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Transactional Supply Chain Governance and Performance of Agro Processing Firms in Kenya

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Abstract

Purpose: Agro processing sector is a widely diverse subsector and is vital to the production of food, beverages and non-food products. The sector contributes in earning foreign exchange, growth of gross domestic product and offer employment opportunities. The sector is inefficient in terms of value addition to the agricultural produce as Kenya exports raw agricultural produce instead of high-quality value-added products. This study therefore, sought to determine the effect of transactional supply chain governance on performance of agro processing firms in Kenya.

Methodology: This study adopted a survey research design. The study focused on 344 agro processing firms in Kenya. This study used a census survey and data was collected using self-administered questionnaires. The data collected was analysed using SSPS version 25. Data analysis was conducted using descriptive and inferential statistics by use of moderated multiple regression analysis.

Findings: The findings of this study revealed that transactional supply chain governance had a significant and positive effect on performance of agro processing firms in Kenya. The model found out that the coefficient of determination was 0.597 implying that 59.7% performance of agro processing firms in Kenya is explained by transactional supply chain governance. The study concluded that transactional supply chain governance was critical in enhancing the performance of agro processing firms in Kenya.

Unique contribution to theory, practice and policy: The study recommended that agro processing firms should implement the systems of transactional supply chain governance to enhance their profitability, sales growth and market share.

Keywords: *Transactional Supply Chain Governance, Selective Incentives, Monitoring Capacity, Performance, Agro Processing Firms*

1.0 INTRODUCTION

1.1 Background to the Study

Supply chain management has come out as a common art with which firms outflank each other competition in the global market (Jackson, 2018). Effectual supply chain management is a puzzling and complex role, because currently diverse brands are on rise, products' life cycle is reducing, outsourcing strategy is now being adopted by most of the companies, globalization of business are on rise and advancement of information technology is becoming tremendous (Holweg, *et al.*, 2018). Additionally, the composition of the supply chain impacts the utility and price of a commodity all through its existence in the market. The purpose of this is study was determine the influence of transactional supply chain governance (SCG) on performance of agro processing firms in Kenya. To achieve this aim, the specific objective of the study was to establish the influence of transactional SCG on the performance of firms in Kenya. Transactional SCG is a part of governance style that focuses on supervision, organization and performance of firms through promotion of compliance by both rewards and punishments.

Transactional SCG involves an exchange process, whereby followers get immediate tangible rewards for carrying out the manager's orders (Berkovich & Eyal, 2019). The managers using transactional governance as a model, pay attention to followers' work in order to find faults and deviations. Transactional managers tend to be more passive, responsive and reactive that has a significant positive impact on business success (Mkheimer, 2018). The model is effective in crisis and emergency situations and for projects carried in a specific way, and it is positively associated with innovative behavior. The rewards depend on an agreement between the manager and follower. The followers get bonuses, merits or recognition with the organization when they meet certain goals (Hansen & Pihl-Thingvad (2018). Transactional SCG focuses on results, conforms to the existing structure of an organization and measures success according to that organization's system of rewards and penalties. It is a series of regulation and coordination of activities through a variety of formal and/or informal mechanisms based on a specific purpose (Howard, *et al.*, 2017).

The transactional SCG is one of the conceptions (concepts or ideas) of the supply chain governance (SCG). The SCG is a governing system of rules, structures and institutions that guide, control, and lead supply chains, through policies and regulations, with the goal of creating greater efficiency (Dolci, Maçada & Paiva, 2015). Different actors, such as international organizations and individual firms, within the global supply chain, put the governing systems into place. The global supply chain is the process of transforming raw materials into a product, which often occurs in several different countries, moving products and services from producers to consumers (Hugos, 2018). A good SCG ensures that all necessary resources are in place and teams are working on agreed priorities, progressing to agreed time scales, and delivering the required benefits. The SCG is a system that direct the behaviours and decisions of procurement in firms through legislative, executive and judicial processes. It governs supply chains to operate in an efficient manner (Jiguang & Bing, 2018). The increased globalization and international codependency have led to the idea that there

should be governing system in place to help guide these global supply chains to perform more efficiently. The SCG is a key prerequisite for achieving organizational competitiveness and long-term wealth in the volatile business environment, and increases the productivity, sales growth, market shares, return of assets and profitability of the firms (Afsar, *et al.,* 2017; Bicudo de Castro, 2017).

Supply chain is a system of organizations, people, activities, information and resources involved in moving a product or service from supplier to customer. It should be cost effective to deliver the results on time (Kozlenkova, *et al.,* 2015). The supply chain has become a source of competitive differentiation and long-term sustainability of firms in a business environment that is constantly changing (Handfield, *et al.,* 2015; Memia, Ngugi & Odhiambo, 2018). Supply chain management (SCM) manages the flow of goods and services from point of origin to point of consumption ((Durach & Machuca, 2018). The system is required for the timely manufacture of goods and ensuring that consumer requirements are met effectively (Durach & Wiengarten, 2019). In SCM, governance refer to structures and processes that are designed to ensure accountability, transparency, responsiveness, rule of law, stability, equity and inclusiveness, empowerment, and broad-based participation. SCM deals with the flow of materials through the global supply chain to ensure that the system produces per capita efficiently (Qayyum & Ashraf, 2015). The SCM deals with the products in the system and their efficiency in the system, while the SCG focuses on the system as a whole and the interactions between firms (Christopher, 2016; O'Rourke, 2014; Mwangi, Muturi, & Noor, 2019).

The region of Africa is increasingly implementing and adopting the concept of transactional SCG to have sustainable market competition and economic growth in the agro processing industry. Agro processing is a widely diverse subsector and is vital to the production of food, beverages and non-food products like tobacco, sisal as well as the treatment of wood for furniture and paper products (Ncube, *et al.,* 2017). Agro processing is the process of converting primary or raw agricultural materials or products into consumable commodities suitable for consumption (Gichuru, Iravo & Arani, 2015). According to Gyau and Spiller (2012), both exporters and importers in Ghana can improve their economic performance and enhance efficiency in the supply chain if they adopt a more coordinated structure of SCG with appropriate mechanisms for equitable distribution of benefits. According to Aziz and Azim el Hammady (2015), agro processing enterprise development in Egypt has the potential to provide employment for the rural poor in off-farm activities such as handling, packaging, processing, transporting, and marketing of food and agricultural produce. According to Mhazo, *et al.,* (2013), agro processing industry in Zimbabwe plays a vital role in the national economic development and has potential to meet the local needs and export requirements. According to Kingoo and Chirchir (2013), implementation of supply chain governance is very limited in Kenyan parastatals but has a good impact on the organizational performance. Ponte and Sturgeon, (2014) explained the importance of governance in global value chains with a modular theory-building effort for the Southern African poultry value chain.

The agro-processing sector in Kenya is having three subsectors of nourishment, refreshments and non-sustenance (KAM, 2019). The choice of the industry for this study depended on its

importance of adding value to the agricultural products before exportation or consumption, provision of employment and contribution to gross domestic product. In 2015, agriculture was the leading sector of the economy, accounting for 23% of wage employment and providing livelihood for almost 70% of Kenyans (Mitullah, Kamau & Kivuva, 2017). In 2016, agriculture contributed 33% to Kenya's gross domestic product, 60% of exports and 7% of imports (KNBS, 2018). The agro processing firms have been inefficient in terms of value addition to the agricultural produce and Kenya is a net exporter of raw agricultural produce instead of high-quality value-added products (Ndicu, Muchai & Gachanja, 2015; Maina, Gichira, & Wanjau, 2017). According Vernon (2017), performance of the manufacturing sector in Kenya is affected by the use of obsolete supply chain management practices. This calls for adoption and implementation of modern governance systems like transactional supply chain governance to improve performance and efficiency of the agro processing firms in Kenya.

The performance of a firm is a multi-dimensional construct divided into financial and non-financial models (Roberts, Neumann & Cauvin, 2017: Selvam, *et al.,* 2016). The financial models are productivity, return on assets, profitability, sales growth, cash flow and other financial performance measures. The non-financial models are market shares, market position, product quality and customer satisfaction. Productivity is a crucial factor in production performance of firms and its growth can help businesses to be profitable (Sickles & Zelenyuk, 2019). Profitability, efficiency, solvency and market prospects building blocs for analyzing financial statements and company performance as a whole (Zelenyuk, 2018). Customer satisfaction is a measure of how products and services supplied by a company meet or surpass customer expectation (Pokryshevskaya & Antipov, 2017). According to Dekker, *et al.,* (2018), performance indicators in agro-food supply chains are efficiency, flexibility, responsiveness and food quality.

1.2 Statement of the Problem

The agro processing industry establishes the biggest bit of 38% of Kenya manufacturing sector (Kenya Association of Manufacturers (KAM), 2019). The manufacturing sector has high and yet untapped potential to contribute to employment and gross domestic product. The sector has experienced performance issues that include trade imbalances, drop in gross domestic product, unemployment, inflation and closure of international firms in Kenya (Magutu, Aduda & Nyaoga, 2015). The manufacturing sector is the largest among all the industrial production activities and accounts for 99 percent of all industrial activities in Kenya, but has been growing at a slower rate than the economy which expanded by 5.6% in 2015. The agriculture sector recorded mixed performance in 2017 that led to a decelerated growth of 1.6% compared to 5.1% growth in 2016 that also affected the agro processing industry (Kenya National Bureau of Statistics (KNBS), 2018). The gross domestic product from manufacturing dropped from Kshs. 118,134 million in the first quarter of 2016 to Kshs. 113,460 million in the second quarter of 2016 (Memia, Ngugi & Odhiambo, 2018). The manufactures of food products declined by 10.8% while the dairy sub-sector production volumes contracted by 12.1% in 2017. Sugar production declined significantly by 41.2% from 639.7 thousand tonnes in 2016 to 376.1 thousand tonnes in 2017. The production of tea dropped by 7% from 473.0 thousand tonnes in

2016 to 439.8 thousand tonnes in 2017. Semi-processed coffee dropped by 15.1% to 33.7 thousand tonnes and production of beverages declined by 5.2% in 2017. The production of tobacco products dropped by 4.4 % because of a 4.1% decline in production of cigarettes in 2017. Leather and related products recorded a decline of 12.0%; and the manufacture of wood and products of wood dropped by 13.2% in 2017 (KNBS, 2018).

The statistics indicated clearly that there was a performance gap of agro processing sector, which this study aimed to resolve. This implied that the share of manufacturing in gross domestic product had been reducing over time (Were, 2016). The major problem of the sector in Kenya is inefficient value addition to agricultural produce (Ndicu, Muchai & Gachaja, 2015; Maina, Gichara & Wanjau, 2017). According to Gyau and Spiller (2012), the exporters and importers in agribusiness in Ghana can improve their economic performance and enhance efficiency in the supply chain if they adopt a more coordinated structure of supply chain governance. According to Kingoo and Chirchir (2013), transactional supply chain governance has a lot of impact on organizational performance of Kenyan parastatals though implementation is limited. Zhang and Aramyan, (2014) found out that transactional supply chain governance may improve performance in agri-food sector in the developing countries like China if implemented. According to Anupam and Fedorowicz (2015), trust, bargaining power and contract support the transactional supply chain governance information sharing and material flow coordination in supply chains in Indian firms. In view of the forgoing, this study creates new knowledge to bridge the existing gap on influence of supply chain governance on performance of agro processing firms in Kenya.

1.3 Specific Objective

To establish the effect of transactional supply chain governance on performance of agro processing firms in Kenya.

1.4 Research Hypothesis

H_0: Transactional supply chain governance does not significantly effect the performance of agro processing firms in Kenya.

1.5 Justification of the Study

The study sought to determine the effect of transactional supply chain governance on performance of the agro processing firms in Kenya. The transactional supply chain governance increase the efficiency of firms and enable them to be more competitive in the global market. When properly implemented, it enables the agro processing firms to add good value to the agricultural products before consumption and exportation. This study adds value to the existing literature by providing empirical evidence on the effect of transactional supply chain governance on performance of the agro processing firms in Kenya, and fill the existing contextual gaps. The study is helpful to the various stakeholders like the manufacturing firms, the Kenya Association of Manufacturers, the researchers and scholars, government, the policy makers, the consumers and suppliers, and many other groups or individual consumers.

1.6 Scope of the Study

The study targeted 344 agro processing firms in Kenya that were members of Kenya Association of Manufacturers. The choice of the agro processing sector for this study was based on its importance of adding value to the agricultural products before exportation or consumption. Agriculture is the main stay of the Kenyan economy. The sector also contributes to the gross domestic product, offer employment opportunities, earn foreign exchange and provide livelihood for almost 70% of Kenyans. The sector forms 38% and constitutes the largest portion of the Kenya manufacturing sector.

2.0 LITERATURE REVIEW

2.1 Introduction

The literature review involves the systematic identification, location and analysis of documents containing information related to the research being investigated (Park, 2018). The literature review identifies research gaps recommended for further research (Lamb, 2014). Literature review should be extensive and thorough because it aims at obtaining knowledge of the topic being studied (Sarstedt & Mooi, 2019).

2.2 Theoretical Framework

The theoretical review defines the research problem in order to test a relationship in a theory and deal with specific concepts from a theory. A theory is a set of statements or principles devised to explain a group of facts or phenomena repeatedly tested or are widely accepted and can make predictions about natural phenomena (Denzin, 2017). Theories are analytical tools for understanding, explaining, and making predictions about a given subject matter (Creswell & Creswell, 2017). The Transaction Cost Theory and the Theory of Performance are the underpinning theories in this study.

2.2.1 Transaction Cost Theory

Transaction cost theory was relevant in understanding the influence of transactional SCG on performance of agro processing firms in Kenya and hence provided the theoretical background for this study. Coase developed the transaction cost theory of the firm in 1937 making it one of the first attempts to define the firm theoretically in relation to the market (North, 1992). According to Coase (1937), transaction costs include search and information costs, bargaining and decision costs and policing and enforcement costs. The theory states that people prefer to direct others and are prepared to pay for this (but generally people are paid more to direct others); and purchasers prefer goods produced by firms. This linked well with transactional SCG whereby managers direct the workers to perform certain duties of the firm then provide rewards to those who have performed. The theory defines the firm as the system of relationships that comes into existence when the direction of resources is dependent on the entrepreneur. The size of the firm is dependent on the costs of using the price mechanism. The theory is part of corporate governance based on the principle that costs will arise when directors get someone else to run their business (Basil, 2016). The theory describes governance frameworks as being based on the net effects of internal and external transactions, rather than as contractual relationships outside the firm with shareholders (Schmitz, 2016).

The theory focuses on the individual transaction and considers that managers or directors may arrange transactions in an opportunistic way. The main activities of transaction cost economics are within five processes of category strategy, supplier strategy, quotation supplier selection and negotiation, operative procurement and supplier evaluation. The firm should keep transaction costs low by using a hybrid governance approach through the safeguards provided in the contract and use the market if the component that has to be supplied has low asset specificity (Müller & Schmitz, 2016). The factors that comprise transaction costs are measurement, enforcement, ideological attitudes and perceptions, and the size of the market. The theory accounts for the actual cost of outsourcing production of products or services including transaction costs, contracting costs, coordination costs, and search costs (Schmitz, 2016). The theory fits well with transactional SCG since it governs transactions through relational norms, which refer to some social processes, and regulations that exist because of the counterparts' relations in a transaction and has a value-adding function. The firms that manage processing activities efficiently minimize the transaction costs and production costs to achieve their objectives.

Müller and Schmitz (2016) identified three characteristics of transactions of asset specificity, uncertainty, and the number of input sources that determine when firms or markets prevailed. Market contracting was more efficient when assets were non-specific to any particular transaction. Similarly, when small numbers of sources and imperfect information were not significant, market contracts dominated over firms. When firm practices logistics efficiency, effectiveness and flexibility in their transactions and operations, achievement of their goals are realized at a lower cost. The goals of the firm are also influenced by external factors such as competitors, stockholders, suppliers, customers and industry structure. Defining the goals of the firm became more complex as these groups placed different demands on the firm. The theories of the firm help in understanding how the goals and resources of the organization drive the firm‘s behavior (Gattai & Natale, 2015).

2.2.2 Theory of Performance

Theory of Performance (ToP) was relevant in understanding the effect of transactional supply chain governance on performance of agro processing firms in Kenya and provided the theoretical background for this study. Performance theory originated from a variety of fields, but it is mostly associated with the work of Schechner (1985) and Turner (1988) who examined and highlighted how performances are central to human behavior and understanding. Performance theory suggests that every firm puts on a performance in business to be competitive in the global market. Performance can entail observance to a rigid structure of operating but it can also be a means of achieving set goals by the firms. The concept of performance enables an assessment of the ways in which individual firms operate and compete in the world market. It is a means of understanding how firms situate themselves at the national, regional and global levels for themselves and for others. Performance offers modern perspectives in multiple environments (Shepherd 2016).

According to Agami, Saleh and Rasmy (2012), ToP develops and relates six foundational concepts of perform, performer, level of performance, performer's mindset, immersion and reflective practice. These concepts form a framework that can be used to explain performance as well as performance improvements of companies. To perform is to produce valued results as per the set goals. A performer can be a firm or a group of firms engaging in a collaborative effort. Developing performance is a journey and level of performance describes location in the journey to achieve the set objectives. The current level of performance depends holistically on six components of context, level of knowledge, levels of skills, level of identity, personal factors and fixed factors of the companies (Nielsen, 2013). According to Schrettle, *et al.*, (2013), the performance theory calls for greater awareness of attention to formal elements of textual representation (structural concerns) and greater focus on context. ToP situates stories to a particular process within the firm and credits an employee of the firm who assumes responsibility for the performance. Performance at each processing level is key to the company and relies on worker's assumption of responsibility for the emergent event (Osoro, Muturi & Ngugi, 2015). There is need to establish how ToP can help in discussing, appreciating and understanding the role played by agro processing sector in the economy. The ToP links well with the performance of agro processing firms in Kenya and it will guide this study to the right direction.

2.3 Conceptual Framework

The conceptual framework refers to the conceptualization of the relationship between variables in the research study. It is a diagrammatic presentation of the relationship between independent and dependent variables of the study. According to Sarstedt and Mooi (2019), a conceptual framework is a system of concepts, assumptions, expectations that supports and directs research. Conceptual framework helps the researcher to understand the proposed relationship between variables; to establish the significance of the proposed relationship; and to test the conceptual model (Creswell & Creswell, 2017).

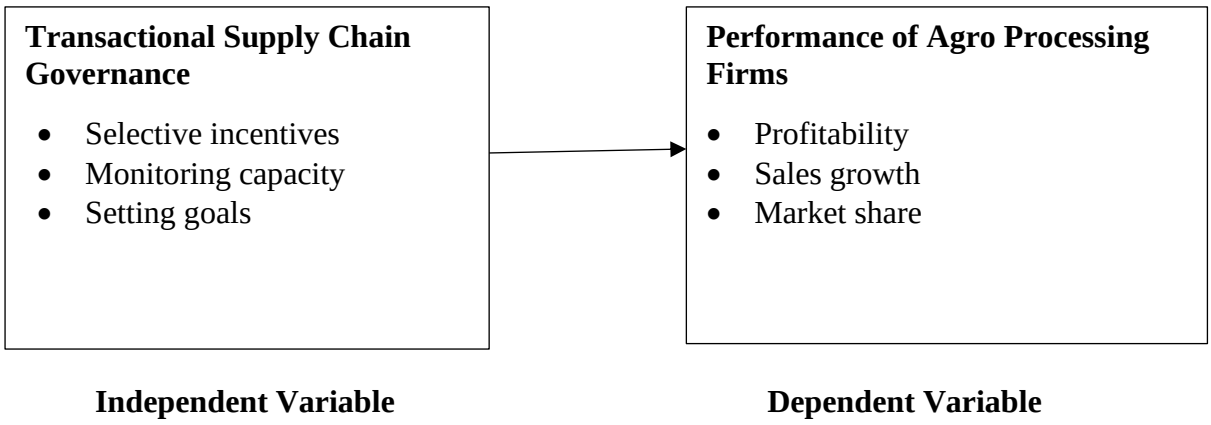

Figure 1: Conceptual Framework

2.3.1 Transactional Supply Chain Governance

Transactional SCG is a part of governance style that focuses on supervision, organization and performance of firms. In transactional governance, managers promote compliance by followers through both rewards and punishments. Through a rewards and punishments system, transactional managers are able to keep followers motivated for the short-term (Odumeru & Ogbonna, 2013). The managers using transactional governance as a model, pay attention to followers' work in order to find faults and deviations. Transactional managers tend to be more passive, responsive and reactive (Hargis, Wyatt & Piotrowski, 2011). It is effective in crisis and emergency situations, and for projects carried in a specific way (Schultz & Schultz, 2010). The rewards depend on an agreement between the manager and follower. The followers get bonuses, merits or recognition with the organization that they are with when they meet certain goals depending on what the company needs to achieve (Aamodt, 2016).

Transactional governance focuses on results, conforms to the existing structure of an organization and measures success according to that organization's system of rewards and penalties (Berkovich & Eyal, 2019). Transactional manager is responsible for maintaining routine by managing individual performance and facilitating group performance. The manager sets the criteria for their workers according to previously defined requirements. Performance reviews are the most common way to judge employee performance. Managers work best with employees who know their jobs and are motivated by the reward-penalty system. Transactional governance maintains the status quo of an organization (Afsar, *et al.,* 2017). In transactional governance, the emphasis is on managing the performance of the individual and determining how well he or she performs in a structured environment. The transactional approach features positive and negative reinforcement, and appeals to the self-interest of individuals (Schultz & Schultz, 2010).

According to Frost, Osterloh and Weibel (2010), transactional SCG encompasses all forms of managerial governance that includes selective incentives and monitoring capacity. The managers of a firm play a vital role in encouraging and supporting the initiatives of individual employees to explore new opportunities, to develop new products or to improve work procedures for the benefit of the organization (Afsar, *et al.,* 2017). Transactional SCG offers many advantages like rewarding individuals who are self-motivated and follow instructions. Its benefits tend to be quick when achieving short-term goals quickly and workers have clearly defined rewards and penalties. It encourages productivity and it provides a clear and easy to understand structure. Transactional SCG is good for work environments where structure and systems reproduce high volume manufacturing, and it serves to align everyone in large organizations (Berkovich & Eyal, 2019).

The transactional SCG involves an exchange process whereby followers get immediate tangible rewards for carrying out the manager's orders (Afsar, *et al.,* 2017). There are two factors in transactional SCG namely contingent reward and management-by-exception. The contingent reward provides rewards for effort and recognizes good performance. Management-by-exception maintains the status quo, intervenes when subordinates do not meet acceptable performance levels, and initiates corrective action to improve performance (Berkovich & Eyal, 2019). The behaviors of employees include clarification of expected followers' performance,

explaining how to meet such expectations, and allocating rewards that are contingent on meeting objectives (Schultz & Schultz, 2010). A transaction is the unit of social interaction in which two or more people encounter each other and eventually one of them will speak or give some other indication of acknowledging the presence of others. This is the transactional stimulus. Another person will then say or do something that is in some way related to the stimulus and called the transactional response (Wilkesmann, 2013).

2.4 Empirical Review

2.4.1 Transactional Supply Chain Governance

Many scholars have carried out the influence transactional supply governance on performance of various firms or organizations across the world. The investigation conducted by Afsar *et al.* (2017) on transactional and transformational leadership and employee's entrepreneurial behavior in knowledge intensive industries, they concluded that the two structures enhance employee's entrepreneurial behavior. Hansen and Pihl-Thingvad (2018) studied on managing employee innovative behaviour through transactional and transformational governance styles, and they suggested that both transactional and transformational leadership are positively associated with innovative behaviour. The interaction between the two shows that innovative behaviour is most likely when the leader combines transactional and transformational leadership. Berkovich and Eyal (2019) investigated transformational leadership, transactional leadership, and moral reasoning. They pointed out that transformational leadership predicted resorting to the ethics of critique and profession, whereas transactional leadership predicted use of the ethics of utilitarianism.

Wilkesmann, (2013) conducted a study on effects of transactional and transformational governance on academic teaching in Germany. He found out that transactional governance has impact on the perception of the significance attributed to academic teaching and transformational governance has ample influence. Mkheimer, (2018) studied the impact of leadership styles on business success of SMEs in Amman, Malaysia. The study found that most companies have same styles of leadership and transactional leadership style has a significant positive impact on business success. Melander and Lakemond, (2015) conducted a study on governance of supplier collaboration in the projects in Sweden. They found out that firms achieve governance by simultaneously limiting supplier involvement and allowing for high levels of collaboration. They also concluded that transactional governance has distinct roles in achieving limited supplier involvement and establishing high levels of collaboration.

3.0 RESEARCH METHODOLOGY

3.1 Introduction

Methodology presents the overall framework or roadmap that achieves research results through data collection and analysis (Creswell & Creswell, 2017). Methodology includes publication research, interviews, surveys and other research techniques, and could include both present and historical information (Moser & Korstjens, 2018).

3.2 Research Design

This study used a survey research design, which is appropriate where large population geographically spread is involved which was the case in this study. The design enabled the study to apply both qualitative and quantitative research approaches as observed by Leavy (2017) that the two approaches reinforces each other. This study was anchored on positivism research philosophy for it accommodates both old and new knowledge. Halfpenny (2015) and (Matta, 2015) assert that positivism research philosophy can be used to investigate what truly happens in organizations through scientific measurement of people and system behaviors.

3.3 Target Population

The target population of this study was 344 agro processing firms in Kenya that were members of Kenya Association of Manufacturers as derived from the Kenya Manufacturers and Exporters Directory (2019). The study adopted census survey. The structured and semi-structured questionnaires were used to obtain primary data for the study. According to Truijens, *et al.,* (2021), questionnaire is a research instrument consisting of a series of questions and other prompts for gathering information from the respondents. Pilot study was conducted to measure the reliability and validity of the research instrument. Cronbach's alpha (α) was used to measure the reliability, while face validity and content validity was used to test the validity of the research instrument.

3.4 Data Analysis and Presentation

The study used both descriptive statistics and inferential statistics. Descriptive statistics give expected summary statistics of variables in simple form (Sarstedt & Mooi, 2019). The inferential statistics deal with the populations based on results obtained from samples that include analysis of variance (ANOVA), correlation analysis, coefficient analysis and multiple regression analysis. The systematic factors have a statistical influence on the given data set, while the random factors do not ((Jarrett, 2016; Park, 2018). The study used SPSS version 25 to facilitate the analysis of data. Data was analyzed using descriptive statistics; measures of central tendency, measures of dispersion and measures of symmetry and inferential statistics. Data presentation of the statistics of the findings or results was in the form of frequencies, percentages, mean, median, mode, standard deviation, tables, graphs, and pie charts. Inferential data analysis was performed using Pearson correlation coefficient and regression analysis. Linear regression analysis revealed the correlation and strength of the relationship between both independent and dependent variables.

The ANOVA sought to test the goodness of fit of the regression models and finally to test the hypothesis of the regression models. Data was analyzed qualitatively through content analysis. The information was presented using a combination of statistical techniques and graphical techniques. The hypothesis was tested by running an Ordinary Least Square regression model for the combined sub-constructs of each independent variable against the combined measures of the dependent variable. The acceptance or rejection criteria was that, if the p-value is greater than 0.05, the study fails to reject the H_0 but if p-value is less than 0.05, the H_0 is rejected. The diagnostic tests were conducted to establish whether the data collected was accurate, reliable and capable of inferring the study results to the target population. The multiple regression

analysis is a related technique to assess the relationship between an outcome variable and one or more risk factors or confounding variables (Silverman, 2019).

4.0 RESEARCH FINDINGS AND DISCUSSIONS

4.1 Response Rate

The researcher distributed 344 questionnaires from which, 300 were filled and returned.

Table 1: Response Rate

Rate of Response	Respondents	Percentage
Returned	300	87.21
Not Returned	44	12.79
Total Distributed	**344**	**100**

This represented 87.21% response rate as indicated on table 1 above. It was a perfect representation and enough to make generalizations of the study findings. This response rate conforms to (Dyer, Singh, & Hesterly, 2018) affirmation that a 50% response rate is sufficient for analysis; a rate of 60% is good and that of above 70% is exceptional. The outstanding response rate was attributed to the method of data collection used, whereby the researcher, with assistance from research assistants administered questionnaires to the respondents who filled them after which they were then collected.

4.2 Reliability Analysis

Reliability is the degree to which an assessment tool produces consistent results (Creswell & Creswell, 2017). Cronbach's Alpha (α) was used to test reliability of the proposed constructs. The Cronbach's alpha coefficient should range between 0 and 1. Coefficient of 0.6 - 0.7 is commonly acceptable rule of thumb that indicates acceptable reliability and gives unbiased estimate of data generalizability (Cronbach, 1951; Heale & Twycross, 2015).

Table 2: Reliability Tests of the Factors

Factors/Variables	Cronbach's Alpha Value	Items	Comments
Transactional SCG	0.812	10	Accepted
Performance of agro processing firms	0.833	10	Accepted

n=40

The variables in table 2 above showed that the Cronbach's Alpha was above the required coefficient of 0.70 thus the results of the study are highly reliable. The higher alpha coefficient value means there is consistency among the items measuring the concept of interest (Taber,

2018). The factors showed that the Cronbach's Alpha were above the required coefficient of 0.70 thus the results of the study are highly reliable. This is in tandem with the findings of Park (2018), who observed that reliability is the extent to which a measurement of an instrument or procedure yields the same results on repeated trials.

4.3 Descriptive Analysis for Transactional Supply Chain Governance

Descriptive analysis expressed the variables in frequencies, percentages, means and standard deviation as shown on table 3 below. The mean is the average score of the data values (Sekaran, 2015). Standard deviation measures the spread of data values around the mean. The smaller the standard deviation, the closer the data values to the mean and the higher the standard deviation, the further the data values are spread from the mean (Derrick & White, 2017). The respondents were requested to indicate their levels of agreement on specific statements regarding transactional supply chain governance based on a five-point Likert scale.

Table 3: Descriptive Statistics for Transactional Supply Chain Governance

Statements	Strongly disagree	Disagree	Not sure	Agree	Strongly agree	mean	Std. Dev
	%	%	%	%	%		
The firm promote compliance by followers through selective incentives and reward system	0	0	0	39.7	60.3	4.37	0.646
The firm enhances monitoring capacity on employees to ensure performance	0	0	2.3	36.3	61.4	4.51	0.590
The firm promote compliance by followers through setting goals and punishment system	0	0	2.7	42.3	55	4.51	0.721
The firm encourage and support the initiatives of individual employees to explore new opportunities for the benefit of the firm	0	0	0	42	58	4.47	0.551

Supervision and organization play a big role in the performance of the firm	0	0	0	39.7	60.3	4.37	0.646
The firm provide bonuses and merits or recognition to employees when they meet certain goals	0	0	2.3	36.3	61.4	4.51	0.590
The firm uses selective incentives as a form of managerial governance to achieve the firm's goals	2.7	2.7	0	38	56.6	4.40	0.856
The firm uses monitoring capacity as managerial governance to achieve the firm's goals	2.7	2.7	0	37.6	57	4.40	0.856
Employees are encouraged by the firm to develop new products	0	0	2.3	36.3	61.4	4.51	0.590
Transactional supply chain governance enhance entrepreneurial behavior and skills of employees	0	0	2.7	42.3	55	4.51	0.721

n=300;Key: Strongly Disagree=1, Disagree=2, Not Sure=3, Agree=4, and Strongly Agree=5

The findings indicated that on the statement of "The firm promote compliance by followers through selective incentives and reward system", the majority of the respondents, 181 (60.3%) gave strongly agreed and 119 (39.7%) gave agreed to the statement as evidenced by a mean of 4.37 and a standard deviation of 0.646. Concerning the statement of "The firm enhances monitoring capacity on employees to ensure performance", the majority of the respondents, 184 (61.4%) gave strongly agreed and 109 (36.3%) gave agreed to the statement, while a few of the respondents, 7 (2.3%) were not sure with the statement as shown by a mean of 4.51 and a standard deviation of 0.590. On the statement of "The firm promote compliance by followers through setting goals and punishment system", the majority of the respondents, 165 (55%) gave strongly agreed and 127 (42.3%) agreed to the statement, while a few of the respondents, 8 (2.7%) were not sure with the statement as supported by a mean of 4.51 and a standard

deviation of 0.721. Regarding the statement of "The firm encourage and support the initiatives of individual employees to explore new opportunities for the benefit of the firm", the majority of the respondents, 174 (58%) gave strongly agreed and 126 (42%) gave agreed to the statement as indicated by a mean of 4.47 and a standard deviation of 0.551. On the statement of "Supervision and organization plays a big role in the performance of the firm", the majority of the respondents, 181 (60.3%) gave strongly agreed and 119 (39.7%) gave agreed to the statement as supported by a mean of 4.37 and a standard deviation of 0.646.

About the statement of "The firm provide bonuses and merits or recognition to employees when they meet certain goals", the majority of the respondents, 184 (61.4%) gave strongly agreed and 109 (36.3%) gave agreed to the statement, while a few of the respondents, 7 (2.3%) were not sure with the statement as evidenced by a mean of 4.51 and a standard deviation of 0.590. Regarding the statement of "The firm uses selective incentives as a form of managerial governance to achieve the firm's goals", the majority of the respondents, 170 (56.6%) gave strongly agreed and 114 (38%) agreed to the statement, while a few of the respondents, 8 (2.7%) gave disagreed and 8 (2.7%) strongly disagreed to the statement as shown by a mean of 4.40 and a standard deviation of 0.856. Concerning the statement of "The firm uses monitoring capacity as managerial governance to achieve the firm's goals", the majority of the respondents, 171 (57%) gave strongly agreed and 113 (37.6%) agreed to the statement, while a few of the respondents, 8 (2.7%) gave disagreed and 8 (2.7%) strongly disagreed to the statement as supported by a mean of 4.40 and a standard deviation of 0.856.

Regarding the statement of "Employees are encouraged by the firm to develop new products and ideas", the majority of the respondents, 184 (61.4%) gave strongly agreed and 109 (36.3%) agreed to the statement, while a few of the respondents, 7 (2.3%) disagreed were not sure with the statement as evidenced by a mean of 4.51 and a standard deviation of 0.590. Finally, on the statement of "Transactional supply chain governance enhance entrepreneurial behavior and skills of employees", the majority of the respondents, 165 (55%) gave strongly agreed and 127 (42.3%) agreed to the statement, while a few of the respondents, 8 (2.7%) were not sure with the statement as shown by a mean of 4.51 and a standard deviation of 0.721. The findings were a clear indication that transactional supply chain governance enhance the performance of agro processing firms in Kenya as summarized in table 4.10. The findings compare well with that by Afsar *et al.* (2017) who established that transactional structures enhance employee's entrepreneurial behavior that leads to performance of firms. According to Hansen and Pihl-Thingvad (2018), transactional governance is positively associated with innovative behavior that enhances firm's performance. Melander and Lakemond, (2015) found out that transactional governance has distinct roles in achieving limited supplier involvement and establishing high levels of collaboration. According to Mkheimer (2018), transactional governance has a significant positive impact on business success.

4.4 Descriptive Statistics for Performance of Agro Processing Firms

The study sought to find out the performance of agro processing firms in Kenya as the dependent variable for this study. The main measures used to unveil the performance of the

firms included productivity, return of assets, market shares, sales growth, profitability, processing costs, cash flow, customer satisfaction, market position and product quality. The respondents were asked to rate performance of their respective firms based on these performance indicators. The respondents gave their views on how they ranked the performance metrics in principle siting no definitive measurements like ratios or percentage points, but based on their reviews of previous data present in their respective firms.

Table 4: Descriptive Statistics for Performance of Agro Processing Firms

Statements	Strongly disagree	Disagree	Not sure	Agree	Strongly agree	mean	Std. Dev
	%	%	%	%	%		
Productivity level in terms of output or volume increased for the last five (5) years	0	0	0	42	58	4.47	0.551
The return of assets level in terms of profits improved for the last five (5) years	0	0	0	39.7	60.3	4.37	0.646
Growth of market share in terms of firm's sales was registered for the last five (5) years	0	0	2.3	36.3	61.4	4.51	0.590
The sales growth in terms of revenue increase continued for the last five (5) years	2.7	2.7	0	38	56.6	4.40	0.856
The profitability level in terms of revenue generation was favourable for the last five (5) years	0	0	0	39.7	60.3	4.37	0.646
The processing or manufacturing costs reduced for last five (5) years	0	0	2.3	36.3	61..4	4.51	0.590

The cash flow level in terms of cash and cash-equivalents being transferred into and out of a business was adequate for last five (5) years	2.7	2.7	0	39.7	56.6	4.40	0.856
The customer satisfaction level in terms of meeting customer expectation and loyalty improved for last five (5) years	0	0	0	39.7	60.3	4.37	0.646
The market position level in terms of consumer's perception of firm's products was stable for last five (5) years	0	0	2.3	36.3	61.4	4.51	0.590
Product quality standards in terms of consumers' preference was maintained for last five (5) years	0	2.7	5.3	22.3	69.7	4.61	0.632

n=300; Key: Strongly Disagree=1, Disagree=2, Not Sure=3, Agree=4, and Strongly Agree=5

The findings based on these measures are presented on table 4 above. On the productivity and return of assets levels, the findings revealed that the respondents significantly ranked their firm performance as evidenced by mean of 4.47 and 4.37 respectively and standard deviation of 0.551 and 0.646 respectively. This is in tandem with the findings of Njuguna and Wanjohi (2021), who observed that performance of agro processing firms is measured using cost reduction, profitability market shares and productivity. This in line with the results of Mwaura and Okeyo (2020), who concluded that return on assets, return on equity, market share, sales volume, customer satisfaction and employee satisfaction, measure the performance of large manufacturing in Kenya. This in agreement with Wamiori, Namusonge and Sakwa (2019), who observed that financial performance of manufacturing firms in Kenya, is measured through return on assets and profitability.

The findings are in tandem with Kiriinya, Ngugi and Mwangangi (2021), who observed that profitability, customer satisfaction and market share play a big role in measuring the performance of pharmaceutical firms in Kenya. The results are in agreement with that of Sickles and Zelenyuk (2019), who established that productivity describes various measures of

the efficiency of production that is a crucial factor in production performance of firms and its growth can help businesses to be profitable. This is also in tandem with Shimenga and Miroga (2019) who observed that financial performance points out to the performance of manufacturing firms in Kenya. The return on assets measures how effectively a firm uses its assets to create profits and how much it generates by the firm from investing any amount in one individual employee. The findings compare with those by Mwangi, *et al.*, (2019), who established that the performance of manufacturing firms in Kenya is measured in terms of return on assets, return on equity, sales growth and profit margin. Muchiri and Jagongo, (2017) found out that return on assets measure performance of the Kenya Meat Commission in Kenya.

The respondents were asked to rate performance of their respective firms based on growth of market shares and sales growth levels. The findings revealed that the respondents agreed that their firms improved in market shares and sales growth because of adopting supply chain governance as shown by a mean of 4.51 and 4.40 respectively and standard deviation of 0.590 and 0.856 respectively. This is in line with the findings of Onyando and Naikuru (2021), who observed that profits and sales growth are used in measuring the performance of Kenya vehicle manufacturers limited. The market share is a key metric in understanding performance of a firm relative to the growth of the market as measurement of internal sales growth or decline. According to Sickles and Zelenyuk (2019), sales growth is a strategic indicator used in decision-making, and influences the formulation and execution of business strategy to improve firm's performance. Odalo, Njuguna & Achoki (2016) established that organizational performance is measured in terms of market share using sales per year, level of profitability and return on assets.

The findings revealed that the respondents were in agreement that transactional supply chain governance significantly increased profits and lowered processing costs of their firms as indicated by a mean of 4.37 and 4.51 respectively and standard deviation of 0.646 and 0.590 respectively. This is tandem with the findings of Kyengo, Muathe & Kinyua (2019), who observed that profitability, market share and customer retention indicate performance of food processing firms in Kenya. The results compare with those by Zelenyuk (2018), who established that profitability is ability of a company to use its resources to generate revenues in excess of its expenses. The findings are in agreement with those of Memia, Ngugi & Odhiambo, (2018) who found that the financial metrics including profitability, return on assets and market share measure the performance of large manufacturing firms in Kenya. The findings compare with those by Musau, *et al.*, (2017) who found that profitability measure the organizational performance among textile manufacturing firms in Kenya. Nielson (2013) asserted that there are two types of performance reports, which are service and cost performance reports.

The respondents indicated that the adoption of supply chain governance improved cash flow and led to improved customer satisfaction of their respective firms as shown by a mean of 4.40 and 4.37 respectively and a standard deviation of 0.856 and 0.646 respectively. The findings compare with those by Selvam, *et al.*, (2016), who found that the performance of a firm is a multi-dimensional construct that is measured with the cash flow, customer satisfaction and market position. According to Pokryshevskaya and Antipov (2017), customer satisfaction is a

key performance indicator within business and is often part of a Balanced Scorecard, and provides a leading indicator of consumer purchase intentions and loyalty. The result was in tandem with Shimenga and Miroga (2019), who observed that financial leveraging positively influences financial performance of manufacturing firms in Kenya and manufacturing firms with effective financial leveraging mechanisms could realize an increase in their profitability.

The respondents were asked to rate performance of their respective firms based on market position and product quality levels. The findings revealed that the respondents agreed that their firms improved in the market position and product quality because of adopting supply chain governance as shown by a mean of 4.51 and 4.61 respectively and standard deviation of 0.590 and 0.632 respectively. This finding is in line with Bor, Ngugi & Odhiambo (2021), who observed that product quality and cost management, measures the performance of food and beverage processing sector in Kenya. This is in line with Nimpano, Shalle and Mulyungi (2021), who concluded that customer satisfaction and quality measure performance of agri-manufacturing firms in Rwanda. The financial and cost indicators should be complemented by non-financial measures related to market position, quality of products, delivery and flexibility and be integrated with management's strategic objectives. According to Dekker, *et al.,* (2018), performance indicators in agro-food supply chains are efficiency, flexibility, responsiveness and food quality. Osoro, Muturi & Ngugi, (2015) used right quality, right quantity, right source and timeliness to measure performance of supply chain systems in the petroleum industry in Kenya.

4.5 Test of Hypothesis and Multiple Regression Analysis Results

The purpose of hypothesis testing is to determine the accuracy of the study hypothesis because the researcher has collected a sample of data. In hypothesis, testing the main question is whether to accept the null hypothesis or not to accept the null hypothesis (Denzin, 2017). The hypothesis test specifies which outcomes of a study may lead to a rejection of the null hypothesis at a pre-specified level of significance, while using a pre-chosen measure of deviation from that hypothesis (the test statistic, or goodness-of-fit measure). The pre-chosen level of significance is the maximal allowed (false positive rate). One wants to control the risk of incorrectly rejecting a true null hypothesis. A statistical hypothesis test is a method of statistical inference, which is the process of using data analysis to infer properties of an underlying distribution of probability (Se Yoon, 2021). The research used multiple regression analysis to establish the linear statistical relationship between transactional supply chain governance and performance of agro processing firms in Kenya. The hypothesis in this study was tested using regression models.

4.5.1 Regression Analysis of Transactional SCG on Performance of Agro Processing Firms

The objective of the study was designed to establish the effect of transactional supply chain governance on performance of agro processing firms in Kenya. Following the theoretical arguments, the following hypothesis was formulated and tested:

H_0: Transactional supply chain governance does not significantly effect the performance of agro processing firms in Kenya.

Table 5: Model Summary for Transactional SCG and Performance of Agro Processing Firms

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.774[a]	0.599	0.597	0.19418

a. Predictor: (Constant), Transactional supply chain governance
b. Dependable Variable: Performance of agro processing firms

The hypothesis was tested by running an ordinary least square regression model. The acceptance and rejection criteria was that, if the p-value is greater than 0.05, the H_0 is not rejected but if it is less than 0.05, the H_0 fails to be accepted. The model summary in table 5 above demonstrates the coefficient of determination as indicated by Adjusted R square to be 0.597 implying that 59.7% performance of agro processing firms in Kenya is explained by transactional supply chain governance. The researcher rejected the null hypothesis stating that transactional supply chain does not effect the performance of agro processing firms in Kenya. The researcher considered the alternative hypothesis since the transactional supply chain governance has significant effect on performance of agro processing firms in Kenya. This is in tandem with the findings Afsar *et al.* (2017) who established that transactional structures enhance employee's entrepreneurial behavior that leads to performance of firms. The result also compare well with that of Hansen and Pihl-Thingvad (2018) who observed that the transactional governance is positively associated with innovative behavior that enhances firm's performance. The results are in line with Melander and Lakemond, (2015) who found out that transactional governance has distinct roles in achieving supplier involvement and establishing high levels of collaboration leading to increased performance of firms. The findings are also in tandem with the findings of Mkheimer (2018) who observed that transactional governance has a significant positive impact on businesses' or firms' success and good performance echoed the same observation.

4.5.2 ANOVA for Transactional SCG and Performance of Agro Processing Firms in Kenya

In table 6 below, the ANOVA was used to show the overall model significance. The hypothesis was tested by running an ordinary least square regression model. The acceptance and rejection criteria was that, if the p-value is greater than 0.05, the H_0 is not rejected but if it is less than 0.05, the H_0 fails to be accepted. Since the p-value is less than 0.05, then transactional supply chain governance had a positive significant explanatory power on performance of agro processing firms (F=444.317 and p-value <0.05). The finding was supported by the p-value of

0.000. The researcher rejected the null hypothesis stating that transactional supply chain does not influence the performance of agro processing firms in Kenya. The researcher considered the alternative hypothesis since the transactional supply chain governance has significant influence on performance of agro processing firms in Kenya.

Table 6: ANOVA Table for Transactional SCG and Performance of Agro Processing Firms

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	16.753	1	16.753	444.317	.000[b]
	Residual	11.236	298	0.038		
	Total	27.988	299			

a. Dependent Variable: Performance of agro processing firms
b. Predictors: (Constant), Transactional supply chain governance

The finding as per table 6 is in tandem with that of Hansen and Pihl-Thingvad (2018) who observed that transactional governance is positively associated with innovative behavior that enhances the performance of firms. The finding is in agreement with that of Mkheimer (2018) who observed that transactional governance has a significant positive impact on the performance of businesses or firms that leads to their greater success. This finding compare well with that by Afsar *et al.* (2017) who established that transactional structures enhance employee's entrepreneurial behavior that leads to performance of firms. This result is supported by that of Melander and Lakemond (2015) who found out that transactional governance has distinct roles in achieving the supplier involvement and establishing high levels of collaboration that enhance the performance of firms.

5.0 CONCLUSIONS OF THE STUDY

The study established that transactional supply chain governance had a significant influence on the performance of agro processing firms in Kenya. This study concluded that transactional supply chain governance improves the performance of agro processing firms. This study also concludes that transactional supply chain governance should be implemented in the firms with good structures and rules that guide a firm in enhancing competitive edge within the global supply chains. This indicates that the proper implementation and adoption of transactional supply chain governance improves the performance of agro processing firms in Kenya. This study revealed that lack of direction from senior management and lack of communication across the entire supply chain could disrupt the efficiency of integration both internally and externally. Other barriers are lack of trust, failure to understand the importance of transactional supply chain governance, fear associated with losing control, misaligned goals and objectives, poor information systems, short-term as opposed to long-term focus, and supply chain

complexity issues exist in the actual implementation of transactional supply chain governance. The study further established that supply chain mechanisms protect the investments involved in transactions and thereby facilitate and promote sustainable and cooperative relationships.

6.0 RECOMMENATIONS OF THE STUDY

This study recommends that the managers of the firms should encourage and support the initiatives of individual employees to explore new opportunities for the benefit of the firm. The firms to use selective incentives as a form of managerial governance to achieve the firms' goals. The firms should provide bonuses and merits or recognition to employees when they meet certain goals. It is important for the firms to coordinate and hold regular meetings with its suppliers, and train their customers and suppliers to build the right capacity. The study outcome has revealed that the transactional supply chain governance is a vital supply chain system in improving the efficiency of the firms. The study outcome has revealed that further research should be carried out to determine the effect of transactional supply chain governance on performance of various agro processing firms not covered in this study.

The transactional supply chain governance is a part of governance style that focuses on supervision, organization and performance of firms through promotion of compliance by both rewards and punishments. Therefore, it is necessary for future researchers to undertake similar or replicate empirical studies in agro processing firms that are not members of Kenya Association of Manufacturers in order to validate the findings and conclusions of this study. The comparative future studies may also be undertaken in other manufacturing sectors in order to validate whether the findings and conclusions of this study can be generalized to the entire manufacturing industry in Kenya. In addition, other factors that may not have been accounted for in the direct relationship as implied by the coefficient of determination may also warrant the attention of future researchers. This will make the firms to aim at reasonable value addition to their products before consumption or exportation to maximize profits and be competitive in the global market. Such studies will be helpful in enhancing performance of many firms in agro processing sector and the entire manufacturing industry.

7.0 LIMITATIONS OF THE STUDY

This study faced various limitations including the fact that transactional supply chain governance is still a new area of study in developing countries and especially in Kenya. For this reason, some respondents were not cooperative during the study. The study faced a challenge of resistance by respondents to answer questions relating to performance of agro processing firms, occasioned by the confidentiality policy of most entities in the agro processing sector. The introduction letter provided by the university indicated that the data sought in the survey was for academic purposes only, and would be treated with utmost confidentiality mitigated this. The questionnaires were accompanied by a cover letter from the University and a permit from National Commission for Science, Technology and Innovation indicating the purpose of the study and potential contributions. The respondents were asked not to indicate their names on the questionnaires. This enabled respondents to freely avail the requested information towards the success of this study.

There was a limitation of the respondents not giving accurate information due to the divided attention of respondents to questionnaires and the desire to safeguard the reputation of their firms. This was delimited by informing the respondents of the magnitude and importance of the data to be collected as well as the ethical requirements expected of them upon consenting to participate in the study. In addition, securing the valuable time of the respondents to respond to the questionnaires was a big challenge. The researcher allowed the respondent adequate time to respond to the questionnaires and encouraged them on the benefits and significance of the study. The questionnaires were well constructed to capture the performance measures objectively. The contents of the questionnaires were explained to the respondents during the data collection stage. Reminder through follow up calls were made to encourage completion and return of the questionnaires, and to clarify any questions that had potentially risen.

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