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OUTBOUND LOGISTICS AND PERFORMANCE OF FOOD AND BEVERAGE MANUFACTURING FIRMS IN KENYA

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ABSTRACT

Despite the importance of the food manufacturing industry in Kenya, it has been experiencing a lot of turbulence in the recent past including a drop in the GDP, an increasing imbalance of trade, and the exiting of large multinationals. The main focus of this study was to assess the effect of outbound logistics on the performance of food and beverage manufacturing firms in Kenya. The research design that was appropriate for this study was a descriptive cross-sectional design. The 246 food and beverage manufacturing firms formed the source from which the respondents will be sourced. The population frame was thus the key informants of the 246 food and beverages firms. These firms are registered under the Kenya Association of Manufacturers. The study used a Stratified random sampling technique. The study further used simple random sampling within the different strata of 152 food and beverage manufacturing firms. The heads of departments concerned with key informants in each firm formed the unit of observation. The questionnaire was used to collect primary data. Quantitative and qualitative data were generated from the closed-ended and open-ended questions, respectively. Secondary data was collected on performance and descriptive statistics such as frequency distribution, mean (measure of dispersion), standard deviation, and percentages were used. Inferential data analysis was conducted by use of univariate regression analysis, Pearson correlation coefficient, and multiple regression analysis. The inferential statistic is used to make judgments about the probability that an observation is dependable or one that happened by chance in the study. The study results were presented through the use of tables, graphs, and figures. The study found that Outbound Logistics is statistically significant in explaining the performance of food manufacturing firms in Kenya. The influence was found to be positive, indicating that an increase in Outbound Logistics would lead to an increase in the performance of food manufacturing firms in Kenya. Therefore, the study concluded that Outbound Logistics has a positive and significant relationship with the performance of food manufacturing firms in Kenya. From the findings, the study recommends that manufacturing firms should develop a more efficient distribution network to ensure timely and cost-effective delivery of products to customers. The firms should utilize route planning software to determine the most efficient delivery routes, minimizing travel time and fuel consumption.

Key Words: Outbound Logistics, Food and Beverage Manufacturing Firms, Resource-Based View Theory

Background of the study

Operating a successful business can be a challenging fate. This is because the world has become more globalized and local firms have to compete with their local counterparts as well as international ones (Aguko, 2018). Businesses thus have to adopt strategies that will ensure they outperform their competition by having a strategic advantage over them. One of the ways a firm can gain a strategic advantage over its competitors is through operational efficiency and effectiveness. Dhillon and Vachhrajani (2016) define operational efficiency as the right mix of people, processes, and technology that enhances the productivity and value of a business.

This means the producer can enjoy larger profit margins as compared to a firm that does not consider the value chain. Consequently, this will give the firm a competitive advantage over other players in the industry (Donelan, & Kaplan, 2019). Other than increasing the profit margin, managing the value chain also means that the qualitative aspects that make up a firm can be managed. Qualitative aspects of a firm such as employee morale and customer experience are crucial to the performance of the firm in general (Johnson, Scholes, & Whittington, 2018).

Technological development has allowed access to real-time, up-to-date information across the entire value chain, which is having a significant impact on how organizations are doing and expect to do business. Integration of technology is informed by the need to allow quicker and easier connectivity between suppliers and their customers. It enhances the visibility of the customers whose needs and expectations are changing regarding response times, delivery times, and transparency (Iyer, Germain & Claycomb, 2019).

Technological integration facilitates the members to exchange information as well as enables real-time information sharing, thus increasing visibility (Prajogo & Olhager, 2016). Kim (2017) has introduced the concept of Integrative Information Technology in the context of SCI and has defined it as being the technology that enables the collection of relevant information relating to critical business processes while ensuring that the same is shared across all functional areas as well as across the firm boundaries. From the above definition, IT integration is essential in ensuring internal and external integration. Information systems are essential to managing the value chain integration, also referred to as the glue that holds the chain together.

IT development has two components mainly capabilities and information sharing, which, according to Prajogo and Olhager (2016) has significant effects on integration. Researchers have concluded that information sharing with internal and external parties such as the supplier and functional departments is a good precondition for external integration which leads to optimization (Zhao et al., 2017). For example, customer integration, according to Flynn et al. (2019), is the forward integration that links company technology and infrastructures such as point of sales (POS) systems, inventory management systems, and customer ordering systems. Technological integration assists the organization in communicating with customers resulting in increased accuracy in terms of demand planning and the speed of meeting demand variations (Flynn et al., 2019). Technological integration also ensures the resource requirement which is subsequently communicated to the suppliers assisting in forecasting given that the company can predict customer demands to lead to the operational performance given that the demand uncertainty ordinarily faced by the suppliers is eradicated (Danese & Romano, 2016).

According to Walters and Lancaster (2016), value chain management is a business system that creates end-user satisfaction and realizes the objectives of other member stakeholders and therefore needs for value chain management to facilitate the realization of these objectives. Value chain management requires "examining processes (physical, financial and informational) and uncertainties (opportunities for improvement and risks to achievement) from beginning to end of the chain (or network) in an integrated manner to optimize overall

value (Hardacre & Collins, 2018). Awino (2016) identified such universal value chain management practices as operating policies, linkages within value chain firms, improved performance, information technology systems, strategic alliance, performance measures, goal orientation, customer relationships, guidelines and procedures, supplier selection and supplier evaluation found to compare with best practices globally

However, these practices although compared with best practices globally, require a further study to establish other value management practices that add value to both the firm and customers. This research therefore seeks to explore such practices as procurement and sourcing, operational excellence, value chain network design, and distribution. Although not universal, value from these practices can only be achieved if and when an organization connects and convenes key players, develop the right strategies, practices seeing the system through one another's eyes, builds partnerships, evaluates and scales up the value chain, and institutionalize successful approaches (Schweitzer, et al., 2018)

With the advancement in technology, there has been the introduction of automated systems and complex machinery has revolutionized mass production (Nurazwa et al 2019). Increased output has slashed manufacturing costs, which in turn has led to cheaper costs on the high street. Electronic gadgets are now cheaper than ever, which in part is down to the low cost of manufacturing (Amy, Sithole & Buchana, 2022). Other several benefits are attributed to the adoption of technology. They include: increasing the efficiency of your business systems; streamlining your relationships with suppliers and customers; increasing the speed, flexibility, and efficiency of the production process; and expanding the range of what can be produced (Mkala, Wanjau & Kyalo, 2018).

Statement of the Problem

The manufacturing sector has a great potential for promoting economic growth and competitiveness in a country like Kenya. Data shows that the Government of Kenya spends between 10% - 30% of the Gross Domestic Product on procurement alone (Maria, 2022). In Kenya, the manufacturing sector is the third leading sector contributing to GDP in Kenya. It contributed 11% of the GDP in 2020 (Kenya Association of Manufacturers, 2020). Despite the importance of the food manufacturing industry in Kenya, it has been experiencing a lot of turbulence in the recent past including a drop in the GDP, an increasing imbalance of trade, and the exiting of large multinationals (Magutu, Aduda & Nyaoga, 2020). In addition to that, food manufacturing companies in Kenya have been experiencing fluctuations in profitability in their production and inbound logistics (KAM, 2019). The food manufacturing sector recorded a significant drop in performance from 4.7% to 1.6% and 2.7% to 0.2% respectively according to the World Bank Economic Update 2018. Further to this, there was a declining performance of agricultural real value-added from 5.2% in 2019 to 1.6% in 2021 (World Bank, 2022). According to the Kenya National Bureau of Statistics (KNBS) Economic Survey report of 2022, there has been a tremendous increase in the quantity of manufactured and processed food products by 3.1 percent in the year 2021 compared to a performance of 5.6 percent in 2020.

The performance was mainly driven by the processing of sugar, meat and meat products, dairy products, and bakery products. However, prepared and preserved fruits and vegetables, and animal and vegetable fats and oils registered negative performances in the same period. Production of meat and meat products recorded a 13.1 percent performance, while dairy production registered a 10.8 percent performance in 2021, compared to a slump of 6.7 percent in 2020. The grain milling subsector grew by 6.2 percent in 2021 compared to 11.7 percent the previous year as the beverages and tobacco sector showed a 9.2 percent performance (KNBS, 2022). According to a recent report from ING, technological development helps food manufacturers produce more efficiently for a growing world population. According to

TechCrunch (2018), the use of robots and machines in the food industry has made the production process much quicker and more efficient while also lowering costs, labor, and potential worker injuries at a minimum. There is no doubt that technology has transformed the food industry for the better, and as technology advances.

Various studies have been conducted on outbound logistics and organization performance and performance. For instance; Kwateng (2017) conducted a study on outbound logistics management in manufacturing companies in Ghana. Kusya (2016) conducted a study on the effect of logistics outsourcing on the operational performance of the shipping industry in Kenya. Macharia, Nzulwa, and Kwena (2017) conducted a study on the influence of logistics outsourcing on project performance in the oil and gas industry in Kenya. Musau (2016) conducted a study on the Impact of strategic Outsourcing on Organizational Performance. However, none of these studies focused on the performance of food and beverage manufacturing firms in Kenya. To fill the highlighted gaps, the current study sought to establish the effect of outbound logistics on the performance of food and beverage manufacturing firms in Kenya.

General Objective of the Study

The main focus of this study was to establish the influence of outbound logistics and the performance of food and beverage manufacturing firms in Kenya.

Theoretical Review

Theories are formulated to explain, predict, and understand phenomena and, in many cases, to challenge and extend existing knowledge within the limits of critical bounding assumptions (Swanson, 2017). The theoretical review is the structure that can hold or support a theory of a research study. The theoretical review introduces and describes the theory that explains why the research problem under study exists (Ravitch & Carl, 2016). The following section analyses the theories that are relevant to the existing study. This study was anchored on Resource View Theory

Resource-Based View Theory

The resource View theory of a firm helps to identify and appraise a firm's strategic resources relative to its competitors. According to Brown and Squire (2016); Mbithi et al. (2017) and Ovidijus (2013), the RBV approach can be traced back to Penrose in 1959, who described a firm as a collection of productive resources, and thus it is more than just administrative (Brown & Squire, 2016). According to Ovidijus (2013), the theory was further developed by Wernerfelt in 1984. It stems from the principle that the source of the firms' competitive advantage lies in their internal resources, as opposed to their positioning in the external environment. Barney (1991), one of the contributors to RBV theory of the firm suggests that the firm's structure; human capital that is the skills, judgment, and level of intelligence of the employees; and human resource management systems are key sources of competitive advantage to an organization. RBV theory is of the view that Strategic Management Models can lead to sustained competitive advantage by enhancing competencies through the development of a unique strategic market orientation of the organization.

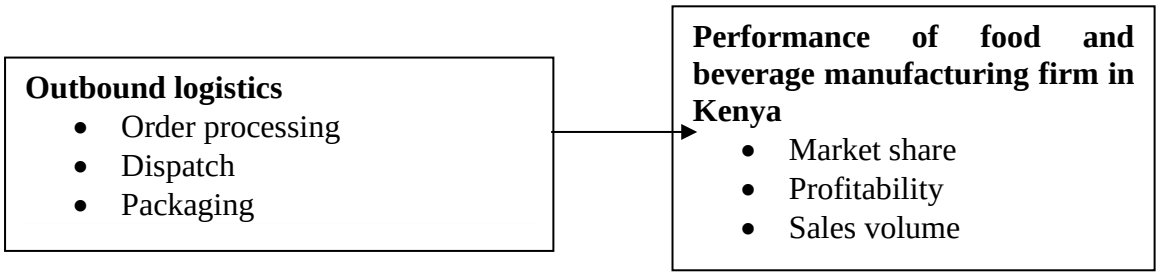
Eniola and Entebang (2017), in their study, noted that the resource-based view theory of the firm proposes that competitive advantage emanates from the assets and several resources owned by an organization that are of key value in comparison to those of its competitors. The Resource-Based View (RBV) suggests that the sustainable exceptional performance and competitive advantage of any organization are due to the accumulation and utilization of

resources, managerial choices, factor market imperfections, and strategic industry factors (Dharanaj & Beamish, 2016).

Resource-based View theory helps to explain how an organization can utilize its key resources within itself to gain a competitive advantage. Therefore, resource-based View theory was used in this study to establish the effect of Outbound Logistics on the performance of food manufacturing firms in Kenya. This can be achieved through the development of customized systems relevant to its operations. Competitive advantage is obtained from the assets and several resources within an organization that are of key value in comparison to those of its competitors. Resource-based theory suggests that resources that are valuable, rare, difficult to imitate, and non-substitutable best position a firm for long-term success. These strategic resources can provide the foundation to develop firm capabilities that can lead to superior performance over time.

Conceptual Framework

Conceptual framework refers to a diagrammatic set of interrelated ideas on a particular phenomenon and it's characterized by cause-and-effect relationships which help interpret more and hence make it easily understandable. This makes it more straightforward and also easily predictable (Svinicki, 2019). It is a diagram that explains the relationship between dependent and independent variables. In this study, the independent variable is Outbound Logistics while the dependent variable was the performance of food manufacturing firms in Kenya.



Independent Variables

Figure 2.1: Conceptual Framework

Outbound Logistics

The outbound logistics flow refers to the transportation of goods out of the business to external associates. It is set to help businesses within a value chain to maximize the reliability and efficiency of a distribution network and further reduce and/or minimize transportation as well as storage costs (Ayantoyinbo et al., 2018). The main function of outbound logistics is essential to deliver products to customers (Rajahonka & Bask, 2016). Furthermore, Porter (2018) mentions that multiple activities are associated with outbound logistics, i.e. collecting, storing, and physically distributing the products to buyers such as finished goods warehousing, material handling, delivery vehicle operation, order processing, and scheduling. Also, outbound logistics is a critical factor for a distributor and can create additional advantages. Furthermore, finding solutions to enhance the outbound logistics flow can help reduce costs and improve profits. Moreover, logistics is the single function of a firm that interacts with upstream and downstream actors within the value chain. Outbound logistics is therefore an essential flow to the chain which can create great value if an organization continuously to improve profits (Abushaikha et al., 2018).

Order processing is a key element of order fulfilment that occurs on the business end after a customer places an order. When a customer places an order, order management starts, and it concludes when they receive the product or service. How you integrate order management into your business capabilities will determine how well your firm performs. Here is a thorough explanation of value chain order management. Long-term business success depends on customer pleasure, and reliable and accurate order fulfilment is essential to achieving this goal. Since automated systems can lessen order processing errors, they assist in ensuring that all customers' orders are filled promptly. This can improve consumer satisfaction and increase business profitability (Liu, Lee & Hung, 2017).

Dispatching is the process of assigning tasks, resources, or personnel to specific jobs or locations in a timely and efficient manner. It involves coordinating the deployment of resources to meet demand, respond to emergencies, or execute planned activities (Sham, Wahab & Hussin, 2018). Dispatching plays a crucial role in various industries such as transportation, logistics, emergency services, and field operations, ensuring that resources are utilized optimally and tasks are completed according to schedule. This process often involves real-time monitoring, communication, and decision-making to adapt to changing conditions and priorities (Manandhar, Malindi & Shah, 2018). Dispatching is essential for optimizing operations efficiency. By efficiently assigning tasks or resources, organizations can minimize idle time, reduce delays, and maximize productivity. Effective dispatching ensures that resources are utilized optimally to meet demand while minimizing costs (Ayantoyinbo *et al*., 2018).

Packing is the preparation of a product or commodity for proper storage and/or transportation. Value chain optimization should manage product packaging in a timely, affordable, and error-free manner. While a poorly built supply network may hurt ROI and customer happiness, a well-structured value chain can lower costs and boost productivity during the production process. Few people are aware of just how crucial product packaging is to the value chain. In every business, product packaging is crucial. As the owner of a business, you want your items to be packaged in durable materials since they look beautiful and make buyers eager to receive them. Proper packaging may guarantee that business processes, from order processing to customer service, go smoothly (Sham, Wahab & Hussin, 2018).

Empirical Review

Outbound Logistics

Kwateng (2017) conducted a study on outbound logistics management in manufacturing companies in Ghana. Empirical research was employed to explore the outbound logistics performance of the manufacturing company. Structured questionnaires were used to capture the perception of the staff of GGBL regarding the outbound logistics performance of the services of the third-party logistics provider. The study revealed there was not much significant change in the value chain performance measure of outbound logistics activities for the services of DHL to GGBL. Suggestions for improving the issues captured are provided. The performance measurement construct obtained from the study can be used by the management of GGBL to perform routine assessments and evaluations of outbound logistics activities to improve the value chain performance of the organization.

Kusya (2016) conducted a study on the effect of logistics outsourcing on the operational performance of the shipping industry in Kenya. The population of the study in this research was 42 shipping companies operating in Kenya as per the KSAA, 2015 and the study was a census survey since the population was pretty small. The study used primary data which was collected through a structured questionnaire from Logistics and operations managers or their equivalents which was administered by the ‘drop and pick’ method. The response rate was

76.2%. The data was analysed using descriptive statistics with the main analysis tools being frequencies, mean and standard deviation, and multivariate linear regression by utilizing the Statistical Package for Social Sciences (SPSS). The results established that the firms opted to outsource their services due to its advantages and its possible influence on operational performance, as it enables the firms to focus on their core competencies. The logistics outsourcing practices adopted by the shipping firms will in the long run determine their survival as they seek to reduce operating costs, improve customer satisfaction, and timely delivery of services to clients which in turn increase productivity reduce lead time, and improve profits. The study confined itself to shipping firms in Kenya and the findings may not be applicable in other sectors as a result of the uniqueness of the shipping firms.

Macharia, Nzulwa, and Kwena (2017) conducted a study on the influence of logistics outsourcing on project performance in the oil and gas industry in Kenya. This study was set to examine the relationship between logistics outsourcing and oil and gas project performance in Kenya. Literature was reviewed with emphasis on the relationship between the variables, theoretical literature, and empirical literature. The unit of analysis was all managing directors of the 71 registered oil and gas players who gave the information on Oil and Gas Project performance and logistics outsourcing. Data was generated using questionnaires to oil and gas players on the variables. Responses were statistically analyzed using descriptive statistics, product-moment correlation, and regression analysis. Data was presented using charts, tables, and figures. The study found that there was a positive correlation coefficient between Oil and Gas projects and Transportation Outsourcing. The study found a weak positive correlation between Oil and Gas projects and Inventory Management Outsourcing.

Musau (2016) conducted a study on the Impact of strategic Outsourcing on Organizational Performance. The study employed a descriptive research design. Out of the study population of 1,000 employees of the company, a sample size of 90 was taken, whose elements were selected using a simple random sampling technique. Questionnaires were used as the primary data collection instrument. The response rate was 91 percent, with 82 questionnaires properly filled out of the issued 90 questionnaires. Data was analyzed using descriptive statistics, correlation and regression analysis then presented in tables. The findings of the study were: cost cost-driven outsourcing, innovation-driven outsourcing, and focus-driven outsourcing had a significant influence on organizational performance at Bidco Africa Ltd. The study found that cost-driven outsourcing led to improved organizational performance by reducing costs and risks while increasing operational efficiency, both in the short term and long term. Further, the study found that innovation-driven outsourcing improved organizational performance by enabling it to create, develop, and deliver value to the market faster than its competitors.

The success of innovation-driven outsourcing however was found to be largely dependent on cost control and core competencies focus, hence must be evaluated carefully. Finally, the study found that focus-driven outsourcing assists a company in freeing up its resources to concentrate on its core business, which leads to improved organizational performance.

Aluoch (2017) conducted a study on the effects of warehousing management on organizational efficiency, a case study of Ouru super stores in Kisii. A descriptive technique was used to analyse data collected where statistical measures of central tendency like mean, weighted average, and percentages. Questionnaires were coded sequentially to ensure uniformity during the presentation. It also involved searching for irregularities as well as patterns in research questions. The words and phrases were categorized based on research objectives. The analysed data was presented in frequency tables, percentages, and explanations. The study found that better coordination of the people and activities dealing with materials is one of the contributions of inventory classification to stores' efficiency; similarly, the study found that hastened inventory turnover, better communication and cooperation, and reduction of material

obsolescence are also the contributions of inventory classification to stores efficiency. Reduction of inventory costs is one of the contributions of material codification to stores' efficiency; on the other hand, the study found that efficiency in procurement and quick communication is also the contribution of material codification to stores' efficiency

RESEARCH METHODOLOGY

Research Design

This study adopted a cross-sectional survey research design. This design suits the scenario where the correlation of two variables is to be determined at an instant in time (Mugenda, 2008; Cooper & Schindler, 2019). Cross-sectional surveys are versatile and therefore give accurate means of evaluating information while enabling the researcher to confirm whether there are significant causalities among the variables (Harlow, 2017). Further, the design offers the researcher the opportunity to capture population characteristics and test hypotheses quantitatively and qualitatively. Orodho's (2018) cross-sectional research design analyses the cause-effect relationship between two or more variables. Hence the design was appropriate to the study because the research sought to establish a cause-effect relationship. The study adopted a cross-sectional since it uses theories and hypotheses to account for the forces that cause a certain phenomenon to occur (Cooper & Schindler, 2018).

Cross-sectional surveys are diverse; thus, they provide an accurate means of analysing information while also allowing the researcher to confirm whether there are substantial causal relationships between the variables (Harlow, 2019). Furthermore, the design allowed the researcher to collect demographic features and statistically and qualitatively test hypotheses. Previous researchers that have utilized a cross-sectional survey approach are (Musawir, Serra, Zwikael & Imran, 2017; Joslin & Müller, 2016; Pinyarat et al., 2018; Ihab, 2017; Asadullah et al., 2019).

Research Philosophy

This study adopted a positivist research paradigm. Cooper and Schindler (2017) assert that the positivist research paradigm takes the quantitative approach and is based on real facts, objectivity, neutrality, measurement, and validity of results. The roots of positivism lie particularly with empiricism, that is, all factual knowledge is based on positive information gained from observable experiences, and only analytic statements are allowed to be known as true through reason alone. Positivism maintains that knowledge should be based on facts and not abstractions; thus knowledge is predicated on observations and experiments based on existing theory (Cooper & Schindler, 2017). Epistemological research in the positivist paradigm is how the social world can be investigated as a natural science. Hypotheses have to be tested by empirical approaches. Koul (2018) posits that since the focus of the positivist paradigm is to discover the 'truth' through empirical investigation, the quality standards under this paradigm are validity and reliability. The positivist research philosophy was used in this study because it is grounded in theory, it uses quantitative methods, and the findings obtained through positivist research can be generalized to the larger population

Target Population

The target population is a collection of research components that refers to all members of an actual or imaginary group of people, events, or objects to whom the findings should be applied (Prabhat &Meenu, 2019). It can also be described as the set of sampling units or cases that the researcher is interested in. The target population, according to Kothari (2019), is a physical representation that contains all the units that could be members of the sample. A population can alternatively be thought of as the whole collection of elements from which the study wants to conclude. Mugenda and Mugenda (2018) define a population as a group of people, objects,

persons, or items from which a sample is extracted for analysis and to which generalizations can be made of the whole population. According to KAM (2018), there are 246 food and beverage manufacturing firms in number. These firms are grouped into 8 categories including; Alcoholic Beverages & Spirits, Bakers & Millers, Cocoa, Chocolate and Sugar Confectionery, Dairy Products, Juices / Waters / Carbonated Soft Drinks, Slaughtering, Preparation, and Preservation of Meat, Tobacco, and Vegetables Oils. Therefore, the unit of analysis was the firms while the unit of observation was the key informants working in each firm. The target population is presented in Table 3.1.

Table 3.1: Target Population

Category	Target population
Alcoholic Beverages & Spirits	43
Bakers & Millers	39
Cocoa, Chocolate and Sugar Confectionery	31
Dairy Products	28
Juices / Water / Carbonated Soft Drinks	40
Slaughtering, Preparation, and Preservation of Meat	30
Tobacco	5
Vegetable Oils	30
Total	**246**

Source: KAM (2022)

Sample and Sampling Technique

The study's sample size was reached using the Krejcie and Morgan sample size determination formula (Russell, 2018). A representative sample was obtained using this formula. The study's total population is 251. Simple random sampling was used to select 139 respondents from the total population.

formula used or arriving at the sample size is; $= \frac{x^2 NP(1-P)}{(E^2(N-1))+x^2 P(1-P))}$

Where:

n=sample size

x^2=Chi-square for the specified confidence level at 1 degree of freedom

N=Population size (251)

P = is the proportion in the target population estimated to have characteristics being studied. As the proportion was unknown, 0.5 was used.

Chuan and Penyelidikan (2016) indicate that the use of 0.5 provides the maximum sample size and hence it is the most preferable.

ME=desired margin of Error (Expressed as a proportion)

$$= \frac{1.96^2 251 * 0.5 * 0.5}{(0.05^2 * 251) + (1.96^2 * 0.5 * 0.5)}$$

$$= 152$$

Table 3.2: Sampling Table

Category	Target population	Sample Size
Alcoholic Beverages & Spirits	43	26
Bakers & Millers	39	24
Cocoa, Chocolate and Sugar Confectionery	31	19
Dairy Products	28	17
Juices / Water / Carbonated Soft Drinks	40	22
Slaughtering, Preparation, and Preservation of Meat	30	18
Tobacco	5	3
Vegetable Oils	30	18
Total	**246**	**152**

Data Collection Instruments

This study used both primary and secondary data. Secondary data refers to information that has been collected, processed, and documented by others for purposes other than the current research or study being conducted (Kultar, 2017). It is data that has already been gathered and made available in various forms, such as research reports, government publications, academic journals, databases, and websites (Singpurwalla, 2019). Secondary data was used to measure performance. Primary data (both qualitative and quantitative) was used in this study. Greener (2018) indicates that primary data is made up of first-hand information that has not been processed or analyzed. A questionnaire which is a form of quantitative data collection tool was used to collect primary data. The study's primary data was obtained using semi-structured questionnaires. This allows the study to collect quantitative data through the structured questions; the structured questions were useful as they enabled easy analysis of data and reduced the time and resources needed for data collection. On the other hand, the unstructured questionnaires will help the researcher get in-depth responses from the respondents as they give them a chance to provide views and suggestions on the various issues not captured by the structured questions

Data Collection Procedures

The researcher obtained a letter of confirmation from Jomo Kenyatta University of Agriculture and Technology for the collection of data. A research permit was also obtained from the National Commission for Science, Technology, and Innovation. The collection of data was conducted by use of the drop-off and pick-up-later method and the questionnaires were collected after one week. This accorded the respondents enough time to answer the questions. The researcher used this method due to the variances in respondents' time availability.

Pilot Study

The researcher carried out a pilot study to test for reliability and validity of the data collection tool. Results from the pilot test helped correct the challenges encountered before undertaking the final study. The pretesting sample was made of 15 respondents, representing 10% of the sample size. Piloting was done in large and small food manufacturing companies which were not part of the final study but have similar characteristics to manufacturing companies. The results from the pilot test were not used in the main study

Data Processing and Analysis

Quantitative and qualitative data were generated from the closed-ended and open-ended questions, respectively. Qualitative data was analysed on a thematic basis and the findings were provided in a narrative form. Before the data could be analysed, the researcher ensured the data was checked for completeness, followed by data editing, data coding, data entry, and data cleaning. Inferential and descriptive statistics were employed for the analysis of quantitative data with the assistance of Statistical Package for Social Sciences (SPSS version 28). To summarize the respondent's responses about their views on the various aspects of the variables, the respondents' demographic information analysis was undertaken using descriptive statistics (Bhattacherjee, 2016).

Descriptive statistics such as frequency distribution, mean (measure of dispersion), standard deviation, and percentages were used. Descriptive statistics therefore enables researchers to present the data in a more meaningful way, which allows for simpler and easier interpretation (Singpurwalla, 2017). Inferential data analysis was conducted by use of univariate regression analysis, Pearson correlation coefficient, and multiple regression analysis. The inferential statistic is used to make judgments about the probability that an observation is dependable or one that happened by chance in the study. Before conducting inferential statistics, the researcher conducted diagnostic tests.

Regression Analysis

A multiple regression model was used to test the significance of the influence of the independent variables on the dependent variable. Multiple regression analysis was used to establish the influence of outbound logistics on the performance of food and beverage manufacturing firms in Kenya. Regression analysis attempts to determine whether a group of variables together predict a given dependent variable and, in this way, attempts to increase the accuracy of the estimate (Mugenda & Mugenda, 2003). The use of regression model is ideal due to its ability to show whether a positive or a negative relationship exists between independent and dependent variables (Mason, Lind, & Marchal, 1999).

Statistical Model

The multiple regression equation model was as illustrated below: -

$Y= \beta_0+ \beta_1 X_1 +e$

Where:

Y is the dependent variable (Performance of food and beverage manufacturing firms in Kenya),

β0 is the constant (Co-efficient of intercept)

β1, is the slope of the regression equation,

X1 is the Outbound Logistics independent variable,

while

e is an error term

The equation was solved using a statistical model where SPSS was applied to generate the t- value.

RESEARCH FINDINGS AND DISCUSSION

Descriptive Analysis

In this section, the study presents findings on Likert scale questions where respondents were asked to indicate their level of agreement with various statements that relate to the relationship between Outbound Logistics and the performance of food and beverage manufacturing firms in Kenya. They used a 5-point Likert scale where 1-strongly disagree, 2-disagree, 3-moderate, 4-agree, and 5-strongly agree. The means and standard deviations were used to interpret the findings where a mean value of 1-1.4 strongly disagreed, 1.5-2.4 disagree, 2.5-3.4 neutral, 3.5-4.4 agree and 4.5-5 strongly agree. Standard deviations greater than 1 implied great deviation

in data points from the mean. This section of the study also presented findings from open-ended questions which were presented in prose form.

Outbound Logistics

The second objective of the study was to assess the effect of outbound logistics on the performance of food and beverage manufacturing firms in Kenya. Respondents were therefore asked to indicate the extent to which they agreed or disagreed with statements relating to the effect of Outbound Logistics on the performance of food manufacturing firms in Kenya. Table 4.1 presents a summary of the findings obtained. The aggregate mean of 3.754 (SD= 0.904) shows that on average, the respondents agreed that Outbound Logistics affects the performance of food manufacturing firms in Kenya.

About order processing, the respondents agreed on average (M= 3.837, SD=0.891) that their company has an order processing system to capture order data from customer service employees or from customers directly as supported by 55.7% of respondents agreeing and 18.2% strongly agreeing. They also agreed (M= 3.826, SD= 0.882) that they use an order processing system to store the data in a central database and send order information to the accounting departments as supported by 54.9% agreeing and 20% strongly agreeing. In addition, respondents agreed on average (M= 3.794, SD= 0.939) that their company has carriers who fulfil the process of handling the goods to the customers' specified locations as supported by 58.2% agreeing and 18.4% strongly agreeing. The results are in line with the findings of Kwateng (2017) who established that order processing plays a significant role on organization performance.

Concerning Dispatch, the respondents agreed on average (M= 3.74, SD= 0.837) that their dispatch system ensures timely delivery of goods/services with 52.7% agreeing and 18.7% strongly agreeing. They also agreed (M= 3.731, SD= 0.877) that dispatched items reach their destination within the expected timeframe as supported by 55.2% agreeing and 13.4% strongly agreeing. Further, they agreed on average (M= 3.724, SD= 1.109) that the dispatch process is streamlined and minimizes delays as supported by 67.6% agreeing and 8.8% strongly agreeing. The findings concur with the findings of Manandhar, Malindi and Shah, (2018) who established that dispatching allows for delayed marketing and consumption of the produce as a way of dealing with time. The dispatching conditions must be optimized for this to be attained; otherwise, there would be severe losses

Regarding packaging Respondents also agreed on average (M= 3.693, SD= 0.85) that the outbound logistics systems that have been embraced by their company have provided advanced visibility and a broader overview of shipment distribution as supported by 54.4% and 14% agreed and strongly agreed respectively. They also agreed on average (M= 3.687, SD= 0.849) that their company uses logistics data to support the marketing team in planning digital marketing and advertising campaigns as supported by 54.2% of respondents agreeing and 16.2% strongly agreeing. The study findings are in line with those of Sham, Wahab and Hussin, (2018) who established that proper packaging guarantees that business processes, from order processing to customer service, go smoothly.

The aggregate mean of 3.754 (SD= 0.904) shows that, on average, the respondents agreed that Outbound Logistics affects the performance of food manufacturing firms in Kenya. This finding is consistent with Kwateng (2017) who in his study revealed that the performance of outbound logistics activities significantly affects the overall performance of organizations. The findings suggested that routine assessment and evaluation of outbound logistics activities can help improve value chain performance. The study also agrees with Musau (2016) who indicated that different types of outsourcing, such as cost-driven, innovation-driven, and focus-driven, can significantly influence organizational performance. Cost-driven outsourcing was found to

reduce costs and risks while increasing operational efficiency. Innovation-driven outsourcing helped organizations create and deliver value faster, while focus-driven outsourcing allowed companies to concentrate on their core business, leading to improved organizational performance.

Table 4. 1: Descriptive Statistics on Outbound Logistics

Statements	1 %	2 %	3 %	4 %	5 %	Mean	Std. Dev.
Order processing							
Our company has an order processing system to capture order data from customer service employees or customers directly	1	6.4	18.7	55.7	18.2	3.837	0.891
We use an order processing system to store the data in a central database and send order information to the accounting departments	1.5	9.2	14.4	54.9	20	3.826	0.882
Our company has carriers who fulfill the process of handling the goods to the customers' specified locations	2.8	9.9	10.6	58.2	18.4	3.794	0.939
Dispatch							
Our dispatch system ensures timely delivery of goods/services.	4.7	6.7	17.3	52.7	18.7	3.74	0.837
Dispatched items reach their destination within the expected timeframe.	1.5	6	23.9	55.2	13.4	3.731	0.877
The dispatch process is streamlined and minimizes delays.	1.8	9.4	12.4	67.6	8.8	3.724	1.109
Packaging							
The outbound logistics systems that have been embraced by our company have provided advanced visibility and a broader overview of shipment distribution	0.9	11.2	19.5	54.4	14	3.693	0.85
Our company uses logistics data to support the marketing team in planning digital marketing and advertising campaigns	0.6	16.8	12.3	54.2	16.2	3.687	0.849
Aggregate Score						**3.754**	**0.904**

When asked about the other ways in which outbound logistics affect the performance of food manufacturing firms in Kenya. They explained that timely and accurate delivery of finished products to customers is crucial for maintaining customer satisfaction and loyalty. Effective outbound logistics ensures that products reach the market on time, allowing us to meet customer demands and strengthen our market position. They also highlighted the importance of cost management and efficiency in outbound logistics. A respondent mentioned, "Efficient outbound logistics operations, such as optimized routing and transportation planning, help us minimize transportation costs and improve profitability. This allows us to remain competitive in the market." Respondents also emphasized the role of outbound logistics in ensuring product quality and reducing product losses. A respondent stated, "Proper handling and transportation practices in outbound logistics play a significant role in preserving the quality and integrity of our products. This is crucial in meeting regulatory requirements and maintaining the trust of our customers."

Furthermore, the role of outbound logistics in maintaining accurate inventory levels was highlighted. They explained, "Effective coordination between the warehouse and outbound logistics ensures accurate inventory management. This helps us prevent stockouts and overstocking, optimizing our inventory levels and reducing costs." Also, the importance of outbound logistics in enhancing customer service and maintaining strong relationships with retailers was emphasized. A respondent mentioned, "Efficient outbound logistics operations enable us to provide reliable and consistent deliveries to our retail partners. This fosters trust and strengthens our relationships, leading to increased sales and market share." Moreover, the impact of outbound logistics on market expansion and customer reach was brought up. They

stated that well-managed outbound logistics allow them to expand into new markets and reach customers in different regions. This not only drives revenue growth but also enables them to diversify their customer base and mitigate risks.

When asked for suggestions on improving outbound logistics in food manufacturing firms, respondents provided valuable insights. They emphasized the importance of technology, stating, "Investing in advanced logistics management systems and automation can streamline processes and improve efficiency." They also highlighted the significance of strategic partnerships, with one respondent stating, "Forming partnerships with reliable transportation providers can optimize delivery routes and ensure timely deliveries." Data analytics was emphasized, with a respondent mentioning, "Implementing robust data analytics tools can provide valuable insights for continuous improvement." Efficient inventory management was emphasized, with a suggestion to "minimize order processing times and prevent stockouts." Staff training and development were also mentioned, with a respondent stating, "Investing in training programs for logistics personnel enhances their skills and knowledge." Sustainable practices were highlighted as well, with a suggestion to "optimize transportation routes to reduce emissions and implement eco-friendly packaging solutions." The results are in line with the findings of Musau (2016) who established that cost-driven outsourcing led to improved organizational performance by reducing costs and risks while increasing operational efficiency, both in the short term and long term. Further, the study found that innovation-driven outsourcing improved organizational performance by enabling it to create, develop, and deliver value to the market faster than its competitors

Performance of Food and Beverage Manufacturing Firms in Kenya

The performance of food and beverage manufacturing firms was measured through market share, profitability, and sales. Statistics presented in this section cover a period of 5 years from the years 2018 to 2022 and are done in billions.

Results for the market share of food and beverage manufacturing firms in Kenya for the period between 2018 and 2022 are shown in Table 4.2. In the year 2018, the market share for food and beverage manufacturing firms was 296 billion which increased to 331 billion in 2019. In 2020, the market share was 369 billion before increasing to 396 billion in the following year (2021) and finally 444 billion in the year 2022

Results for the profitability of food and beverage manufacturing firms in Kenya for the period between 2018 and 2022 are shown in Table 4.2. In the year 2018, the profitability of food and beverage manufacturing firms was 32 billion which increased to 43 billion in 2019. In 2020, the profitability was 47 billion before increasing to 50 billion in the following year (2021) and finally 56 billion in the year 2022. Magutu, Aduda and Nyaoga, (2017) revealed that Organizations that can cater for their expenses and retain savings are profitable and this is a sign of upward performance.

Results for the sales volume of food and beverage manufacturing firms in Kenya for the period between 2018 and 2022 are shown in Table 4.2. In the year 2018, the sales volume of food and beverage manufacturing firms was 48 billion which increased to 64 billion in 2019. In 2020, the sales volume was 70 billion before increasing to 75 billion in the following year (2021) and finally 84 billion in the year 2022. Beth, Burt, and Capacino, (2019) revealed that sales volume is a key performance indicator in measuring the performance of an organization.

Table 4. 2: Organization Performance

Year	2018	2019	2020	2021	2022
Market Share (Billions)	296	331	369	396	444
Profitability (Billions)	32	43	47	50	56
Sales Volume (Billions)	48	64	70	75	84

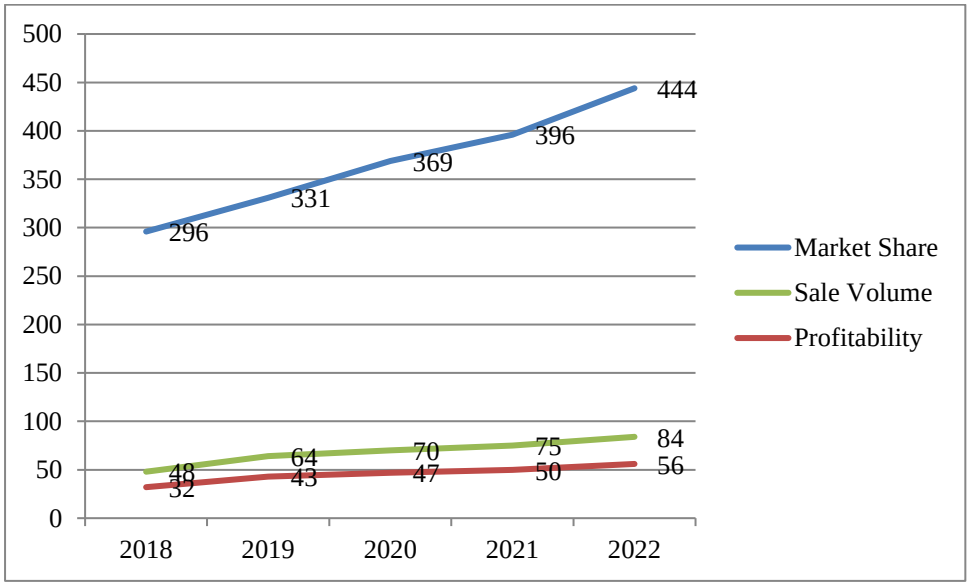


Figure 4. 1: Organization Performance

Test for Hypothesis One

The objective of the study was to establish the effect of outbound logistics on the performance of food and beverage manufacturing firms in Kenya. The associated null hypothesis was that Outbound Logistics does not influence the performance of food manufacturing firms in Kenya. A univariate analysis was conducted to test the null hypothesis.

R is the correlation coefficient, which indicates the strength and direction of the relationship between the predictor and outcome variables. In this case, R = .843 suggests a strong positive relationship between Outbound Logistics and the outcome variable (performance of food manufacturing firms in Kenya). R Square is the coefficient of determination, which indicates the proportion of variance in the outcome variable that can be explained by the predictor variable. In this case, R Square = .711 suggests that 71.1% of the variation in the performance of food manufacturing firms in Kenya can be explained by Outbound Logistics.

The remaining 28.9% variation in performance of food manufacturing firms in Kenya suggests that there are other important factors that influence the outcome variable, and further research may be needed to identify these factors and improve the predictive accuracy of the model.

Table 4.3: Model Summary for Outbound Logistics

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.843[a]	.711	.712	.44086

a. Predictors: (Constant), Outbound Logistics

The analysis of variance was used to determine whether the regression model is a good fit for the data. From the analysis of variance (ANOVA) findings in Table 4.4, the study found that Prob>F (1, 220) = 0.000 was less than the selected 0.05 level of significance. This suggests that the model as constituted was fit to predict the performance of food manufacturing firms in Kenya. Further, the F-calculated, from the table (17.243) was greater than the F-critical, from F-distribution tables (3.915) supporting the findings that Outbound Logistics can be used to predict the performance of food manufacturing firms in Kenya.

Table 4.4: Analysis of Variance for Outbound Logistics

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.742	1	5.742	17.243	.000[b]
	Residual	42.68	128	.333		
	Total	48.422	129			

a. Dependent Variable: Performance of food manufacturing firms
b. Predictors: (Constant), Outbound Logistics

From the results in Table 4.5, the following regression model was fitted.

$$Y = 1.161 + 0.812\ X_2$$

(X_2 is Outbound Logistics)

The coefficient results showed that the constant had a coefficient of 1.161, suggesting that if Outbound Logistics was held constant at zero, the performance of food manufacturing firms in Kenya would be 1.161 units. In addition, results showed that the Outbound Logistics coefficient was 0.812, indicating that a unit increase in Outbound Logistics would result in an 81.2% improvement in the performance of food manufacturing firms in Kenya. It was also noted that the P-value for the Outbound Logistics coefficient was 0.000, which is less than the set 0.05 significance level, indicating that Outbound Logistics was significant.

Based on these results, the study rejected the null hypothesis and accepted the alternative that there is a positive significant influence of Outbound Logistics on the performance of food manufacturing firms in Kenya. The findings concur with Kwateng (2017) who established that the firms opted to outsource their services due to its advantages and its possible influence on operational performance, as it enables the firms to focus on their core competencies. Similarly, a study by Gitagia (2015) found that Outbound Logistics had a positive significant influence on firm performance

Table 4.5: Beta Coefficients for Outbound Logistics

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.161	0.165		7.036	.001
	Outbound Logistics	.812	.149	.743	5.435	.000

a. Dependent Variable: Performance of food manufacturing firms

Summary of Findings

The objective of the study was to assess the effect of outbound logistics and the performance of food and beverage manufacturing firms in Kenya. The study found that outbound logistics has a positive and significant influence on the performance of food and beverage manufacturing firms in Kenya. From the results, the respondents agreed that their company has an order processing system to capture order data from customer service employees or customers

directly. In addition, they agreed that they use an order processing system to store the data in a central database and send order information to the accounting departments. Further, the respondents agreed that their company has carriers who fulfil the process of handling the goods to the customers' specified locations

Regarding dispatching, the respondents agreed that their dispatch system ensures timely delivery of goods/services. In addition, the respondents agreed that dispatched items reach their destination within the expected timeframe. Further, the respondents agreed that the dispatch process is streamlined and minimizes delays. The study also revealed that outbound logistics systems that have been embraced by the firms have provided advanced visibility and a broader overview of shipment distribution. The respondents also agreed that their company uses logistics data to support the marketing team in planning digital marketing and advertising campaigns

Regarding packaging Respondents also agreed that the outbound logistics systems that have been embraced by their company have provided advanced visibility and a broader overview of shipment distribution. They also agreed that their company uses logistics data to support the marketing team in planning digital marketing and advertising campaigns. The study findings are in line with those of Sham, Wahab and Hussin, (2018) who established that proper packaging guarantees that business processes, from order processing to customer service, go smoothly.

Conclusions

The null hypothesis for this variable was 'Outbound Logistics does not influence the performance of food manufacturing firms in Kenya.' However, the study found that Outbound Logistics is statistically significant in explaining the performance of food manufacturing firms in Kenya. The influence was found to be positive, indicating that an increase in Outbound Logistics would lead to an increase in the performance of food manufacturing firms in Kenya. Therefore, the study concluded that Outbound Logistics has a positive and significant relationship with the performance of food manufacturing firms in Kenya.

Recommendations

Manufacturing firms should develop a more efficient distribution network to ensure timely and cost-effective delivery of products to customers. The firms should utilize route planning software to determine the most efficient delivery routes, minimizing travel time and fuel consumption. This will reduce transportation costs and improve delivery speed. In addition, the firms should evaluate whether a centralized or decentralized distribution model is more appropriate for their business. Centralized distribution centres can offer economies of scale, while decentralized centres may reduce transportation distances and improve responsiveness.

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