share of farms of around 13 per cent are female-headed) (FAO, 2018). Nigeria's infrastructures are inadequate and poorly maintained. The Nigerian power sector's operational efficiency and cost recovery are among the worst in Africa, supplying about half of what is required (World Bank, 2011). There is a fitful supply of electricity and many local communities are not connected to electric power, water supply and telecommunications.

Only six per cent of the households benefit from agricultural extension services (FAO, 2018). Nevertheless, when compared to other West African countries, Nigerian farmers have developed growth-enhancing measures such as intensification of fertiliser application and adoption of new farming techniques. About 44.5 per cent of the households use fertilisers and rice and yam production are thriving as Nigeria produces more than 60 per cent of the entire world's yams (mainly exported to Europe and America - BBC, 2017). However, it could be argued that the high dependence on export production diminishes the scope for self-sufficiency and increases food insecurity in the country.

Methodology

First, a structured questionnaire was designed to collect quantitative and qualitative data from a household survey of farmers in rural communities in Nigeria. Second, the questionnaire was administered to 2700 rural FBOs (our empirical equivalent of entrepreneurs) who were engaged in farming (i.e. crop and livestock activities) and/or nonfarm businesses (see, for example, Radicic *et al.,* 2017). Therefore, all respondents operate/own a farm and may have diversified into non-farm activity or else engage in wage employment. These farmers were randomly selected from Farmers Registers from the States Ministry of Agriculture and Rural Development in Eastern Nigeria. FBOs were selected purposefully on two considerations (1) based on convenience sampling and (2) if they engaged in farming in the previous farming year.

Of the 2700 questionnaires that were distributed, 480 completed surveys were achieved (17.8% completion rate). The composition of the respondents could have influenced the research results given the purposeful approach. However, some measures were undertaken to mitigate other limitations (Rahman and Akter, 2014). The questionnaire was delivered by hand to households through research assistants employed for the data collection, and a date was fixed for collection. This method was chosen to eliminate the barriers associated with collecting data in Nigeria due to lack of postal facilities, email and business contact addresses. Another benefit is that the method ensured a high response rate. The data collection lasted six months.

In order to examine farmers' motives for diversifying their farm business, a five Likert-point scale of 1 – 5 (1 for low impact, 5 for high impact and 0 for no influence) was used to allow the farmers to express how much they agree or disagree with some factors identified from the literature that motives farmers to diversify into the non-farm businesses. To test the hypotheses presented earlier, we use multinomial regression.

Descriptive Statistics and Motives for Diversification

Given one of the research objectives were to examine diversification capabilities of FBOs, this study examines and reveal both household characteristics and farm business performance factors. The majority (68%) of the farm and non-farm businesses are micro/small informal businesses since the owners reported that the businesses are not registered with the government and do not pay business taxes. In the breakdown of the dataset, the percentage of FBOs engaged in a non-farm activity as the primary employment was the highest at 59.6 per cent. The average age was 56.6 years with a range between 32 and 72 years. The FBOs were male-dominated (91.7%) and only a small minority were women (8.3%). More than one-third (41.26%) do not have any qualification beyond primary school education. While less than half of the business owners (47.5%) received vocational training in specific areas such as technical works and general trading apprenticeships, however, most were self-trained (52.5%). About 79.6 per cent of the FBOs cultivate on 1.0 – 3.0 hectares of farmland.

The results showed that farm sizes have been decreasing over the years as business owners downsize farming and diversify into non-farm activity (with a mean of 1.16 hectares in the current year of study and 2.8 hectares five years ago). Despite the predominantly small size of farms, FBOs were further downsizing their farms and capacity. There were several reasons attributed to this trend – low farm income, seasonality of farming, farm income fluctuation, high prevalence of diseases and pests, lack of high yielding varieties and limited resource availability (such as labour due to rural-urban migration, and skills and low financial capital).

Most of the FBOs (92%) had an annual household income measured in Nigerian naira of between ₦18,000 and ₦650,000 (the equivalent of $50 and $1800, respectively). Further analysis of the household income revealed that the majority of the FBOs (63.7%) earn income below ₦300,000.00 (the equivalent of $830) per annum. Also, most of them operate in micro easier-to-start activities and only fewer engage in activities that require technical or higher starting costs. The non-farm activities include manufacturing of local crafts and equipment, textile and weaving, merchandise or trading, food and drink processing, repair work, woodwork (carpentry) and hairdressing, building, electrical work and other activities.

The findings reveal that non-farm income contributes about 36 per cent of household income (excluding salaried work) and as much as 64 per cent when salaried income is incorporated into household income. These results are expected, given that the studied region (South-eastern Nigeria), is known for a high rate of entrepreneurship and business activities (Igwe *et al.,* 2018 and 2019). Moreover, data revealed that most of the FBOs have a large family size (mean of 10.35 persons). A large family is associated with maintaining a high proportion of labour dedicated to off-farm and on-farm activities (FAO, 2018). This is typical in the rural agrarian communities as households tend to have a large family, as large households may be leveraged into more resources, such as labour and finance, which in turn facilitate entrepreneurship (see, e.g., Nagler and Naudé, 2017).

However, these variables differ between rural and urban locations. The downsizing of farmland, off-farm and non-farm activities and tendency to have small family size were more prevalent in semi-rural locations (communities closer to urban centres). Whereas farmers in remote rural locations tend to have large family size, high farm size and a focus on farming more than on non-farm activities. Data revealed that about 52.4 per cent of household's non-farm businesses are made up of only the owner and no paid employee. The result show similarity to pluriactivity outcomes in Europe at the beginning of the 1990s (Brun and Fuller, 1991; Dax *et al.,* 1995).

The mean number of employees was 2.2 persons, but most (1.90 persons) were family members or apprentices related to FBOs. This is in line with other studies that state that a typical rural business in Africa sources labour from family members (FAO, 2018). Also, within the age categories, farming appears to be a secondary occupation among young farmers (32 – 50 years), that supplements off-farm and non-farm income (primary occupation), while older farmers (50 years and above) appear to depend on farming as a primary occupation and less on non-farm or off-farm activities (secondary activities).

One of the objectives of this study is to examine the motives of the farmers in diversifying their farm businesses outside conventional agriculture and how these motives are dependent on the resource availability, economic and external factors. To examine farmers' motives for developing ventures outside agriculture, a measurement Likert-scale was adapted. The exact wording used for measurement items was developed to fit the context of this study but modified to reflect the context of the motivations and factors relevant to rural African context categorized into "push" (necessity) "pull" (opportunity created) developed on a Likert scale of 1 – 5 of the degree to which FBOs agreed with the proposed statements.

Mean scores and per cent of the population within and above the mean scores of the measurement items were used to capture farmers' motives (push and pull factors) for starting new nonfarm ventures (Table 1). The strongest "push" factors include the lack of capital to expand the farm business (4.126), followed by farming business did not provide enough income for the family (3.868). Another high score of "push" factor is unavailability or high cost of agricultural labour has forced the change in the business (3.509). Lack of capital factor may reflect the fact that there is a lack of access to formal credit and loans in rural areas in Nigeria. The most important of the "pull" factors is starting a new business to employ family members who have no jobs. Again, this may reflect the fact that there are high unemployment and under-employment in rural communities in Nigeria.

Determinants of Household Income and Employment Choices

Multinomial logistic regression was used to analyse the determinants of income and factors affecting the occupational choices made by rural FBOs. Multinomial regression was applied since it allows for more than two categories of the dependent or outcome variables. In this case, it enabled the examining livelihood diversity (determinants of non-farm and wage employment). However, there are two main limitations to letting dichotomous variables represent livelihood options according to Rahman and Akter (2014).

Table 1: Likert-scale Motives for starting new Nonfarm ventures.

Suggested motives	Pull/ Push	Average Score	Proportion within or above the mean score (%)
We always wanted to start a new nonfarm business	Pull	2.104	31
We started a new business to employ family members with no jobs	Pull	2.568	36
The farming business did not provide enough income.	Push	3.868	68
The unfavourable farming situation in the villages.	Push	3.145	61
There was a capital that could not be fully used on the farm.	Pull	1.786	28
The low demand and market demand for farm products.	Push	3.243	52
We perceived market demand for the new business.	Pull	2.277	38
We wanted to mitigate the fluctuations in farm income over the year.	Push	3.542	66
It was a way of being able to secure the family wealth.	Pull	2.146	24
It is just a lifestyle motive rather than profit-making.	Pull	1.106	18
The commercial value of land makes it unprofitable to use it for farming but to sale the land and start a nonfarm business.	Push	3.352	48
The unavailability or high cost of agricultural labour has forced the change in business.	Push	3.509	52
Lack of capital to expand the farm business caused downsizing and starting nonfarm business.	Push	4.126	69

Source: own composition

First, the zero cut-offs could be problematic since a farming household will diversify income sources by choosing agricultural and non-farm options, simultaneously. Second, the dichotomous dependent variable fails to consider the variation within the 0–1 range (choose an option or not).

In order to evaluate the measurement of model fit, a series of confirmatory factor analysis was undertaken to check violations of the normality assumption, missing data, and outliers. Also, single variable and F-test analysis with different categories of the dataset (e.g. small, medium and large dataset) was undertaken before the multinomial analysis. The test found strong support for the reliability and internal validity of measures. The standardised factor loadings are all above 0.59 (recommended minimum in the social sciences is usually 0.40) (Edelman *et al.*, 2010) and a Cronbach's alpha of 0.74. Figure 1 illustrates the model for household income and employment decision determinant.

For testing our hypotheses, we employed three dependent variables to control for the effect of the entrepreneur's personal and demographic characteristics. The measurement model was estimated using a confirmatory factor analysis to test whether the constructs exhibited sufficient reliability and validity (Edelman *et al.*, 2010). The second process identified the structural model(s) that best fit the data and examined the hypothesised relationships between the constructs.

The determinants of household income, as independent variables, include individual characteristics such as age, gender, family size, level of educational, family size (van der Zwan *et al.*, 2016). Besides, multiple external factors that support or hinder diversification or pluriactivity) described earlier, were also regressed in the model as shown in Figure 1 and Table 2.
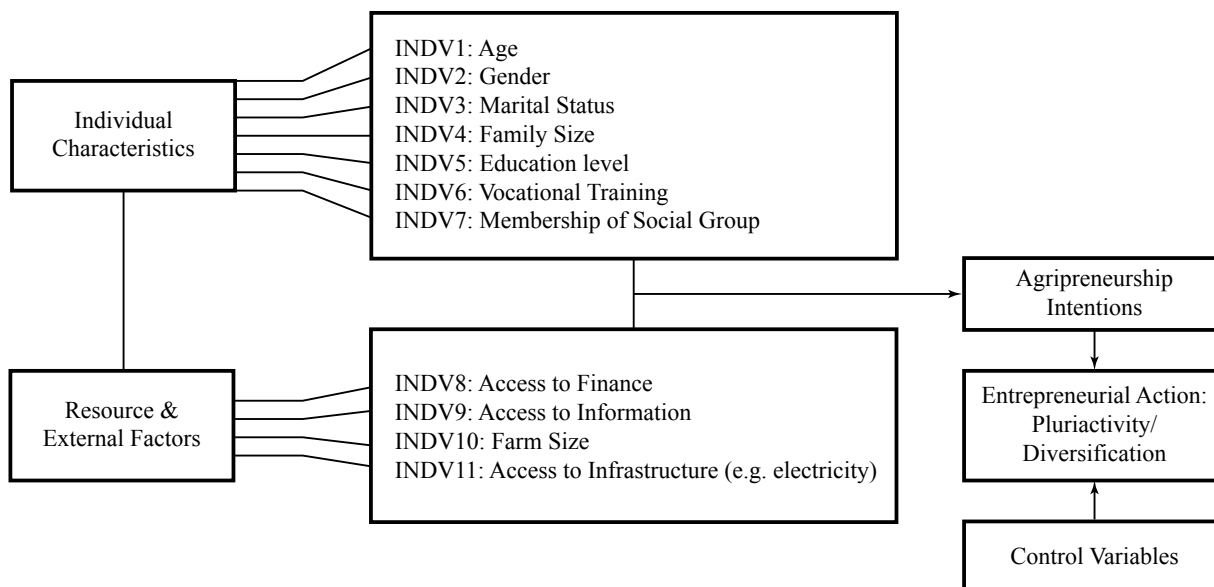

Figure 1: Determinants of Household Income and Diversification Decisions.

Source: own composition

Table 2: Determinants of Household Income: Multinomial Logit Analysis.

Variable	Nonfarm Enterprise		Wage Employment		Marginal Effects	
	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error
Constant	4.2623***	1.1232	1.4905	1.5365		
Age of FBOs	-0.0743***	0.0267	-0.1682***	0.0407	0.0216***	0.0650
Gender of FBOs	0.1848	0.5748	-0.2345	0.7604	-0.0289	0.1405
Marital Status of FBOs	-0.9095*	0.5316	1.2658	0.7861	0.2154**	0.1003
Year of Schooling	0.4241***	0.0533	0.9058***	0.0808	-0.1212***	0.0125
Technical Education	-0.8848***	0.3127	0.6952	0.4470	0.2117***	0.0762
Household size	0.1479*	0.0624	0.2215***	0.0798	-0.0390**	0.0151
Farm size	-1.0359***	0.2856	-0.3212	0.3609	0.2309***	0.0650
Access to credit	0.0516	0.3082	-0.2280	0.4708	-0.0031	0.0752
Membership of Social Group	0.0768	0.4893	-0.1540	0.7088	-0.1040	0.1203
Business access to Electricity	0.5385*	0.3190	0.6088	0.4714	-0.1333*	0.0741
Community access to Electricity	-0.3390	0.3383	0.3991	0.5156	0.0608	0.0804
Access to Services & information	-0.7321**	0.3154	0.2062	0.4337	0.1428*	0.0753

Note: Asterisks *, **, *** implies significance at 10%, 5% and 1% respectively.
Model Diagnostics: Log likelihood -283.484, LR Chi2 = 452.53, Prob Chi2 = 0.000 Pseudo R2 = 0.4439 Source: own composition
Source: own composition

The result of the analysis showed a model diagnostic of the log-likelihood of -283.484 and LR χ² of 452.53 measures which explain the significance and suitability of the model. Among the twelve variables modelled, age, education, technical education and farm size were significantly related to non-farm income (p< .001). Specifically, age has a significantly negative association with non-farm and wage employment at 1 per cent. The result implies that older people were less likely to take up non-farm and wage enterprises. Young people have a negative attitude and aspiration regarding farm work and farms in Nigeria are too small to employ skilled workers. Hence, young people are more attracted to work in non-farm rather farm businesses. FBOs who are married and have large household size are less likely to earn higher nonfarm farm income (path estimate -0.9095; p< .010), (see Table 2).

Large households are associated with holding large-scale farming, hence, may not have the extra resources to engage in non-farm activities. Similarly, FBOs with higher years of formal education (schooling) were more likely to engage in non-farm and wage enterprises. As noted by previous studies, rural enterprises are known to be less productive and wage earnings are lower when compared to urban enterprises; hence, educated people are more likely to migrate or seek for more skilled employment (Nagler and Naude, 2018). Household size affects income and employment choices because rural enterprises labour mostly comes from family due to the scarcity of labour in rural areas as a result of youths rural-urban migration.

Also, land is an important factor in the rural economy. If the value of the land increases, landowners must decide whether to sell or keep the land for their use. Due to lack of social security services in Nigeria, membership of social club enables households to productively engage in the pursuit of livelihoods. As such, many belong to cooperatives and social clubs to support each other in labour supply, production and marketing information. Finally, access to infra-structure (such as electricity and road) plays a major role in increasing productivity.

Discussion

This study examined the determinants of income and employment choices in a typical rural agriculturally based economy and outlined two alternative forms of employment among farmers already engaged in agriculture and provided robust econometric analysis with two of these alternatives regressed against many possible independent variables. The findings suggest that income derived from nonfarm employment and wage employment offer farmers extra income or security and unfavourable farming environment led many to reduce or engage in non-farm activities (either due to financial or security motives).

Therefore, households must choose to earn extra income through nonfarm or wage employment. However, the motives are either push or pull factors. In the past two decades, rapid population growth has put farming systems under stress, while rapid urbanisation and economic growth have provided new market opportunities in many countries (Binswanger-Mkhizea and Savastano, 2017). The strongest "push" and "pull" factors with mean scores of 2.0 and above has been applied to develop the determinants of Livelihood Choices Framework (Figure 2).

Although farming is the primary occupation, a relatively high share of income come from nonfarm and wage employment, indicating that smallholders diversify their income-generating activities beyond agriculture, particularly by running an own business in retail or manufacturing (FAO, 2018). Previous studies reveal that livelihood diversification reduces seasonality shocks in agricultural production; contributing to increased income, livelihood improvement (FAO, 2018; Hayatullah, 2020) and poverty reduction (Sutter *et al.,* 2019).
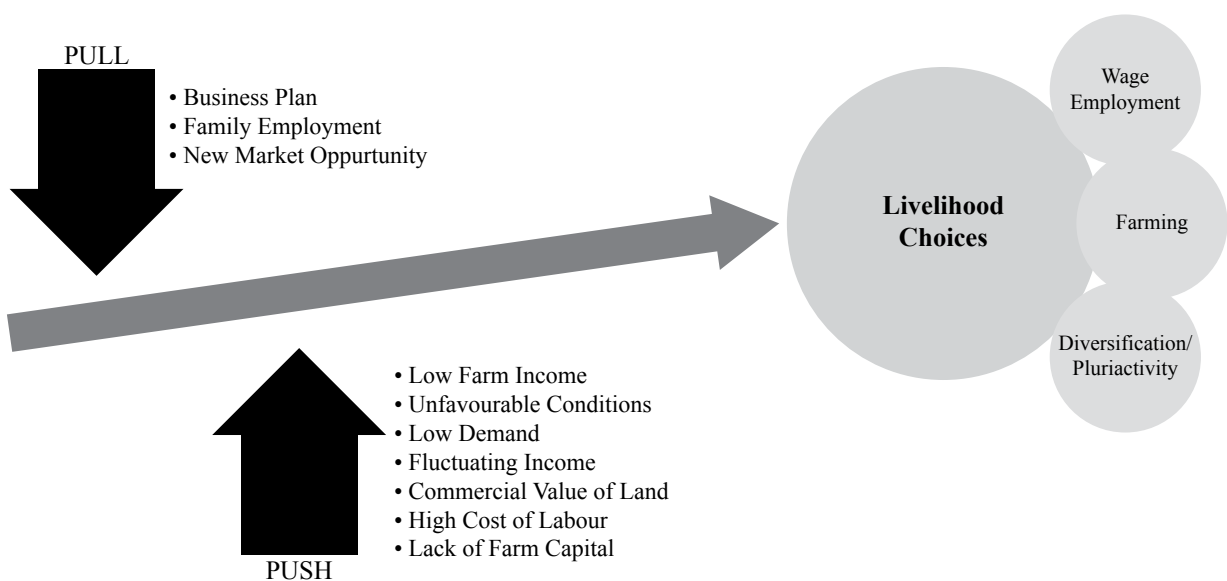

Figure 2: Determinants of Livelihood Choices.
Source: own composition

Notably, like many West African countries, Nigeria rural sector has numerous production challenges ranging from lack of credit facilities to poor linkage to market. Another problem is the ageing of the farmer's population as the majority of replacement generations of youth do not intend to get involved in agriculture. Also, nearly all the food produced by the household is consumed because productivity is low and large family size. Households are usually large because of the demand for family labour for farming and average educational attainment is low (FAO, 2018). Lack of access to education, capital and infrastructure constrain rural livelihoods. These factors contribute to the push or pull factors determining the choice of employment but also determines household income.

For many decades governments and international agencies have substantially focused their rural development and poverty alleviation plans on agricultural support policies. Past support programmes often linked to a "growth" model copying Western development objectives and trajectories. Very often these are doomed to fail. This is what Chang (2002) described as 'kicking away the ladder' by which rich countries climbed to development. Mozambique is cited as an example of how good governance rhetoric has been misused to retard development and poverty reduction (Hanlon, 2012). Some studies have proven that entrepreneurship can be a solution to extreme poverty (Sutter *et al.*, 2019). Therefore, with the increasing rise in rural poverty and inequality (especially in countries like Nigeria) a rural development policy rethink has become necessary.

Conclusions and Policy Implications

This article investigated the determinants of non-farm income and employment choices of FBOs. The findings were in line with previous literature, which has shown that pluriactivity and diversification among rural farmers are widespread and only a few of farmers globally work on the farm as the only source of income (Hayatullah, 2020; Radicic *et al.,* 2017). Among the twelve variables examined, age, education, technical education and farm size were significantly related to non-farm income. Due to the crude nature of farming and low farm incomes, young people are more attracted to work in non-farm rather farm businesses. Hence, non-farm diversification has implications towards youth employment and social mobility. Rural households produce on small farms and consume a large proportion of what they produce, leaving only a smaller percentage for sale in an underdeveloped market.

"Greater pressure is being applied on developing economies by the developed world and international policy establishment so that it controls the adoption of a set of good policies and institutions to foster their economic development" (Chang, 2002, p. 63). In this context, rural livelihood policies have critical and long-term implications concerned with reducing poverty in low-income developing countries. Lack of access to capital, low farm income and fluctuations in farm income were the three most influencing factors (push factors) towards diversification. Perhaps, rural development policies could focus on strengthening the capabilities of the small farmers (within the deepening, broadening and re-grounding boundaries) to produce high-quality products, engage in regional specialities and hybrid products that will improve food availability at the same time increase farm income. Good examples include the provision of extension services to educate farmers on new improved varieties and farming approaches, provision of subsidised input such as fertiliser, pesticides, improved seeds and availability of low interest and flexible agricultural loans/credit.

These measures could lead to improving the resilience of farming to market failures and environmental shocks brought on by weather, pest and diseases. However, non-farming activities are also important in rural development. Therefore, rural development policies should also incorporate measures that led to increasing non-farm business activities, thereby decreasing income inequality and poverty rates in the rural communities. Policies that focus on strengthening the quality of education, vocational and technical training and access to small machinery and tools will strengthen the capacity of the rural non-farm sector. This will lead to an improvement in wage employment opportunities in rural industries and reduced labour migration to urban industries thereby increasing farm labour availability in the rural areas. This is important given that the findings indicate that young farmers depend on non-farm activities as their primary employment in rural areas. Policies aimed at reviewing the land tenure system has implications concerning younger generation access to land that will enable them to engage in farming to maintain rural economic sustainability.

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