



Value Chain and Performance in Agro Allied Small and Medium Scale Enterprise in Sokoto State, Nigeria

Lumi Peter Roko¹, Michael Isaac Opusunju²

ABSTRACT

This study investigates the impact of value chain on the performance of Agro Allied SMEs in Sokoto State. The concept of value chain is too board and some managers are confused on the right value chain activities to choose and apply in their business. Using point time data collected from primary source with the used of questionnaire and applying Ordinary Least Square (OLS) finding reveals that there is significant relation between value chain and performance of Agro Allied SMEs in Sokoto State. Other findings primary activities of value chain contribute significantly to the performance of Agro SMEs in Sokoto State and secondary activities of value chain contribute significantly to the performance of Agro SMEs in Niger State. Results recommends that Agro SMEs in Sokoto State should continue to improve on primary and secondary activities of value chain since it contributes significantly to the performance of Agro SMEs in Sokoto State.

Keywords: Primary activities, Secondary Activities and performance, Value chain.

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1.0 Introduction

Both developed and undeveloped economies, the participation of Agro allied small and medium scale enterprises (SMEs) in promoting value chain is seen as critical to the development of any economy. Agro-Allied SMEs are strategic to the realization of value chain activities such as primary and secondary activities. The need to involve the Agro allied small and medium scale enterprises in promoting the value chain cannot be over-emphasized. The value chain activities on agro SMEs produce provides ample opportunity for revenue generation, employment generation and effective post-harvest management.

The value chain concept and application are not properly applied in Agro Allied SMEs in Sokoto State, the concept of value chain is too board and some managers are confused on the right value chain activities to choose such as primary and secondary value chain activities in Sokoto State.

¹ Department of Business Administration, University of Abuja, Nigeria. E-mail: rokolumi@yahoo.com

² Department of Business Administration, Nasarawa State University, Keffi, Nigeria. E-mail: opusunjumike@gmail.com

Previous studies such as [Akenbor and Okoye \(2011\)](#) study the impact of value chain on comparative advantage using secondary data. [Akenbor and Okoye \(2011\)](#) used multiple regressions with the help of SPSS. This research study fills the research gap in knowledge by studying the impact of value chain on the performance of Agro Allied SMEs in Sokoto State using multiple regressions with a help of e-view statistical package.

The main objective of this study is to examine the impact of value chain on the performance of Agro allied SMEs in Niger State, The specific objectives are to: determine the impact of value chain primary activities on the performance of Agro allied SMEs in Sokoto State and examine the impact of value chain secondary activities on the performance of Agro allied SMEs in Sokoto State.

The scope of this study covers the impact of value chain on the performance of agro-allied SMEs in Nigeria, Sokoto State. This study is considered based on the concerted efforts of the federal government through the Central Bank of Nigeria and other relevant agencies to diversify the mono economic nature of the country, through focused and purposeful investment in the Agro Allied sector and support of SMEs in the agribusiness.

The knowledge obtained from this study will enlighten Agro Allied SMEs to understand the need and importance of participating in the value chain business to reduce the increase in annual wastages of produce, boost supply of raw material, control the buying power of the customers, minimized the threats of new competitors, reduced the threats of alternative product and enhance the performance of Agro Allied SMEs in order to increase productivity, efficiency, effectiveness and increase output. This research will also be useful to the various tiers of Government, the CBN, SMEDAN and other established government Agencies in enhancing their regulatory and supervisory roles as well as formulation of policies to ensure that measures are put in place to increase Agro Allied SMEs performance in promoting value chain and overcome challenges of associated with entry barriers and to enhance the performance of SMEs in Sokoto State. Students wishing to carry out research in the area of value chain and the performance of Agro Allied SMEs for academic purpose, professional bodies and researchers shall also benefit immensely from the study.

The null hypotheses are stated below:

- Ho₁ There is no significant relationship between value chain primary activities and performance of Agro allied SMEs in Sokoto State.
- Ho₂ There is no significant relationship between value chain secondary activities and performance of Agro allied SMEs in Sokoto State.

2.0 Concept of value chain

According to [Kaplinsky \(2000\)](#) a value chain is the full range of activities which are required to bring a product or service from conception, through the intermediary phases of production, delivery to final consumers, and final disposal after use. The value chain concept also acknowledges that production must be linked to demand and the critical role of organizing the flow from farmer to consumer opportunities ([Porter, 1985](#)). Value chain comprise of companies (or individuals) that interact to supply goods and services are variously referred to as productive chains, value chains, marketing chains, supply chains, or distribution chains ([Eboh, 2012](#)).

Value chain describes the full range of value-adding activities required to bring a product or service through the different phases of production, including procurement of raw materials and other inputs, assembly, physical transformation, acquisition of required services such as transport or cooling, and ultimately response to consumer demand ([Kaplinsky & Morris, 2002](#)). According to [UNIDO, \(2009\)](#) believes that a value chain describes the entire range of activities undertaken to bring a product from the initial input-supply stage, through various phases of processing, to its final market destination, and it includes its disposal after use. To them, value chains encompass activities that take place at the farm or rural level, including input supply, and continue through handling, processing, storage, packaging, and

distribution. According to Miller and Silva (2007) value chain, is the set of actors (private, public, and including service providers) and the sequence of value-adding activities involved in bringing a product from production to the final consumer. In agriculture they can be thought of as a 'farm to fork' set of processes and flows.

The value chain is a concept which can be simply described as the entire range of activities required to bring a product from the initial input-supply stage, through various phases of production, to its final market destination. Value is any activity that increases the market form or function of the product or service; and in today's business climate, there is a need to maximise the value of every process in a business (Jacoby, 2005). According to Hill & Jones (2001) the term "value chain" refers to the concept that a company's chain of activities for transforming inputs into outputs with purpose to deliver value to the customers.

3.0 Concept of performance

Hofer (1986) describes performance as a contextual concept associated with the phenomenon being studied, for example, for financial performance; performance is a measure of the change of the financial state of an organization. The main objective of any firm is not only to survive, but also to sustain its existence by improving performance. Organizational performance is therefore firm specific since the strategic choices a firm makes dictates which performance measures it will implement.

Performance is described as an organization's ability to acquire and utilize its scarce resources and valuables as expeditiously as possible in the pursuit of its operations goals (Griffins, 2006). Performance is a multi-dimensional concept (Borman et al, 1993). They distinguish between task and contextual performance. To them, Task performance refers to an individual's proficiency with which he or she performs activities which contribute to the organization's technical core. This contribution can be both direct (in the case of production workers), or indirect (in the case of managers or staff personnel). Contextual performance refers to activities which do not contribute to the technical core but which support the organizational, social, and psychological environment in which organizational goals are pursued. Contextual performance includes not only behaviours such as helping co workers or being a reliable member of the organization, but also making suggestions about how to improve work procedures (Campbell, Gasser & Oswald, 1996).

4.0 Concept of small and medium scale enterprise

The Central Bank of Nigeria, in its 2005 guideline on Small and Medium Enterprise Investment Scheme (SMEIS), described SME as any enterprise with a maximum asset base of 200million naira (excluding land and working capital) with no lower or upper limit of staff (Etuk, Etuk & Baghebo 2014). Chukwemeke (2004) and Gulani and Usman, (2012) defines small scale business as one whose total asset in capital, equipment, plant and working capital are less than N250,000 and employing fewer than 50 full time workers. Ogundele (2007) defines SMEs as one who has a minimum of 5 employees with minimum capital outlay of not less than N5, 000.00. However, for the purpose of this study, we shall adopt the definition of Small and Medium industries Enterprises Investment Scheme (SMIEIS). Ogechukwu (2006) define small and medium scale enterprises in different countries. These includes number of employees, annual turnover, local operations, sales volumes, financial strength, managers and owners autonomy, relatively small markets compared to their industries and capital usually supplied by individual or shareholders etc. According to Jasra, Khan, Hunjra, Rehman and Azam (2011), Small and Medium Enterprise (SME) represent a business and not a public limited company.

Esuh and Adebayo (2012) SMEs is define in terms of employment, asset value and dollar sales. They also noted that, Small and Medium Enterprise (SMEs) represent a business and not a public limited company. They are also believes that businesses having not less than 250 workers in the case of manufacturing and service industries including trading businesses, and they should be able to meet any of the following

conditions. Small and Medium Scale business is an enterprise employing between five and one hundred workers with an annual turnover of about four hundred thousand Naira (N400, 000). The Federal Ministry of Commerce and Industry defines SMEs as firms with a total investment (excluding cost of land but including capital) of up to N750, 000, and paid employment of up to fifty (50) persons (Mba & Cletus, 2014).

5.0 Value chain and performance

Imhmed (2012) study the impact of the value chain activities (porter's five forces) on the competitive performance of the industry of Libya. Accordingly a conceptual model would be created to analyze the competitive performance of LISCO one of the biggest Iron and Steel industry of Libya. Quantitative research will be the approach of this paper. Focus group discussion with the management bodies will be conducted to determine pertinent factors as explanatory variables (five forces model of Michael Porter) for successful competitive performance of the manufacturing industries of Libya. Explanatory (independent) variable: Supply of raw materials, buying power of customers, threats of new competitors, threats of alternative products, competition amongst competitors and mediating variable: value chain activities, product innovation. Explained (dependent) variable as well as competitive performance of the manufacturing industry of Libya. Data will be collected through a survey questionnaire from a random sampling technique in the manufacturing industries of Libya. Based on the analysis of the views of the management bodies of the industries of Libya, the model concerns the impact of the value chain activities on the competitive performance of the industry of Libya. Different from other industries, manufacturing industries is having some uniqueness in the competitiveness. The new and innovative products make them more competitive in the global market.

Akenbor and Okoye (2011) examine the impact of the Value-Chain Analysis on Competitive Advantage of manufacturing firms in Nigeria. To achieve this purpose, hypothesis was formulated and a review of related literature was made. The population of this study consists of those manufacturing companies quoted in the Nigerian Stock Exchange Factbook of 2009. A total of One hundred (100) of such companies was identified. The data for this study were collected through the secondary sources such as the companies' Annual Reports of various years and CBN Statistical Bulletin of 2009. The hypothesis stated in this study was statistically tested with the Multiple Regression Analysis. Our findings revealed that the Value-Chain Analysis has a positive but insignificant impact on Competitive Advantage of a manufacturing firm in Nigeria.

6.0 Theoretical Framework

6.1 Value configuration theory

Value configuration theory builds on, extends and transforms Porter's value chain framework (1985) for the analysis and development of organization. The theory was initially motivated by problems in applying the value chain activity template to firms selling services. The theory is now also linked not only to firm-level analysis of organizational performance, but also to the analysis of industries and competitive strategies. Value configuration theory rests on the same ideas that motivated the value chain framework (Porter, 1985). The basic premise is that competitive advantage cannot be understood by looking at the firm as a whole. Performance stems from the many discrete activities that a firm performs in generating and delivering value to its customers. Activity category templates are used to analyze activities and develop means to reposition the firm. However, while Porter's initial formulation assumed that the value chain activity was applicable in all industries and all firms, value configuration theory proposes that the value chain is a good representation of one of three basic value creation. The chain represents manufacturing of physical goods with its focus on the transformation and assembly of inputs into finished goods. The other two value configurations are for problem-solving services and mediation services.

6.2 Social network theory

The social network theory views companies as embedded in a complex of horizontal, vertical and business value chain relationships with other companies and other organizations supporting inputs and services (such as advisory services, credit facilitators and transportation companies). According to network theory, relationships are not only shaped by economic considerations; other concepts like trust, reputation and power also have a key impact on the structure and duration of inter-company relationships (Uzzi 1997).

6.3 Governance theory

Value chains have been seen as a conductor enhancing information flows between various actors in the chain, which has resulted to quite a number of governance debates. These governance issues have everything to do with the complexities of power relations within the chain, which determine ‘... how financial, material and human resources are allocated and flow within the chain (Laven 2011). Therefore, Schmitz (2001) has outlined four key parameters that define the production process of a product. These are: What is produced, how it is produced, when it is produced and how much is to be produced.

6.4 Global Value Chain (GVC) theory

GVC analysis originates from the commodity chain approach (Gereffi 1994) and investigates relationships between multi-national companies, the “lead firms”, and other participants in international value chains. In this theoretical stream power relationships and information asymmetry are key concepts in the analysis of global value chains. Therefore, the focus is on governance and upgrading opportunities in developing country value chains (Gibbon & Bair 2008).

6.5 Upgrading theory

According to Kaplinsky and Morris (2001) the value chain describes the full range of activities that are required to bring a product from its conception to its end use and beyond. This includes activities such as design, production, marketing, distribution and support to the final consumer. These activities can take place within a firm or among different firms in one or several geographical locations. This characteristic of physically transforming products over time and their distribution over geographical locations is known as input-output relations.

7.0 Methodology

The research design employed in this study is the survey research design, which is useful for solving problems only when the process is guided by one or more specific research problems. The population of this study covers one thousand, eight hundred and eighty-one (1,882) owners of various registered agro-allied Small and Medium Scale Enterprises in Sokoto State, engaged in various forms of Agro Allied SMEs in Sokoto the State (Sokoto State Ministry of Agriculture, 2015). Based on the above population, the sample size of the study is therefore determined using the Yaro Yamane (1967) sample determination technique;

$$n = \frac{N}{1 + N(e)^2}$$

where; N= Population size; n= Sample size; e= Error of margin (0.05)

$$n = \frac{1,881}{1 + 1,881(0.05)^2} = \frac{1,881}{5.7025} = 329$$

Data were meticulously collected from primary sources through the used of questionnaire. The primary data were sourced from owners of selected Agro-Allied SMEs within the various Senatorial districts in Sokoto State. The questionnaire being the instrument of data collection was structured and sub-divided

into two main sections; Section A sought preliminary information of the respondents, while Sections B sought to gather proffer answers to and questions and help achieve the objectives of this research. However, only 327 copies of questionnaire were returned and researcher used 327 to analysis the data.

A software statistical package of e-view is used in analysing data in this study. The statistical tool of ordinary least square method of regression is used. It is used to determine whether there is a relationship between value chain and performance of agro allied SMEs in Nigeria. A sign of effect relationship between value chain proxies primary and secondary activities and performance of agro allied SMEs in Sokoto state is tested using statistical method of ordinary least squares method of regression. The ordinary least square method is widely used methods of regression analysis. It is used to examine whether one variable is dependent on another or a combination of other variables. A multiple model is employed to estimate the impact of value chain on the performance of agro allied SMEs in Sokoto State and this will be expressed in this study as thus:

$$PEf = \alpha + \beta_1INBL + \beta_2OS + \beta_3OTBL + \beta_4MS + \beta_5CSR + \mu \dots\dots\dots \text{equation 1}$$

$$PEf = \alpha + \beta_1PRO + \beta_2TED + \beta_3HRM + \beta_4FIN + \mu \dots\dots\dots \text{equation 2}$$

Where: PEF = performance of Agro Allied SMEs, β = Independent variable, α = Intercept, μ = Error terms, Primary activities of value chain is measured by: INBL = Inbound Logistics, OS = operations, OTBL= outbound logistics, MS= marketing and sales and CSR= customer service Secondary activities of value chain is measured by: PRO = procurement, TED= technology development, HRM = human resource development and FIN = firm infrastructure

8.0 Results and analysis

Respondents	Frequency	Percentage
1-3 Years	103	31.5
3-5 Years	127	38.8
5-10 Years	65	19.9
10 years and above	32	9.8
Total	327	100

Source: Field Survey, 2016

The above table shows that 103 of the respondents representing 31.5% have been in business for less than 3 years, 127 respondents representing 38.8% have been in the agro business between 3 and 5 years, 65 respondents which represents 19.9% have been in business between 5 and 10 years, while 32 respondents representing 9.8% have been in business for above 10 years.

Respondents	Frequency	Percentage
Shea Butter Processing	98	29.9
Yam Processing	65	19.8
Groundnut Processing	113	34.6
Chicken Feeds	51	15.6
Total	327	100

The analysis in table shows that majority of the SMEs, being 113 respondents representing 34.6% are into groundnut processing agro-business, 98 respondents representing 29.9% are into Shea Butter Processing, 65 respondents representing 19.8% are into Yam processing, while 51 respondents representing 15.6% are into Chicken feeds Processing in the Agricultural business sector. This shows that, there is a complete representation of the SMEs operational within the Agro-Allied Business.

Hypothesis 1: Primary activities and performance pf Agro allied SMEs in Sokoto State

Table 3

Items	A	SA	UN	D	SD
Inbound logistics such as receiving, storing, and disseminating inputs of Agro Allied SMEs products in Sokoto State are effective	89(27.2)	130 (39.75)	19(5.8)	81(24.8)	98(29.9)
Operations such as transforming inputs into the final product form in Agro Allied SMEsin Sokoto State are ineffective	129(39.5)	105(32.1)	18(5.5)	34(12.5)	41(12.5)
Outbound logistics such collecting, storing, and physically distributing Agro Allied SMEs products to buyers are done effectively in Sokoto State.	132(40.4)	118(36.1)	15(4.6)	27(8.2)	35(10.7)
Marketing and sales activities like providing a means by which buyers can purchase the product and inducing them to do so are ineffective for Agro Allied SMEs product in Sokote State.	167(51.1)	104(31.8)	13(4.0)	18(5.5)	25(7.6)
Customer service such as providing services to enhance or maintain the value of the product is effective for Agro Allied SMEs product in Sokoto State	173(52.9)	85(26.0)	17(5.2)	13(4.0)	39(11.9)
Agro Allied SMEs performance is drastically improve in Sokoto State	106(32.4)	86(26.3)	53(16.2)	46(14.1)	36(11.0)

Field Survey, 2016

Regression Analysis (OLS) using E-view Statistic Package

Dependent Variable: PF				
Included observations: 327				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.211047	0.055379	-3.810935	0.0002
INBL	0.267086	0.025949	10.29272	0.0000
OS	0.576222	0.057725	9.982157	0.0000
OTBL	-0.152214	0.068015	-2.237949	0.0259
MS	-0.093066	0.058935	-1.579144	0.1153
CSR	0.497700	0.063727	7.809920	0.0000
R-squared	0.935694	Mean dependent var	2.541284	
Adjusted R-squared	0.934692	S.D. dependent var	1.357995	
S.E. of regression	0.347042	Akaike info criterion	0.739435	
Sum squared resid	38.66058	Schwarz criterion	0.808975	
Log likelihood	-114.8975	Hannan-Quinn criter.	0.767182	
F-statistic	934.1444	Durbin-Watson stat	0.174121	
Prob(F-statistic)	0.000000			

Source: data output from e-view statistical package, 2015.

1% level of significance; 5% level of significance and 10% level of significance

$$PEF = \alpha + \beta_1 INBL + \beta_2 OS + \beta_3 OTBL + \beta_4 MS + \beta_5 CSR$$

$$PEF = 0.23 + 0.26 INBL + 0.57 OS - 0.15 OTBL - 0.09 MS + 0.49 CSR$$

SE	=	0.05	0.02	0.05	0.06	0.05	0.06
t*	=	(3.8)	10.2	9.9	(2.22)	(1.57)	7.8
p*	=	0.00	0.00	0.00	0.02	0.11	0.00
R ²	=	0.93					
R ² (Adj)	=	0.93					
F statistic	=	934.14 (prob) 0.000					
DW	=	0.17					

From the regression result, primary activity of value chain coefficient for inbound logistic (INBL) is positive and significant in achieving performance (PEF) of Agro Allied SMEs in Sokoto State. The $PEF = 0.23 + 0.26INBL$ which indicates that performance of Agro Allied SMEs in Sokoto State will increase by 0.26% for every 1% increase in inbound logistic (INBL). The p-value of 0.00 is less than the t-statistic value of 10.2 and the standard error value of 0.02 is less than the t-statistic value. This implies that there is a significant relationship between inbound logistic activities and performance of Agro Allied SMEs in Sokoto State.

Primary activity of value chain coefficient for operations (OS) is positive and significant in achieving performance (PEF) of Agro Allied SMEs in Sokoto State. The $PEF = 0.23 + 0.57OPS$ which indicates that performance of Agro Allied SMEs in Sokoto State will increase by 0.57% for every 1% increase in operations (OS). The p-value of 0.02 is greater than the t-statistic value of (2.22) and the standard error value of 0.05 is less than the t-statistic value. This implies that there is a significant relationship between operations (OS) and performance of Agro Allied SMEs in Niger State.

Primary activity of value chain coefficient for outbound logistics (OTBL) is negative and insignificant in achieving performance (PEF) of Agro Allied SMEs in Sokoto State. The $PEF = 0.23 - 0.15OTBL$ which indicates that performance of Agro Allied SMEs in Sokoto State will decrease by 0.15% for every 1% increase in operations (OPS). The p-value of 0.00 is less than the t-statistic value of 9.9 and the standard error value of 0.06 is greater than the p value. This implies that there is a significant relationship between outbound logistics (OTBL) and performance of Agro Allied SMEs in Sokoto State.

Primary activity of value chain coefficient for marketing and sales activities (MS) is negative and insignificant in achieving performance (PEF) of Agro Allied SMEs in Sokoto State. The $PEF = 0.23 - 0.09MS$ which indicates that performance of Agro Allied SMEs in Sokoto State will decrease by 0.09% for every 1% increase in marketing and sales activities (MS). The p-value of 0.11 is less than the t-statistic value of (1.57) and the standard error value of 0.05 is less than the p value. This implies that there is insignificant relationship between marketing and sales activities (MS) and performance of Agro Allied SMEs in Sokoto State.

However, Primary activity of value chain coefficient for customer service (CSR) is positive and significant in achieving performance (PEF) of Agro Allied SMEs in Sokoto State. The $PEF = 0.23 + 0.49CSR$ which indicates that performance of Agro Allied SMEs in Sokoto State will increase by 0.49% for every 1% increase in customer service (CSR). The p-value of 0.00 is less than the t-statistic value of 7.8 and the standard error value of 0.06 is less than the t-statistic value. This implies that there is a significant relationship between customer service (CSR) and performance of Agro Allied Sokoto in Niger State.

Hypothesis 2: Secondary activities of Value Chain and performance of Agro Allied SMEs in Sokoto State

Table 4

Items	A	SA	UN	D	SD
Procurement activities performed by Agro Allied SMEs in Sokoto State in the purchasing of inputs are effective.	122(37.3)	136(41.6)	27(8.3)	23(7.0)	19(5.8)
Technology development activities of Agro Allied SMEs are efforts to improve SMEs products and process in Sokoto State.	117(35.7)	112(34.3)	32(9.8)	27(8.3)	39(11.9)
Human resource management activities such as recruiting, hiring, training, developing, and compensating personnel are effectively done in Agro Allied SMEs in Sokoto State	125(38.2)	109(33.3)	8(2.4)	34(10.4)	51(15.7)
Infrastructure activities such as general management, planning, finance, accounting, legal, government affairs, and quality management of Agro Allied SMEs in Sokoto State are ineffective	129(39.4)	136(41.6)	19(5.8)	17(5.2)	26(8.0)
Field Survey, 2016					

The coefficient of determination (r^2) of 0.93 indicates that 93% of variation in performance (PEF) of Agro Allied SMEs in Sokoto State can be explained by primary activities of value chain (inbound logistic, operations, outbound logistics, marketing and sales activities and customer service) in Sokoto State. The remaining 3% can be explained by other related factors not noted in the regression model. The f-statistic value of 934.14 is significant at p-value of 0.00. This implies that there is an evidence of existence of linear relationship between primary activities of value chain (inbound logistic, operations, outbound logistics, marketing and sales activities and customer service) and performance of Agro Allied SMEs in Sokoto State. Therefore, we accept the alternative hypothesis that there is a significant relationship between primary activities of value chain and performance of Agro Allied SMEs in Sokoto State.

Regression Analysis (OLS) using E-view Statistic Package

Dependent Variable: PF				
Included observations: 327				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.260906	0.048577	5.370978	0.0000
PRO	0.027815	0.126528	0.219834	0.8261
TED	0.111778	0.106472	1.049835	0.2946
HRM	0.687347	0.073688	9.327747	0.0000
INF	0.201010	0.137242	1.464633	0.1440
R-squared	0.907347	Mean dependent var		2.541284
Adjusted R-squared	0.906196	S.D. dependent var		1.357995
S.E. of regression	0.415918	Akaike info criterion		1.098515
Sum squared resid	55.70205	Schwarz criterion		1.156465
Log likelihood	-174.6072	Hannan-Quinn criter.		1.121638
F-statistic	788.3371	Durbin-Watson stat		0.110599
Prob(F-statistic)	0.000000			

Source: data output from e-view statistical package, 2015
1% level of significance; 5% level of significance and 10% level of significance

$$\begin{aligned} \text{PEF} &= \alpha + \beta_1 \text{PRO} + \beta_2 \text{TED} + \beta_3 \text{HRM} + \beta_4 \text{INF} \\ \text{PEF} &= 0.26 + 0.02 \text{PRO} + 0.11 \text{TED} + 0.68 \text{HRM} + 0.20 \text{INF} \\ \text{SE} &= 0.04 \quad 0.12 \quad 0.10 \quad 0.07 \quad 0.13 \\ t^* &= 5.37 \quad 0.21 \quad 1.04 \quad 9.32 \quad 1.46 \\ p^* &= 0.00 \quad 0.82 \quad 0.29 \quad 0.00 \quad 0.14 \\ R^2 &= 0.90 \\ R^2 (\text{Adj}) &= 0.90 ; F \text{ statistic } 788.3 \text{ (prob) } 0.000 ; DW = 0.11 \end{aligned}$$

From the regression result, secondary activity of value chain coefficient for procurement (PRO) is positive and significant in achieving performance (PEF) of Agro Allied SMEs in Sokoto State. The PEF = 0.26 + 0.02PRO which indicates that performance of Agro Allied SMEs in Sokoto State will increase by 0.02% for every 1% increase in procurement (PRO) activities. The p-value of 0.82 is greater than the t-statistic value of 0.21 and the standard error value of 0.12 is less than the t-statistic value and the p value. This implies that there is insignificant relationship between procurement (PRO) activities and performance of Agro Allied SMEs in Sokoto State.

Secondary activity of value chain coefficient for technology development (TED) is positive and significant in achieving performance (PEF) of Agro Allied SMEs in Sokoto State. The PEF = 0.26 + 0.11TED which indicates that performance of Agro Allied SMEs in Sokoto State will increase by 0.11% for every 1% increase in technology development (TED). The p-value of 0.29 is less than the t-statistic value of 1.04 and the standard error value of 0.10 is less than the t-statistic value. This implies that there is insignificant relationship between technology development (TED) and performance of Agro Allied SMEs in Sokoto State.

Secondary activity of value chain coefficient for human resource management (HRM) is positive and significant in achieving performance (PEF) of Agro Allied SMEs in Sokoto State. The $PEF = 0.26 + 0.68HRM$ which indicates that performance of Agro Allied SMEs in Niger State will increase by 0.68% for every 1% increase in human resource management (HRM) activities. The p-value of 0.00 is less than the t-statistic value of 9.32 and the standard error value of 0.07 is greater than the p value. This implies that there is a significant relationship between human resource management (HRM) and performance of Agro Allied SMEs in Sokoto State.

However, secondary activity of value chain coefficient for infrastructure (INF) is positive and significant in achieving performance (PEF) of Agro Allied SMEs in Sokoto State. The $PEF = 0.26 + 0.20INF$ which indicates that performance of Agro Allied SMEs in Sokoto State will increase by 0.20% for every 1% increase in infrastructural activities (INF). The p-value of 0.14 is less than the t-statistic value of 1.46 and the standard error value of 0.13 is less than the p value. This implies that there is insignificant relationship between infrastructural activities (INF) and performance of Agro Allied SMEs in Sokoto State.

The coefficient of determination (r^2) of 0.90 indicates that 90% of variation in performance (PEF) of Agro Allied SMEs in Sokoto State can be explained by secondary activities of value chain (procurement activities, technology development, human resource management and infrastructural activities) in Sokoto State. The remaining 10% can be explained by other related factors not noted in the regression model. The f-statistic value of 788.3 is significant at p-value of 0.00. This implies that there is an evidence of existence of linear relationship between secondary activities of value chain (procurement activities, technology development, human resource management and infrastructural activities) and performance of Agro Allied SMEs in Sokoto State. Therefore, we accept the alternative hypothesis that there is a significant relationship between secondary activities of value chain and performance of Agro Allied SMEs in Sokoto State.

Overall results of the analysis indicate that value chain is significant in achieving performance of Agro Allied SMEs in Sokoto State. This implies that primary and secondary activities of value chain significantly contribute to performance of Agro Allied SMEs in Sokoto State. In that sense, the study confirm with the value configuration theory which rests on the ideas that motivated the value chain framework (Porter, 1985). The basic premise is that performance cannot be understood by looking at the firm as a whole. Performance stems from the many discrete activities that a firm performs in generating and delivering value to its customers. Activity category templates are used to analyze activities and develop means to reposition the firm. However, while Porter's initial formulation assumed that the value chain activity was applicable in all industries and all firms and value configuration theory proposes that the value chain is a good representation of one of three basic value creations.

9.0 Conclusion

The study concludes that value chain is significant in achieving performance of Agro Allied SMEs in Sokoto State and that primary activities of value chain contribute significantly to the performance of Agro SMEs in Sokoto State and secondary activities of value chain contribute significantly to the performance of Agro SMEs in Sokoto State. it is therefore recommended that Agro SMEs in Sokoto State should continue to improve on primary activities of value chain and secondary activities since it contributes significantly to the performance of Agro SMEs in Sokoto State.

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QUESTIONNAIRE

This form is designed to generate data for analysis in this study. You are required to answer the questions by ticking one of the boxes provided against each question the one that best describe your opinion

1. Years of being in Agro-Allied Business in Niger State

- 1- 3 years ()
- 3 – 5 years ()
- 5 – 10 years ()
- 10 and above ()

2. What is the nature of your Agro Allied business in Niger State?

- Shea-Butter Processing
- Yam Processing
- Groundnut Processing
- Chicken Feeds Processing

SECTION B

You are required to answer the following question by ticking on the option provided. Note the following: where SA = Strongly Agreed(1), A = Agreed (2), UND = Undecided (3) SD = Strongly Disagreed (4) D= Disagreed (5)

Value chain Activities Related questions					
Value chain Activities: Primary Activities	SA	A	UND	SD	D
	1	2	3	4	5
Inbound logistics such as receiving, storing, and disseminating inputs of Agro Allied SMEs product in Sokoto State are effective					
Operations such as transforming inputs into the final product form in Agro Allied SMEs in Sokoto State are ineffective					
Outbound logistics such collecting, storing, and physically distributing Agro Allied SMEs products to buyers are done effectively in Sokoto State.					
Marketing and sales activities like providing a means by which buyers can purchase the product and inducing them to do so are ineffective for Agro Allied SMEs product in Sokoto State.					
Service activities such as providing services to enhance or maintain the value of the product is effective for Agro Allied SMEs product in Sokoto State.					
Value chain Activities: Secondary Activities					
Procurement activities performed by Agro Allied SMEs in Sokoto State in the purchasing of inputs used in the value chain are effective.					
Technology development activities of Agro Allied SMEs are efforts to improve products and process in Niger State.					
Human resource management Activities such as recruiting, hiring, training, developing, and compensating personnel are effectively done in Agro Allied SMEs in Sokoto State					
Firm infrastructure activities such as general management, planning, finance, accounting, legal, government affairs, and quality management of Agro Allied SMEs in Sokoto State are ineffective					
Performance related questions					
Questions	1	2	3	4	5
Agro Allied SMEs performance is drastically improve in Sokoto State					