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ENTREPRENEURIAL VALUE CHAIN AND RURAL DEVELOPMENT: A COMPARATIVE STUDY OF RICE FARMERS IN SELECTED AREAS OF KEBBI AND NIGER STATES

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Abstract

One of the major impediments of 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 Kebbi and Niger states. To achieve this objective, one thousand, one hundred and twenty-four (1124) respondents mainly farmers drawn from the population of five thousand, nine hundred and ten (5910) registered farmers were targeted using the mixed approach and purposive sampling. The questionnaire and focus group discussion were used as instruments of data collection. Data collected was analyzed using both descriptive and inferential statistical tools. The study found that entrepreneurial value chain exists in the selected communities. The study recommends the need for constant innovation in technological inputs of the value chain elements (inputs, production, processing, and packaging) to raise productivity, stay competitive and enhance rural development.

Key words: Entrepreneurial Value Chain, Rural Development, Kebbi State, Niger State, Focus Group Discussion

1. 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 (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 examine the difference in the entrepreneurial value chain in the selected areas of Kebbi and Niger States in the study area.
- ii. To assess the significance of the difference in rural development in the selected areas of Kebbi and Niger States in the study area.
- iii. To evaluate the impact of entrepreneurial value chain on rural development in the selected areas of Kebbi and Niger States in the study area.
- iv. 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.
- v. 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: There is no significant difference in the entrepreneurial value chain in the selected areas of Kebbi and Niger States in the study area.

H₀₂: There is no significant difference in the rural development in the selected areas of Kebbi and Niger States in the study area.

H₀₃: 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.

H₀₄: 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 produce and harvested. Value chains can be local, national or global, linking rural producers with traders and consumers worldwide (Zaman, Abdul, Otiwa, Odey, Aadaaja, & 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 (Ataei et al., 2020)

3. Methodology

This study adopted a mixed methods research approach. This is because the research relied on primary data and focus group discussion to obtain data from farmers in Kebbi and Niger States of Nigeria. The population of the study comprises of rice farmers in the selected areas. The population of rice farmers in these chosen areas can be regarded as finite more so that there are governmental institutions and development agencies set up to register rice farmers in the two states.

The total number of registered rice farmers in the chosen four local government areas considered for the study is 5910, which constitute the population of the study. Data of registered rice farmers in Niger and Kebbi states was obtained from USAID and RIFAN respectively.

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

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

Where:

N = size of the population; and
 α = alpha (0.05)

By substituting the size of the farmers in each of the sampled local government areas, namely Gbako (532), Wushishi (421), Suru (341) and Argungu (350) into the formula above, the following sample can be obtained:

$$\text{Sample size (Gbako)} = \frac{N}{1 + \alpha^2 N} = \frac{532}{1 + (0.05^2)(532)} = \frac{532}{1 + 1.33} = 228$$

$$\text{Sample size (Wushishi)} = \frac{N}{1 + \alpha^2 N} = \frac{421}{1 + (0.05^2)(421)} = \frac{421}{1 + 1.0525} = \frac{421}{2.0525} = 205$$

$$\text{Sample size (Suru)} = \frac{N}{1 + \alpha^2 N} = \frac{2302}{1 + (0.05^2)(2302)} = \frac{2302}{1 + 1.33} = 341$$

$$\text{Sample size (Argungu)} = \frac{N}{1 + \alpha^2 N} = \frac{2817}{1 + (0.05^2)(2817)} = \frac{2817}{1 + 1.33} = 350$$

Sample size for the selected areas in the two states is summed up to arrive at the total sample size for the study:

$$\text{Total sample size} = 228 + 205 + 341 + 350 = 1124.$$

The total sample size for the study constitutes 19 percent 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 four local governments. The justification for choosing these local governments is that in terms of rice production in the states, they are ranked first and second respectively. 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 presence or otherwise of inbound

logistics (such as inputs), processing (transformation activities that change inputs into outputs), outbound logistics (activities that delivers product to consumers), and support services (access to finance, technology and infrastructure) and their relationship to rural development. Consequently, this study developed questionnaire using a 5 point Likert Scale to be administered on the sampled respondents and focus group discussion in order to gauge the perception of the respondents taking into cognizance the research objectives and hypotheses.

4. Result and Discussion

4.1 Descriptive Result

Personal Information of the Respondents

Table 1: Distribution of the Respondents According to their Personal Information

Variables	Kebbi State (n=691)		Niger State (n=431)		Pooled (n=1122)	
	Frequency	(%)	Frequency	(%)	Frequency	(%)
Sex of the respondents						
Males	616	89.1	390	90.5	1006	89.7
Females	75	10.9	41	9.5	116	10.3
Age of the respondents						
< 28	392	56.7	218	50.6	610	54.4
28 – 54	299	43.3	213	49.4	512	45.6
Marital status of the respondents						
Single	220	31.8	83	19.3	303	27.0
Married	432	62.5	336	78.0	768	68.4
Divorced/Separated	39	5.6	12	2.8	51	4.5
Educational status of the respondents						
Primary	87	12.6	157	36.4	244	21.7

Secondary	184	26.6	39	9.0	223	19.9
OND/NCE	141	20.4	16	3.7	157	14.0
HND/Degree	83	12.0	3	0.7	86	7.7
No Formal	196	28.4	216	50.1	412	36.7
Experience of the respondents						
< 6	134	19.4	15	3.5	149	13.3
6 – 10	259	37.5	82	19.0	341	30.4
> 10	298	43.1	334	77.5	632	56.3

Sources: Field Survey, 2023

4.2 Test of Hypotheses

Hypothesis I

The null hypothesis I tested for this study was that there is no significant difference in the entrepreneurial value chain in the selected areas of Kebbi and Niger States in the study area. The result of the pair-wise t – test is presented in Table 2 showed t – statistic value of 46.452 at 1% level of probability. This implies that there was a

significant difference in the mean entrepreneurial value chain of the two States selected (Kebbi and Niger States). Entrepreneurial value chain varies greatly between Kebbi and Niger States. Thus, the null hypothesis was rejected, while the alternative hypothesis which stressed that there is a significant difference in the entrepreneurial value chain of the two States was accepted.

Table 2: T-test Estimate for Hypothesis I

	Mean	Standard dev.	t – value	Decision
Entrepreneur Value Chain (EVC) Score for Kebbi State	153.50	20.9824	46.452***	Reject
Entrepreneur Value Chain (EVC) Score for Niger State	112.65	7.6670		
Mean difference	40.85	13.3154		

Source: Field survey, 2023.

Hypothesis II

The null hypothesis II tested for this study was that there is no significant difference in the rural development in the selected areas of Kebbi and Niger States in the study area. The result of the pair-wise t – test is presented in Table 3 and it showed t – statistic value of 26.043 at 1% level of probability. This implies that there was a significant difference in the mean perception of rural

development in the two States selected. Rural development is key to improving the lot of small-holders farmers especially through entrepreneurial value chain which tends to vary between the two States. Thus, the null hypothesis was rejected, while the alternative hypothesis which stressed that there is a significant difference in the level of rural development in the two States was accepted.

Table 3: T-test Estimate for Hypothesis II

	Mean	Standard dev.	t – value	Decision
Rural Development Score for Kebbi State	84.04	12.2718	26.043***	Reject
Rural Development Score for Niger State	68.42	7.8123		
Mean difference	15.62	4.4595		

Source: Field survey, 2023.

Hypothesis III

The null hypothesis III tested for this study was that the primary activities of the entrepreneurial value chain have no significant impact on rural development in the selected areas of Kebbi and Niger States in the study area. 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 4 showed that in Kebbi State, production activity with t-value of 9.74 and processing activity with t-value of 12.33 were found to be statistically significant at 1% level of probability, respectively. This implies that entrepreneurial value chain primary activities such as production and processing had significant impact on rural development in Kebbi State, while input supplying had no significant impact on rural

development. Furthermore, 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% and 1% level of probability, respectively. This implies that entrepreneurial value chain primary activities such as input supplying and processing had significant impact on rural development in Niger State, while production had no significant impact on rural development. Generally, there was significant impact of entrepreneurial value chain primary activities in the two States selected (Kebbi and Niger States). Thus, the null hypothesis was rejected, while the alternative hypothesis which stated that there is a significant impact of entrepreneurial value chain primary activities on rural development in the two States was accepted.

Table 4: Regression Estimates of the Impact of EVC Primary Activities on Rural Development

Variables	Kebbi	Niger
Constant	23.2511 (9.12)***	42.1037 (7.92)***
Input supplying	-0.0449 (-0.72)	0.3090 (2.31)**
Production	1.1143 (9.74)***	-0.0835 (-0.49)
Processing	0.8059 (12.33)***	0.6093 (5.51)***

Source: Field Survey, 2023

Hypothesis IV

The null hypothesis IV tested for this study was that the secondary activity of the entrepreneurial value chain have no significant impact on rural development in the selected areas of Kebbi and Niger States in the study area. Entrepreneurial Value Chain (EVC) secondary activity considered in the study was trading concerned with delivering of products to consumers, an outbound logistics. The result of the regression estimate presented in Table 5 showed that in Kebbi State, trading with t-value of 27.54 was found to be statistically significant at 1% level of probability. This implies that entrepreneurial value chain secondary activity like trading had significant

impact on rural development in Kebbi State. Furthermore, in Niger State, trading with t-value of 2.59 was found to be statistically significant at 1% level of probability implying that entrepreneurial value chain secondary activity like trading had significant impact on rural development in Niger State. Generally, there was significant impact of entrepreneurial value chain secondary activity (trading) in the two States selected (Niger and Kebbi States). 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 the two States was accepted.

Table 5: Regression Estimates of the Impact of EVC Secondary Activities on Rural Development

Variables	Kebbi	Niger
Constant	38.7308 (23.10)***	58.0439 (14.40)***
Trading	1.0335 (27.54)***	0.3199 (2.59)***

Note: *** implies statistically significant at 1%, Figures in parenthesis are the t – values.

Objective V, which was meant to assess the influence that entrepreneurial value chain exerts on rural development in the selected areas of Kebbi and Niger States was achieved using Focus Group Discussion (FGD). It is a qualitative research method in social sciences with particular emphasis on developmental programme evaluation. To assess the influence of entrepreneurial value chain of rice on rural development, six key development indicators such as increase rice output, increase income, improved healthcare facilities, increase access to portable water; good road network and electricity were used as proxy to rural development. These indicators were central to FGD checklist used to elicit qualitative information from the respondents.

The result of entrepreneurial value chain influence on rural development based on FGD showed that there has been increase in output and yield of the rice farmers in the two States selected. This is evident from the focus group discussion as one of the farmers posited that:

“Entrepreneurial value chain has helped improve my rice output and yield. I have access to production inputs on time and extension services that help me boost rice production”.

Rice farmers now applied the efficient management principles they learned to grow healthy and high yielding rice varieties using sustainable production inputs. This is in line with FAO (2012) who posited that stakeholders in developing countries are recognizing the huge potential of rice value chain to spur rural industrial development as well as to raise rural incomes.

Furthermore, the rice farmers in the two States selected reported that entrepreneurial value chain have positively influence rural development through income

generation of the farmers. As a result of increase in rice output, there has been corresponding increase in farmers’ income. This was noted during focus group discussion where most of the rice farmers from the two states selected stated that:

“We have increased our income from rice production by adequately participating in entrepreneurial value chain. Increase in income has made us to contribute to the development of our area”.

This implies that increase in rice output and yield could lead to an increase in come of the rice farmers as more produce are taken to market for sale. This is also in line with FAO (2010) who posited that, increase in yields over the years could boost smallholder earnings and lift many rice farmers out of poverty.

In terms of entrepreneurial value chain influence on rural infrastructure such access to healthcare facilities, portable water, good road network and electricity, there was varying opinion from the respondents in the two states selected. This is evident from the focus group discussion where the farmers posited that:

“Entrepreneurial value chain had no influence on the number of primary healthcare facilities available to us. There are no new primary healthcare centers apart from the existing one in our areas. However, there has been high increase in the number of people seeking medical counsel, ante-natal and post-natal health services”.

One of the farmers in Kebbi State stated that:

“We usually covered long distance of up to 5 kilometers before accessing primary

healthcare. In most cases, there is no Doctor available. We are left at the mercy of community healthcare service provider”.

Building or construction of healthcare centers and facilities especially in the rural area is one of the main objective of Millennium Development Goals (MDGs) which canvass for increase access to quality healthcare services by all. Increase access to quality healthcare services could translate to healthy citizenry with higher expectancy ratio.

The result of the focus group discussion indicated that entrepreneurial value chain influences access to portable water by the rice farmers in the two States selected as they posited that:

“There has been increase in the number of people using tube wells and boreholes in the areas. There was tremendous decrease from the previous number of people fetching stream water”.

One of the farmers in Niger State posited that:

“There is a reduction in reported cases of water-borne diseases due to increase access to cheap and clean water”.

Access to portable water at a cheap cost enhances personal hygiene and general cleanliness leading to reduction in water-borne diseases like cholera, ringworm, intestinal parasites and other ailments cause by water.

Good road network and transportation system is very pertinent in the rural area for ease of transporting farm produce to markets. The result of the focus group discussion on entrepreneurial value chain influence on access to good road network by the rice farmers in the two States selected revealed that:

In Kebbi State, the rice farmers indicated that:

“There is construction and rehabilitation of roads in the State. We have easy movement of people and goods in and out of the communities. There is an increase in the number of vehicle plying the road in the communities, this has reduce cost of transportation”.

In Niger State, the rice farmers lament bad road and high cost of transportation. One of the farmers stated that:

“Most of the roads in the State are very bad. Movement of people and produce is very difficult. Cost of transportation is very high”.

Construction of new roads and rehabilitation of the existing ones could help facilitates easy movement of people and goods thereby reducing cost of transportation because commuter charges lower fares as a result of good roads and travel time.

Furthermore, the result of the focus group discussion on entrepreneurial value chain influence on access to electricity by the rice farmers in the two States selected revealed that electricity supply have been generally bad. There is no clear distinction in the nature and quality of electricity supply as it has been an epileptic power supply with both States rationing the supply. One of the rice farmers in Niger State posited that:

“Electricity supply is a problem in the State despite the fact we are the Power State. The maximum hours of electricity we get in a day in our community is 4 hours”.

One of the farmers in Kebbi State posited that:

“Electricity supply in my community is ration; we have 6 hours with light and 6 hours without light.

Electricity supply is very important particularly in rural areas in order to boost the performance of rural industries that are mostly into processing. Most entrepreneurial activities depend on electricity to perform adequately without which they find it difficult to cope. The alternative power generation is costly and most entrepreneurs could not afford it.

Generally, entrepreneurial value chain orientation in the States could help stimulate local talents and growth of indigenous companies for overall economic growth and development. Sustainable rural development requires integration and synergies between sectors as well as a

combination of social, economic and environmental issues (Atayi, Ilugbusi, Nkire, & Akanmu, 2021).

4.3 Discussion of Findings

Our hypothesis one is rejected based on the result of our model. The analysis indicates existence of entrepreneurial value chain in the selected communities of Kebbi and Niger States. This result does not conform to any previous study because to the best of our knowledge, this is the first attempt of looking at value chain and rural development from entrepreneurial perspective.

However, other result from the analysis shows conformity and non-conformity from previous studies. For instance, the study found no significant difference in the level of rural development among communities under study. This result conforms to the findings of Obinne (1991). In a related work by Shehu (2014) in comparing levels of rural development among some communities in Nigeria, identified different level of rural development across communities. He attributed the differences in variation of factors of development such as infrastructure, culture, value chain activities, etc.

The analysis also shows significant relationship between the primary and secondary activities of the value chain and rural development. This specifically, was what hypothesis 3 and 4 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) Atayi et 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 four hypotheses and the result obtained from Focus Group Discussion, the inference could be drawn that in both Kebbi and Niger States, there is a significant relationship existing between entrepreneurial value chain and rural development. With the exception of supplying, other primary activities such as production and processing; and secondary activities such as trade all have significant effects on rural development in the two states. It is recommended that policy makers in the two states should have as a major policy objective the promotion of 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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