

ENTREPRENEURIAL VALUE CHAIN AND RURAL DEVELOPMENT: A STUDY OF RICE FARMERS IN SELECTED LOCAL GOVERNMENT AREAS OF NIGER STATE

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ABSTRACT

One of the major impediments to rural development is the lack of entrepreneurial value chain in production as most agricultural produce meant for the market are always in their primary form. Secondly, an estimated 30% of agricultural produce in rural areas is wasted because of constraints in weak rural value chains. The study examines entrepreneurial rice value chain and rural development in selected communities of Niger state. To achieve this objective, 433 respondents mainly farmers drawn from the population of 953 registered farmers were targeted using quantitative approach and purposive sampling. A structured questionnaire was used as instrument of data collection. Data collected was analyzed using both descriptive and inferential statistical tools. The study found that entrepreneurial value chain primary and secondary activities have significant positive effect on rural development in Niger State. The study recommends that policy makers in Niger State should have as a major policy objective that promotes entrepreneurial value chain in primary and secondary agricultural activities by investing on extension services and other capacity enhancement programmes to open up the rural areas for rapid development and poverty reduction.

Keywords: Entrepreneurial Value Chain, Rural Development, Rice Farmers, Niger States

Introduction

In Nigeria, previous rural development efforts have taken many forms including agricultural development, rural based industrialization, infrastructural development and integrated schemes combining all the elements of agriculture, industry and infrastructure. Strategies for rural development have also come in various shapes and sizes.

There appears to be no definitive answer to a most plausible and effective way of improving the lives and conditions of rural people even when contemporary events around the world have shown increasing concerns for the 75 per cent or more people inhabiting the rural areas. This is justified by the high correlation that exists between rural living and poverty with this situation particularly exacerbated for developing countries (World Bank, 2020).

Rural development is the process of improving the quality of life and economic well-being of people living in rural areas, often relatively isolated and sparsely populated areas. For rural development to occur and endure there has to be enhanced rural income, reduced poverty and unemployment, reduced inequalities, increased rural value-added production and increased infrastructural facilities (Moseley, 2003; Ataei, Ghadermarzi, Karimi, & Norouzi, 2020). Value chain has been acknowledged to be a prime mover of sustainable rural development (United States Agency for International Development (USAID), 2010; Onwualu, 2012). This refers to the full range of activities that are required to bring a product or service from conception through the different phases of production to delivery to final consumers and disposal after use (Morris, 2001). Value chain therefore has the propensity to turn rural dwellers to be mechanized farmers, input providers, processors, wholesalers, retailers, etc.

Recently, there has been increased attention on entrepreneurship as the central force of economic growth and development by most economies of the world. Rural development is more than ever before linked to entrepreneurship. Institutions and individuals promoting rural development now see entrepreneurship as a strategic development intervention that could accelerate the rural development process. Furthermore, institutions and individuals seem to agree on the urgent need to promote rural value chain. Development agencies see entrepreneurial value chain as an enormous employment potential, politicians see it as a very good strategy to prevent rural unrest as well as preventing rural urban migration; farmers see it as an instrument for improving farm earnings; and women see it as an employment possibility near their homes which provides autonomy, independence and a reduced need for social support (Bjorklund, 2020; Nicholaus & Wim, 2022).

However, the acceptance of entrepreneurship as a central development force by itself will not lead to rural development and the advancement of rural enterprises. What is needed in addition is an environment enabling entrepreneurship in rural areas. The existence of such an environment largely depends on policies promoting rural value chain (Cruickshank, Grandelis, Barvwitzki, & Bammann, 2022).

The broad objective of the study is to comparatively study the relationship between entrepreneurial value chain and rural development in Kebbi and Niger States. To achieve this, the study sought to achieve the following specific objectives:

- i. To evaluate the impact of entrepreneurial value chain on rural development in the selected areas of Kebbi and Niger States in the study area.
- ii. To evaluate the impact of secondary activity of the entrepreneurial value chain on rural development in the selected areas of Kebbi and Niger States in the study area.
- iii. To assess the influence entrepreneurial value chain exerts on rural development in the selected areas of Kebbi and Niger States

Thus, the following four hypotheses were formulated for empirical test:

H₀₁: The primary activities of entrepreneurial value chain have no significant impact on rural development in the selected areas of Kebbi and Niger States in the study area.

H₀₂: The secondary activity of entrepreneurial value chain has no significant impact on rural development in the selected areas of Kebbi and Niger States in the study area.

2. Literature Review

The value chain concept comes from business management and was first described and popularized by Michael Porter in his 1985 best-seller, the competitive advantage: creating and sustaining superior performance.

A value chain is a chain of activities that a firm operating in a specific industry performs in order to deliver a valuable product or service for the market. The idea of value chain is based on the process view of organizations, the idea of seeing a manufacturing (or service) organization as a system, made of subsystems each with inputs, transformation process and outputs (Gurria, 2012). It exists when all the stakeholders in the chain operate in the way to maximize the generation of value along the chain. This definition can be interpreted in a narrow or in a broad sense. Entrepreneurial value chain therefore, refers to the creativity and

innovation that takes place across a value chain. When applied to this study, it refers to creativity and innovation in inputs, production, processing, packaging and marketing that takes place across the rice value chain (Gurria, 2012). Many everyday products, from food stuffs, to cosmetics, medicines, clothing and furniture can be traced back through value chains to rural areas, where they are first produced and harvested. Value chains can be local, national or global, linking rural producers with traders and consumers worldwide (Zaman, Abdul, Otiwa, Odey, Adaaja, & Raji, 2019).

The concept of rural development in Nigeria lacks a unified definition as different scholars tend to view it from varying perspective. Some scholars look at rural development from the aspect of education/ training like Haddad (1990), and Hinzen (2000). Obinne (1991) perceived rural development to involve creating and widening opportunities for (rural) individuals to realize full potential through education and share in decision and action which affect their lives. He views efforts to increase rural output and create employment opportunities and root out fundamental (extreme) cases of poverty, disease and ignorance. Others like Timothy and Domenico (2021) view rural development as the provision of basic amenities or infrastructure, improved agricultural productivity and extension services and employment generation for rural dwellers. Dwivedi, Agrawal, Jha, Gastaldi, Paul, & D'Adamo (2021) argued that the definition of rural development has evolved through time as a result of changes in the perceived mechanisms and or goals of development. They further explained that a reasonable definition of rural development would be: development that benefits rural populations; where development is understood as the sustained improvement of the population standard of living or welfare. Todaro and Smith (2011) emphasized that rural development encompasses efforts to raise both farm and non-farm rural incomes through job creation, rural industrialization and other non-farm opportunities and increased provision of education, health and nutrition, housing and a variety of related social and welfare services (Ataeiet *al.*, 2020)

3. Methodology

This study adopted a qualitative research approach. This is because the research relied on primary data obtained through a structured questionnaire from farmers in Niger State of Nigeria. Purposive sampling technique was used to select two local government areas –

Gbako and Wushishi, where rice production is predominantly practised (Anyanwu, Ojo, Nmadu& Adebayo, 2023). The population of the study comprised of rice farmers in the selected areas. The total number of registered rice farmers in the chosen two local government areas considered for the study was 953 which consisted of 532 rice farmers in Gbako and 205 rice farmers in Wushishi LGAs. This constituted the population of the study. Data of registered rice farmers in Niger state was obtained from United States Agency for International Development (USAID) and Rice Farmers Association of Nigeria (RIFAN) respectively.

In determining the sample size for the study, Guilford and Flruchter (1973) formula for estimating sample size is used.

The formula: $n = \frac{N}{1 + \alpha^2 N}$

Where:

N = Required sample size

N = size of the population;

α = alpha (0.05)

By substituting the size of the farmers in each of the sampled local government areas, namely Gbako (532) and Wushishi (421) into the formula above, the following sample can be obtained:

$$\text{Sample size (Gbako)} = \frac{sN}{1 + \alpha^2 N} = \frac{532}{1 + 0.05^2 (532)} = 228$$

$$\text{Sample size (Wushishi)} = \frac{N}{1 + \alpha^2 N} = \frac{421}{1 + 0.05^2 (421)} = 205$$

The total sample size for the selected LGAs in the state is summed up to arrive at the total sample size for the study:

$$\text{Total sample size} = 228 + 205 = 433.$$

The total sample size for the study constituted 45% of the total population. Perelomde (1992) and Owojori (2002) affirm that a sample size that is not less than 10 percent of the study population is a good representative of the population. The study used purposive sampling in choosing the two local governments. The justification for choosing these local governments is that in terms of rice production in the state, they are ranked first and second respectively (Anyanwu *et al.*, 2023). The simple random sampling was used in selecting the respondents from the sample size.

The independent variable is entrepreneurial value chain while the dependent variable is rural development. The study investigated the effect of inbound logistics or primary activities such as input supplying, production, and processing; and outbound logistics or secondary activities (activities that delivers product to consumers) on rural development. Consequently, this study developed questionnaire using a 5- point Likert Scale to be administered on the sampled respondents and in order to gauge the perception of the respondents taking into cognizance the research objectives and hypotheses. Regression analysis using Statistical Package for the Social Sciences (SPSS) version 26, was used to estimate the effect of the independent variables on the dependent variable. Two different regression models were used to achieve the objectives of the study. The specification of the of the first model which was used to achieve the first objective was adapted from Anyanwu *et al.* (2023) is as stated below:

$$EVCP = \beta_0 + \beta_1 IPS + \beta_2 PRD + \beta_3 PRC + \mu \quad (1)$$

Where:

EVCP = Entrepreneurial Value Chain Primary Activities

β_0 = Constant

IPS = Input supplying

PRD = Production

PRC = Processing

$\beta_1, \beta_2, \beta_3$ = Coefficients of the independent variables (input supplying, production, and processing).

Similarly, the specification of the second model which was used to achieve the second objective was adapted from Anyanwu *et al.* (2023) is as stated below:

$$EVCS = \beta_0 + \beta_1 TRA + \mu. \quad (2)$$

Where:

EVCS = Entrepreneurial Value Chain Primary Activities

β_0 = Constant

TRA = Trading

The a priori expectations of the relationships between the variables are as expressed below:

Model 1: $\beta_0 = 0$; $\beta_1, \beta_2, \beta_3 > 0$

Model 2: $\beta_0 = 0$; $\beta_1 > 0$

4. Result and Discussion

4.1 Descriptive Result

Personal Information of the Respondents

The demographic features of the respondents are presented in Table 1 using frequency tables and percentages.

Table 1: Demographic Features of Respondents

Variable	Gbako LGA (n=226)		Wushishi LGA (n = 205)		Pooled (n = 431)
	Frequency	(%)	Frequency(%)		Frequency (%)
Sex of Respondents					
Females	75	33	27	13	10223.7
Males	151	67	178	87	329

76.3

Age

Less than 28	132	58.4	109	53.2	241
					55.9

28-54	94	41.6	96	46.8	190
					44.1

Marital Status

Single	43	19	32	15.6	75
					17.4

Married	165	73	166	81	331
					76.8

Divorced/Separated	18	8	7	3.4	25
					5.8

Educational Status

Primary	35	15.5	7335.6		108
					25.1

Secondary	51	22.7	16	8	67
					15.5

OND/NCE	45	20	8	3.9	53
					12.3

HND/Degree	31	13.7	5	2.4	36
					8.4

No Formal Edu.	6428.3	103	50.2	167
				38.7
Experience				
Less than 6	28	12.4	12	5.9
				40
				9.3
6-10	8437.2	44	21.4	128
				29.7
Greater than 10	11450.4	149	72.7	263
				61.0

Sources: Field Survey (2023)

Table 1 presents the general background information of respondents in this study. From the Table, it can be observed that male respondents formed the majority of the sample at 76.3% while female respondents represented 23.7%. With respect to age, 55.9% of respondents fall within the ages of 18 – 27. The rest were within the ages of 28 – 54 years representing 44.1% of the respondents. With respect to marital status of respondents, 76.8% were married, 17.4% single and 5.8% divorced. From the table, it can be observed that most of the respondents (38.7%) had no formal education, 25.1% with primary certificate, 15.5% with secondary school certificate, 12.3% with NCE/ND and 8.4% with BSc/HND. In response to experience in rice farming, 61% had more than 10 years' experience, 29.7% had between 5-10 years' experience and 9.3% had less than 6 years.

4.2 Test of Hypotheses

***Hypothesis I:** The primary activities of entrepreneurial value chain have no significant impact on rural development in the selected areas of Kebbi and Niger States in the study area.*

The above null hypothesis was tested using regression analysis to achieve the first objective of the study. Table 2 shows an extract of the regression estimate generated using SPSS version 26.

Table 2: Regression Estimates of the Impact of EVC Primary Activities on Rural Development

Variable	Coefficient	t-value
Constant	42.1037	(7.92) ***
Input supplying	0.3090	(2.31) **
Production	-0.0835	(-0.49)
Processing	0.6093	(5.51) ***
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$R^2 = 0.523$	F-Statistic –12 (0.000)	

Source: Authors' Extraction from SPSS Output (2023)

The null hypothesis I tested for this study was that the primary activities of the entrepreneurial value chain have no significant impact on rural development in Niger State. An entrepreneurial Value Chain (EVC) primary activity encompasses inbound logistics such as input supplying, production and processing. The result of the regression estimate presented in Table 2 showed that the explanatory variables account for 52.3% of the total variation in the dependent variable as indicated by the R^2 value of 0.523. The f-value of the model is shown to be significant at 0.000 indicating a good fit. The result also shows that in Niger State, input supplying with t-value of 2.31 and processing activity with t-value of 5.51 were

found to be statistically significant at 5% level of significant. This implies that a unit increase in input supplying and processing will lead to 0.3090 units and 0.6093 units respectively in rural development. By inference, entrepreneurial value chain primary activities such as input supplying and processing had significant positive effect on rural development in Niger State, while production had a negative effect which is also not significant on rural development. Generally, it can be inferred from the results that EVC primary activities has a significant effect on rural development in Niger State. Thus, the null hypothesis was rejected, while the alternative hypothesis which stated that there is a significant impact of EVC primary activities on rural development in Niger State was accepted.

Hypothesis 2: The secondary activity of entrepreneurial value chain has no significant effect on rural development in Niger State.

The above null hypothesis was also tested using regression analysis to achieve the first objective of the study. Table 3 shows an extract of the regression estimate generated using SPSS version 26.

Table 3: Regression Estimates of the Impact of EVC Secondary Activities on Rural Development

Variable	Coefficient	t-value
Constant	58.0439	14.40***
Trading	0.3199	2.59***
$R^2 = 0.443$		F-statistic = 13 (0.047)

Source: Authors' Extraction from SPSS Output (2023)

The result of the regression estimate presented in Table 3 showed that the explanatory variables account for 44.3% of the total variation in the dependent variable as indicated by the R^2 value of 0.523. the f-value of the model is shown to be significant at 0.047 indicating a good fit. The result of the regression estimate presented in Table 3 showed that in Niger State, trading with t-value of 2.59 was found to be statistically significant at 5% level of probability implying that EVC secondary activity like trading had a significant positive effect on rural development in Niger State. It revealed that a unit increase in EVC secondary activities (trading) improves rural development by 2.59 units. Generally, there was significant impact of entrepreneurial value chain secondary activity (trading) in Niger State. Thus, the null hypothesis was rejected, while the alternative hypothesis which stated that there is a significant impact of entrepreneurial value chain secondary activity on rural development in Niger State was accepted.

4.3 Discussion of Findings

The analysis of the results shows significant relationship between the primary and secondary activities of the value chain and rural development. This specifically, was what hypotheses 1 and 2 tested. These results conform to the findings of Jacques (2011) in an exploratory study of the primary and secondary activities of the value chain in developing countries and established a strong relationship between value chain and rural development. Onwualu (2012) in an exploratory survey of rice, maize and cassava value chains in Nigeria found a significant relationship between agricultural value chain and rural development.

The study also found out that there is significant relationship between entrepreneurial value chain and rural development. This result conforms to Titianne (2013) study of small holder dairy farmers in Kenya as well as Zaman *et al.* (2019) in Nigeria who both established a nexus between entrepreneurial value chain and rural development. Borbora and Das (2014) Atayiet *al.* (2021) discovered strong relationship between entrepreneurial value chain and rural development in India and Nigeria respectively.

5. Conclusion and Recommendation

Based on the results obtained from the empirical test of the two hypotheses, the inference could be drawn that in Niger States, there is a significant relationship existing between entrepreneurial value chain and rural development. With the exception of production, other

primary activities such input supplying and processing; and secondary activities such as trade all have significant effects on rural development in NigerStates. It is recommended that policy makers in Niger State should have as a major policy objective that promotes entrepreneurial value chain in primary and secondary agricultural activities by investing on extension services and other capacity enhancement programmes to open up the rural areas for rapid development and poverty reduction.

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