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INFLUENCE OF DISTRIBUTION MANAGEMENT STRATEGIES ON THE PERFORMANCE OF CEMENT MANUFACTURING FIRMS IN MACHAKOS COUNTY; KENYA

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ABSTRACT

The main aim of the study was to determine the influence of distribution management and performance of Cement manufacturing Firms in Machakos County; Kenya. The specific objectives were to determine the influence of distribution management system, to establish the influence of distribution planning on performance of Cement manufacturing Firms in Machakos County; Kenya. This study used descriptive research design Descriptive research design is used to describe characteristics of a population or phenomenon being studied. The target population were 126 logistics and distribution officers working in seven cement-manufacturing firms namely: Bamburi Cement Limited, Rhino Cement Foundation, East African Portland Cement Company, Mombasa Cement Company, and Savannah Cement, Athi River Mining Ltd And National Cement Company Ltd. The study collected primary data for analysis. Primary data was obtained by the use of structured questionnaires. The questionnaires was pretested to ensure clarity and content validity prior to them being administered. The collected research data was checked for any errors and omissions, coded defined and entered into Statistical Package for Social Science (SPSS Version 23 Descriptive statistics, which was used to portray the sets of categories, formed from the data. The study used multiple linear regression analysis to test the statistical significance of the various independent variables. The study found out that A Distribution Management System (DMS) is a capable of collecting, cement manufacturing firms displaying and analyzing real-time or near real-time electric distribution system information. A DMS system enable logistics and distribution manager in cement firms to plan and execute complex distribution system operations in order to increase system efficiency, optimize power flows, and prevent overloads. The study concluded that distribution planning is an important part of the business cycle for distributors and wholesalers.

Key words: *Distribution Management System, Distribution Planning, Performance*

INTRODUCTION

The study analyzed the influence of distribution management strategies on performance of Cement manufacturing Firms in Machakos County; Kenya. Specifically, this chapter provides information on the global perspective of distribution management strategies on performance

concept and then narrows down to regional and then local perspectives as well statement of the problem, objectives of the study and research questions.

Distribution management is an important part of the business cycle for distributors and wholesalers. The profit margins of businesses depend on how quickly they can turn over their goods. The more they sell, the more they earn, which means a better future for the business. Having a successful distribution management system is also important for businesses to remain competitive and to keep customers satisfied (Joto, 2018). Logistics management techniques are being developed in the field of inter-state relations. Cement is the second most consumed substance in the Kenya after water. It is irreplaceable ingredient in a vast majority of the applications needed in our daily life. Civil infrastructure projects, houses, power generation plants and many more cannot be built without it. In general, cement is a mixture of limestone, sand, shell, clay and iron. In Kenya, there are seven cement-manufacturing firms namely: Bamburi Cement Limited, Rhino Cement Foundation, East African Portland Cement Company, Mombasa Cement Company, and Savannah Cement, Athi River Mining Ltd And National Cement Company Ltd.

Distribution management techniques are being developed in the field of inter-state relations (Mwangi,2018).Logistics is considered as the direction of economic activity used to manage the material flow in the areas of production and circulation. It is a well interdisciplinary research field directly related to the search for new opportunities to improve the efficiency of material flow (Netland & Ferdows. 2015).Logistics activities are integrated in nature and extends from the moment of the need for a product or service and the time to meet this need.

According to Mangan and Lalwani, (2016), states that distribution management as the process of overseeing the movement of goods from supplier or manufacturer to point of sale. It is an overarching term that refers to numerous activities and processes such as packaging, inventory, warehousing, supply chain, and logistics. Distribution is a joint venture enterprise to consolidate and control the processes aimed at achieving the objectives - making profit and customer satisfaction. MReza (2015) added that all functions and operations should be planned, managed and coordinated as a whole. All processes in the framework of the individual functions are coordinated with each other and create thus reserves to reduce overall costs. The basis of the work consists of different distribution areas, which includes procurement of raw material procurement, production, marketing, transportation, information technology, as well as various control systems - inventory, product quality planning (Negrao &Marodin, 2016).

Distribution information should come in time management system, as required by many logistics technology, especially based on the concept of just in time. Timeliness of information is important for virtually all integrated logistics functions. In addition, many of the tasks in transportation, operations management, order management and inventory management are solved in real time. All Distribution functions require numerous monitoring, timely receipts and processing of information realized through implanting the modern logistics technologies and bar coding implementation of standards EDI (Negrao & Marodin, 2016).

Globalization brings opportunities and challenges to the cement industry. It simply provides the opportunity for the international cement leaders to increase their investments by increasing their production to meet local growing demand and the opportunity to expand their businesses in newly growing international markets, On the other hand, cement industry faces new challenges, for example, higher competition from newly developed materials and the introduction for more restrict regulation especially environmental regulations. This is why

most cement producers are organizing themselves in national and international cement associations. Multinational companies expand their market presence in China, through local distribution partners who are crucial due to their advantages in local networks and market expertise. The third party service provider who manages the inventories in his warehouse receives the cargo, unpacks the shipments from bulk skids to individual carton level and completes inbound formalities including updating of inventories in its system and stocks the materials in designated rack locations (Nourifar& Paydar, 2018). Dell is continuously kept informed of the data regarding shipments and stocks the warehouse stocks inventory in the name of various vendors at SKU level Most of the times these warehouses are situated adjacent to the plant or at proximity. Upon receiving a production order from Dell as per Bill of Material received through DELL ERP system, items are picked up, loaded into the supply cages and trays as per predetermined design and delivered to the plant. After completing documentation system entries remove inventory from the system held in vendors name, invoice raised and physical delivery accompanied with documents completes the supply chain cycle of Raw material supply (deMattos & Gonçalves, 2019).

Distribution from a production facility in south Africa are centralized inventories in the maker, which offers a greater degree of product availability and it is usually utilized for high-value solutions, with unpredictable and low demand (Kumar & Tiwari 2020). Another benefit of this kind of Distribution system in the list company operated in Ghana West Africa is the fact that handling costs is reduced considerably since the items are delivered to customers from the production line (Beers& Zand, 2014). Pharmaceutical in South Africa Distribution from an intermediate DC or maybe warehouse enables listing to be taken in the intermediate facilities. This kind of Distribution network is great for high demand items. Transportation expenses are generally lower and response times shorter. Nevertheless, because there are extra intermediate facilities, the entire facility costs also. The Distribution network development makes considerable strides in developed markets particularly in categories like books, phones, durables, and apparel. Food and beverages retailers have begun distribution operations in reaction to the development of retail business (Saviozzi & Silvestro, 2019).

The biggest perishables logistics provider in East Africa, Kuehne + Nagel plays an important role in the time-critical transport of this export product, which is extremely important for Kenya's economy. A multiple distribution channel strategy works for retailers with diverse product lines. Diversifying distribution channels reduces the risk associated with a single channel, by ensuring sourcing is running smoothly across several alternative channels with the Mount Kenya regions. Kuehne + Nagel leverages pricing flexibility, as products are sourced and moved to market, using different methods. Using each strategy, and ultimately capitalize on the lowest cost option. Alternatively, the distributor leverages the channel with the least amount of lag time to quickly source and meets demand (Mwangi, 2018).

The Coca-Cola Company can be looked upon as a best food and beverage distributor in Kenya market by using third party logistics distributors and logistics automation. The global business that operates on a local scale and this has been possible because of the Coca-Cola system that includes developing the best distribution channels to mark its product footprints in every Kenyan market and east Africa market at large. The bottling partners work in close relation with the customers i.e. the restaurants, grocery stores, the convenience stores, amusement parks and the movie theatres so that localized strategies that have been developed in partnership with the company can be executed efficiently (Awino, 2019).

The Coca-Cola Company Sales models and distribution channels are interconnected. The ability to source and sell will always be tied together. High-ticket items are often divided into sales regions or territories, where dealers are guaranteed access to their markets without

same-brand competition (Njoroge, 2016). This model has moves from the manufacturer to the distributor. The distributor manages dealers and delivers inventory. The dealers focus on consumer sales. Using vertical integration as a competitive strategy that is adopted by the firms in order to take complete control over one or more stages in the production or distribution of its products. It is generally adopted to take full control over the supply chain. Nevertheless, the key factor is the price of which is determined by the level of the price of sales and production. To reduce these expenses is just feasible with the utilization of various techniques of the distribution right, to the entire cycle of motion of goods (Jane, Aosa, & Njihia, 2018).

Statement of the Problem

A well planned and organized distribution network is absolutely vital for cement firms to get products from cement depot to end customer in the most efficient and effective way, A good distribution system quite simply means the cement firms has greater chance of selling its products more than its competitors(Mwangi, 2018).Due to the increase in operating cost in Kenya accustomed to distribution management, warehouse operation and inbound and outbound logistics operation. There have been further drops in revenues for Financial Year 2017 and Financial Year 2018 due to expected increase in competitive pressure as well as lower production and poor approach on distribution outsourcing, based on the expectation of increased local production of cement demand, which is associated with poor distribution mapping firms in Kenya (Mwangi, 2018).

During the first half of 2017, the sector recorded a slowed growth of 7.8% compared to 15.7% growth in a similar half of 2016. This was mainly because of significantly scaled-down activities of the SGR phase 1 as it neared completion. Consumption of cement that increased by 6.1%, driven by increased credit to the sector by 8.0 %.(KIPPRA, 2017). Data from the Kenya National Bureau of Statistics (KNBS) indicates that property developers in Nairobi have considerably scaled down their construction activities. The value of buildings approved for construction by Nairobi County in the first seven months of 2017 declining by 18.4% to Sh149.5 billion down from Sh183.2 billion in the same period last year which attributed by the high cost associated in the distribution the construction sites. However due to logistics cost 80 % and other fixed cost cement firms are not performing well for instance Lafarge Bamburi Group posted a 13% drop in its pre-tax profit to stand at US$43.9m for the first half in the year 2015 The group's operating profit was down by 9%. Overall, Bamburi Cement posted a 15% drop in pretax in 2017. East Africa Portland Cement Company limited registered a loss of sh567 million in 2018 compared with a sh154.06 million loss for the same period in 2017 (KNBS ,2017).

According to Njambi and Katuse, (2013), carried out a study on Third party logistics in distribution efficiency and delivery for competitive advantage in fast moving consumer goods. The study concluded that outsourcing of non-core logistics activities is triggered by the need to eliminate duplication of roles, efforts, and the dysfunction existing within the organization, the study never made clear discussion on distribution management strategies. This study seeks to fill the existing knowledge gap by introducing the link between distribution management and performance of cement manufacturing firms in cement manufacturing industry. This has therefore triggered the need to investigate the influence of distribution management strategies on performance of Cement manufacturing Firms in Machakos County; Kenya.

Research Objectives

i. To determine the influence of distribution management system on the performance of Cement manufacturing Firms in Machakos County; Kenya
ii. To establish the influence of distribution planning on performance of Cement manufacturing Firms in Machakos County; Kenya

LITERATURE REVIEW

Theoretical literature

Adaptive Structuration Theory

The adaptive structuration theory (AST) assisted the study in determining the influence of Distribution Management System and performance of Cement manufacturing Firms in Machakos County; Kenya. Anthony Giddens first proposed the theory in his constitution of the society in 1984, which was an attempt to reconcile social systems and the micro/macro perspective of organizational structure. Desanctis and Poole borrowed from Giddens in order to propose AST and the rise of group decision support systems in 1996. AST provides the model whereby the interaction between advancing information technologies. Resources provided in logistics activities describe social structures and human interaction. This includes inbound logistics to the sourcing, expediting and receiving of goods that are coming to the organization. This is a viable approach in studying how inbound logistics affects warehouse management because it examines and focuses on buying and scheduling the inflow of materials, tools and final goods, from suppliers to the production unit, warehouse or retail store (Kotzab & Luttermann, 2018).

AST is relevant in today's Inbound Logistics practice due to the expanding influence that advancing technologies have had with regard to the human interaction aspect of AST and its implication on socio-biologically inspired structuration in security software applications (Kotzab & Luttermann 2018) The theory presents specific advances in inbound logistics are oriented towards utilization of resources and raw materials, within the manufacturing or assembly plant. As against this, outbound logistics stresses on the outflow of finished goods or product from the firm to the final consumer. This show that Adaptive Structuration Theory is being used as a driving force of effective logistics management within organizations.

The study used the theory to investigate how complexity, which results in the timely delivery of the goods and materials to the final destination, aims at providing right goods, at given time, in desired quantity and condition, at proper place and price (Mwangi, 2016). In conclusion, the appropriation process of AST might be a good model to analyses the utilization and penetration and better visibility through an inbound logistics management program promotes better inventory management and performance of Cement manufacturing Firms in Machakos County; Kenya.

Systems Theory

The study was based on Systems Theory in determining influence of Distribution Planning on performance of Cement manufacturing Firms in Machakos County; Kenya. Systems Theory is the Trans disciplinary study of the abstract organization of phenomena, independent of their substance, type, or spatial or temporal scale of existence. It investigates both the principles common to all complex entities and the (usually mathematical) models, which can be used to describe them. Systems theory was proposed in the 1940's by the biologist Ludwig von Bertalanffy (Callender, 2007) and furthered by Ross Ashby von Bertalanffy both reacting against reductionism and attempting to revive the unity of science. He emphasized that real

systems are open to, and interact with, their environments and that they can acquire qualitatively new properties through emergence, resulting in continual evolution.

A system can be said to consist of four things the first is objects the parts, elements, or variables within the system. These may be physical or abstract or both, depending on the nature of the system. Second, a system consists of attributes the qualities or properties of the system and its objects. Third, a system had internal relationships among its objects. Fourth, systems exist in an environment. A system, then, is a set of things that affect one another within an environment and form a larger pattern that is different from any of the parts (Rapario, 2019). The fundamental systems-interactive paradigm of organizational analysis features the continual stages of input, throughput (processing), and output, which demonstrate the concept of openness/closeness. A closed system does not interact with its environment. It does not take in information and therefore is likely to atrophy, that is to vanish.

An open system receives information, which it uses to interact dynamically with its environment (Kotzab & Luttermann 2018) Openness increases its likelihood to survive and prosper. Several system characteristics are: wholeness and interdependence (the whole is more than the sum of all parts, correlations, perceiving causes, chain of influence, hierarchy, super systems and subsystems, self-regulation and control, goal-oriented, interchange with the environment, inputs/outputs, the need for balance/homeostasis, change and adaptability morphogenesis and equifinal: there are various ways to achieve goals. Different types of networks are a line, commune, hierarchy and dictator networks. Communication in this perspective is seen as an integrated process not as an isolated event.

In supply chain, management context system theory brings together various components of a complex supply chain (that is the human, capital, information, materials and financial resources. to form a subsystem, which is then part of a larger system of supply chains or network (Kotzab & Luttermann 2018) The theory argues that for a holistic perspective ST must be employed to understand the internal and external factors that shape an organization's performance of cement manufacturing firms.

Conceptual Framework

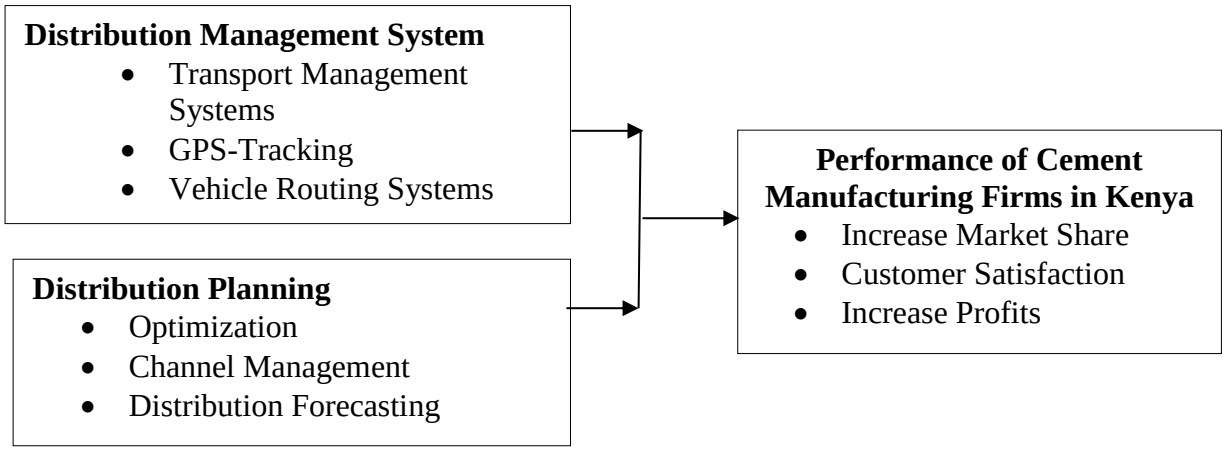

Figure 1: Conceptual Frameworks

Distribution Management System

According to Njoroge (2016),defines transportation management system (TMS) as a logistics platform that uses technology to help organisation plan, execute, and optimize the physical movement of goods, both incoming and outgoing, and making sure the shipment is compliant and proper documentation is available. Transport Management System provides visibility into day-to-day transportation operations, trade compliance information and documentation, and ensuring the timely delivery of freight and goods. Transportation management systems streamline the shipping process and make it easier for businesses to manage and optimize their transportation operations (Kotzab & Luttermann, 2018).

GPS fleet tracking uses telematics technology to collect data from fleet vehicles on transit .Using a GPS tracking device attached to a vehicle, this data is normally collected in near real time so it is more useful for fleet managers and business owners. The data is used to make strategic decisions about operations and track the movement of the trucks (Raparío, 2019). Modern vehicle tracking systems commonly use GPS or technology for locating the vehicle, as well other types of automatic vehicle location technology can also be used. Vehicle information is viewed on electronic maps via the Internet or specialized software.

According to Saviozzi and Silvestro (2019) defines that Vehicle routing & scheduling is a Vehicle routing systems that help transport managers plan and optimize their daily vehicle routes, enabling them to reduce both fuel costs and fleet size. Automatically scheduling gives an efficient set of vehicle routes to serve delivery points .Vehicle routing systems help transport managers and communicate delivery progress to the customers, and other destinations awaiting consolidation or transshipment.

Distribution Planning

Distribution resource planning (DRP) is a method used in business administration for planning orders within a supply chain. A distribution plan is a document providing the warehouse manager and distribution staff with information about the quantity of inventory to be dispatched, the time in which to dispatch it, and the destination. Distribution Planning helps distribution organization optimize the flow of finished goods and components by improving decision-making processes in the areas of distribution requirements/resource planning (DRP),sales and operations planning (Marin & Bonavia,2015).The optimization tools of Distribution Planning offer requirements allocation alternatives.

Channel Management take into account channel feasibility and finite capacities of the sites, while optimizing overall costs including distribution, storage and production costs. Sourcing optimization intelligence determines the requirements allocation and optimizes supply chain channels to meet those requirements. Key variables in distribution planning include available stocks, site storage capacities, overall costs and targeted service rates it enables configurable push or pull strategies for receiving sites (MReza, 2015).

According to Njoroge (2016) defined that distribution Demand Forecasting as the activity of estimating the quantity of a product or service that consumers will purchase. Distribution Demand forecasting involves techniques including both informal methods, such as educated guesses, and quantitative methods, such as the use of historical sales data or current data from test markets. Demand forecasting enable production managers to determine the operating capacity. Forecasting process estimating the relevant events of future, based on the analysis of their past and present customer consumption the past and present analysis of events provides the base helpful for collecting information about their future deliveries to final

customers with order shortages or delays hence increasing organization efficiency (Mutuerandu& Iravo, 2014).

Performance of Cement manufacturing Firms in Machakos County; Kenya

According to Verhoef and Inman,(2015), performance focus on the flow of goods within the warehouse, transmission of information, identification of goods, facilitation of, planning and completing customer orders, managing flow of materials, integrating records and information. The correct information is captured and relayed, increased productivity, improved customer satisfaction, and cost reduction in m Cement Manufacturing Firms in Kenya.

Effective distribution management in Cement manufacturing Firms in Machakos Countyplays a vital part of the economy, as it can be the source of various economic contributions through the generation of income via proper and effective logistics management (Awino, 2019). With increased income, there will be new job opportunities, introducing innovations, stimulating competition, and engine for employment. The role and importance of Cement Manufacturing Firms companies in an economy has been highly appreciated and acknowledged. Moreover, in the present economy, manufacturing companies are facing tremendous challenges and threats to survive in a competitive environment. Therefore, Cement Manufacturing Firms are continuously forced to improve their warehousing operations. Many companies have also customized their value proposition to increase their customer service levels, which has led to changes in the role of logistics

According to Joto, (2018) states that on Lead Time finding ways to expedite shipments from suppliers, order closer to the time you need the supplies. Ordering far in advance can incur logistics costs, because you have to store them so that they will be available, and products are more likely to be lost or damaged. In addition, examine whether to shorten the time it takes to transport supplies from where to receive them to where needed. Transportation from the supplier and within your company adds days or weeks to the supply chain and increase costs.

The potential benefits of Supply Chain Management in Cement Manufacturing Firms include product and delivery process quality such as shorter delivery times, reliable delivery promises, Fewer schedule disruptions, cost savings (for example, significant reductions in inventories) and risk reductions (Nourifar& Paydar, 2018). Integration of processes in the supply chain can also enhance the ability to leverage its scalable competences for the enforcement of innovative product design and radical process innovation, and to access complementary partner assets

Empirical Review

Studie by Hossan and Bahramirad, (2018) on RFID technology in logistics processes studies on the implementation of mass customization processes affects logistics performances, mainly due to the variety of products: in order to prevent stock outs the study revealed that scheduling of assembly and delivery tends to increase the level of inventories. Very customized distribution is rapidly growing as a specific field of research in the field; few studies offer a guide to the design or redesign of the distribution channel management to accomplish the target of customization by showing only specific applications without an overall view on the problem. The need for a reference model deals with a business environment that pushes organizations to move from a conventional logistics to a direct-to-customer distribution (Raue & Wieland, 2015) and in particular, where e-commerce could open unexplored markets.

According to empirical research Saviozzi and Silvestro (2019) Implementation of advanced functionalities for Distribution Management Systems: Load forecasting and modeling through Artificial Neural Networks ensembles. Distribution channel management requirement assumes a greater significance if combined with the large investments in infrastructures to coordinate transportations and deliveries on short notice, trying to contain costs. The studies concluded that the result is that most organizations tends to offer built-to-order customized products, using direct deliveries by external logistics providers, with a relevant effect on the final price to customers

Logistics management is often considered as a support process but it can significantly contribute to reach core targets because of its relevant impact on business performances. As mass customization (Rapario, 2019). The findings on the study concluded that organizations to radically change their production processes, logistics should be able to handle small quantities, highly personalized products and variable demand rates, keeping at the same time the desired service level.

Kumar and Tiwari (2020). Quantitative approaches for the integration of production and distribution planning in the supply chain: a systematic literature review.. A tentative taxonomy based on agency theory and stimulus-response analysis, identified that each service territory is served by a facility called delivery unit, which serves as the starting, and ending point for stem line trips to each of the delivery regions in the service territory. The problem is to determine the ideal number of service territories. This is achieved by considering the fixed costs of the delivery units, the stem line travel cost, and the local delivery cost within the delivery regions. A constraint is imposed on the duration of each trip stem line, plus local delivery. The local delivery distance is approximated by the formula and the problem is then cast as a simple optimization problem, which is solved in closed form.

The study established that Effective Sales and Distribution Planning ensure profitable negotiations. The art of arriving at transaction terms that satisfy both parties that the buyer and the seller. As an element of the marketing mix, the sales force is very effective in achieving certain marketing objectives (Nourifar& Paydar, 2018). Its management requires many efficient and effective decisions such as sales force objectives, strategy, structure, recruitment and selection, training and motivation, it is appropriate size and compensation (Ekici, 2015) .The high costs of personal selling and direct marketing force companies to use intermediaries performing a variety of functions and saving the costs. Effective Distribution Planning calls for selecting suitable and efficient intermediaries, assigning them their roles and responsibilities, training and motivating them and finalizing other relevant terms of trade with them.

METHODOLOGY

This study used descriptive research design descriptive research design is used to describe characteristics of a population or phenomenon being studied. The target population comprised of 126 logistic and distribution officers working in seven cement-manufacturing firms in Machakos County. The unit of observation of the research w consisted of logistic and distribution officers who are signed and responsible for the distribution management activities. The unit of analysis comprised of cement manufacturing firms in Machakos County namely: Bambara Cement Limited, Rhino Cement Foundation, East African Portland Cement Company, Mombasa Cement Company, Savanna Cement, Athi River mining Ltd and National cement company Ltd. in Kenya.

The study employed a census approach to collect data from the all the 126 respondents mainly involved in the management of distribution hence no sampling techniques was used.

The study collected primary data for analysis; Primary data was obtained by the use of structured questionnaires. Prior to the survey administration, the researcher distributed (12) questionnaires for pre-testing which were given to employees working in Cement manufacturing Firms in Machakos County this is 10% of the target population.

The collected research data was checked for any errors and omissions, coded, defined and then entered into Statistical Package for Social Science (SPSS Version 23), (Kothari 2017). Descriptive statistics including frequency, percentages, means and standard deviation was used to analyse the findings. The study used multiple linear regression analysis to test the statistical significance of the various independent variables distribution management system, distribution planning, distribution outsourcing distribution channel mapping and performance of cement manufacturing Firms in Machakos County; Kenya.

RESEARCH FINDINGS

Out of the 126 distributed questionnaires, 113 were fully filled and returned. This translated to a response rate of 89.7%. This response was good enough and representative of the population and conforms with Basias & Pollalis,(2018) for generalization purposes a response rate of 50% is adequate, while that of 60% is good but a response rate of 70% as excellent.

Descriptive Analysis

Distribution Management System

The study sought to establish the role of distribution management system on the performance of Cement manufacturing Firms in Machakos County. Table 1 the respondents were asked to indicate the extent they agree with each of the identified statements using a scale of 1 to 5 where; 1= SD - Strongly Disagree 2=D - Disagree, 3=N - Neutral, 4=A - Agree and 5= SA - Strongly Agree. the respondents to moderate extent agreed that the use of Time Management System Planning Module offering the user various suggested routing solutions the cement firms which was supported by a mean score of 4.13 and standard deviation of 0.90. The established that the intermediaries reduce the number of transactions involved in making products available from producers to consumers in the market which had a mean score of 4.28 and standard deviation of 0.99 . The study findings elaborated that Supply chain visibility enabled logistics and distribution department in cement firms the ability to track and monitor the lifecycle of orders and shipments in real time, which was supported by a mean score of 3.88 and standard deviation of 0.90. the study findings further revealed that distribution management systems Improved inventory management and forecasting, to better visibility, vehicle routing system and accountability in the supply chain network for the cement firms which was supported by a mean score of 4.11 and standard deviation of 0.75 .

To moderate extent the respondent indicated that the distribution management system approach reduced distribution and warehouse costs through better fleet management, labor and space use and coordination between the transportation supported by a mean score of 4.09 and standard deviation of 0.90. From the study findings, it was observed that With GPS, drivers can plan their route to the destination even before hitting the road and get step-by-step directions for their entire route which was supported by mean score of 4.35 and standard deviation of 0.79. This implies that DMS controls and monitors the distribution network. It stores all the data and information related to the clients, stock, and sales. This data is easier to access, analyze, and report. The findings in this study concurred with those of Hossan & Bahramirad (2018) that CRM features are embedded in DMS so customer satisfaction is

ensured. Less workforce, less operational cost, less processing time means an increase in productivity, and better sales for the company.

Table 1: Distribution Management System

Statement	Min.	Max.	Mean	SD
The use of Time Management System Planning Module offering the user various suggested routing solutions.	2.00	4.00	4.13	0.90
Distribution channels increase distributional efficiency	2.00	4.00	4.23	0.91
These intermediaries reduce the number of transactions involved in making products available from producers to consumers	1.00	5.00	4.28	0.99
Supply chain visibility from the ability to track and monitor the lifecycle of orders and shipments in real time;	1.00	5.00	3.88	0.90
Improved inventory management and forecasting, ,better visibility, vehicle routing system and accountability in the supply chain network;	2.00	5.00	4.11	0.75
Reduced administrative costs and invoicing errors from automating freight payment and auditing processes	2.00	4.00	3.87	0.88
Reduced distribution and warehouse costs through better fleet management, labor and space use and coordination between the transportation	2.00	5.00	4.09	0.90
Tracking of assets or cargoes from one point to another. The assets do not stop on route or do a U-Turn in order to ensure the security of the assets.	1.00	4.00	3.80	0.91
With GPS, drivers can plan their route to the destination even before hitting the road and get step by step directions for their entire route	1.00	5.00	4.35	0.79

Distribution Planning

The study sought to establish the effectiveness of Distribution Planning practices in influencing performance of Cement manufacturing Firms. Table 2 indicated that Distribution Planning enabled Breaking down of the weekly or monthly schedule lines sent in by the customer into daily requirements for economic order delivery, which was supported by a mean score of 3.96 and standard deviation of 0.93. The study revealed that The Just-In-Time delivery schedule allow cement firms forecast delivery schedule, which are more suitable for short-term requirements leading to optimization with a mean score of 3.71 and standard deviation of 0.81. The study established that distribution planning in cement firms provided Timeliness of shipments in reaching destination within the scheduled or expected delivery time due to distribution forecasting which had a mean score of 4.12 and standard deviation of 0.73. The study revealed that Integrated systems in cement manufacturing firms co-ordinate the functions, manufacturing, distribution, purchasing to the finally delivery at health facility supported by a mean score of 4.06 and standard deviation of 0.99.

To moderate extent the respondents agreed that DRP enables the cement manufacturers to set certain inventory control parameters like a safety stock and calculate the time-phased inventory requirements with a mean score of 3.99 and standard deviation of 0.88. The respondents strongly agreed that Distribution managers in cement firms quality of the

communication and sensitization conducted with the beneficiaries prior to the distribution phase supported by a mean of 4.01 and standard deviation of 0.87. The study established that to a moderate extent respodents agreed that the distribution plan should include quantities of each good or commodity to be sent to each distribution point for a specified period supported by mean of 4.19 and standard deviation of 0.77, from the study finding this implies Adopting a distribution management strategy is important for a company's financial success and corporate longevity. The study findings were in agreement with those of Kumar & Tiwari (2020) that Distribution management manages the supply chain for a firm, from vendors and suppliers to manufacturer to point of sale, including packaging, inventory, warehousing, and logistics.

Table 2: Distribution Planning

Statement	Min.	Max.	Mean	SD
Breaking down the weekly or monthly schedule lines sent in by the customer into daily requirements	2.00	3.00	3.96	0.93
The Just-In-Time delivery schedule allow cement firms forecast delivery schedule except that it is more suitable for short-term requirements leading to optimization.	2.00	4.00	3.71	0.81
Provide customers with more accurate estimated delivering schedules through channel management.	2.00	5.00	4.17	0.79
Timeliness of shipments in reaching destination within the scheduled or expected delivery time due to distribution forecasting.	2.00	3.00	4.12	0.73
Integrates corporate functions and keeps everybody in the picture particularly marketing, distribution and manufacturing	1.00	3.00	4.08	0.97
Integrated systems co-ordinate the functions, manufacturing, distribution, purchasing to the finally delivery at health facility	1.00	3.00	4.06	0.99
DRP enables the cement manufacturers to set certain inventory control parameters (like a safety stock) and calculate the time-phased inventory requirements	2.00	5.00	3.99	0.88
Distribution managers quality of the communication and sensitization conducted with the beneficiaries prior to the distribution phase	2.00	4.00	4.01	0.87
The distribution plan includes quantities of each good or commodity to be sent to each distribution point for a specified period.	1.00	4.00	4.19	0.77

Qualitative Analysis

Distribution Management System

The study sough to determine the Advanced Distribution Management System (DMS) cement manufacturing firms is using controls and monitors the entire distribution network, including ordering, delivery, inventory management, the responded to moderate extent agreed that the system enable logistic department to control operations from dispatch to delivering to the final customer .from the study data collected this implies that the responded indicated that The software allows cement firms to verify all transactions through counter checks and check for any inconsistencies that could lead to bigger problems. The study findings agreed

with those of that Saviozzi & Silvestro(2019) with simple inventory monitoring and management, companies can save a lot of time. This allows companies to spend more time on tasks such as improving customer service or improving advertising campaigns

Distribution Planning

The respondents were requested to state if distribution planning possible build inventories of cement firms short raw materials and secure production and transport capacity from the supply chain partners .the respondents strongly agreed that through distribution planning the supplier are notified early enough of the required delivery schooled . The study requested to determine if the

Distribution Planning Consider short-term and long-term impacts when making decisions (your ability to make sales, impacts on production schedule, staffing ,from the study finding it was established that distribution planning was aligned with customer needs so as to avoid market stock out and oversupplies in the market which might affect the product pricing (deMattos & Gonçalves, 2019).

Inferential Analysis

Correlation analysis

The study undertook correlation matrix analysis to examine the influence of distribution management strategies on the performance of Cement manufacturing Firms in Machakos County; Kenya. Table 3 presents the correlation matrix analysis on effects of distribution management strategies; the correlation factor ranged from $-1 \leq 0 \geq 1$. The acceptance confidence level was 95% or significance level of 0.05. The study conducted a Pearson Moment Correlation analysis, which is represented by; distribution management system, distribution planning, distribution outsourcing distribution channel mapping and performance of cement manufacturing firms in Machakos County

Table 3 indicate that distribution management system and distribution planning has the positive influence on performance of cement manufacturing firms as attributed by the Pearson correlation coefficient of 0.765 and a p-value of 0.00 and correlation coefficient of 0.774 and a p-value of 0.00 respectively. This correlation matrix implies that the independent variables; distribution management system, distribution planning on the on performance of cement manufacturing firms in Kenya are positively correlate in any manner.

Table 3: Correlation analysis

		Performance of Cement manufacturing Firms	Distribution Managements system	Distribution Planning
Performance of Cement manufacturing Firms	Pearson Correlation	1		
	Sig. (2-tailed)			
	N	113		
Distribution Management System	Pearson Correlation	.765**		
	Sig. (2-tailed)	.000		
	N	113	113	
Distribution Planning	Pearson Correlation	.774**	.966**	

	Sig. (2-tailed)	.000	.000	
	N	113	113	113

Model Summary

Table 4 show the correlation coefficient (R) 0.717 which is a positive, shows a strong relationship between distribution management strategies and the performance of Cement manufacturing Firms .The R-Square value of 0.717 shows that distribution management strategies accounts for 71.7 % of the variation or change in the performance of Cement manufacturing Firms . This result supports the general view that distribution management strategies are not the only factors that explain performance of Cement manufacturing Firms in Machakos County; Kenya

Table 4: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.847[a]	.717	.707	.349

a. Predictors: (Constant), Distribution Planning, Distribution Management System

b. Dependent Variable: Performance of Cement manufacturing Firms

ANOVA

F Test was done through One Way Anova to test the effect of all the independent variables on the dependent variable in a simultaneous manner. From a statistical perspective, the F-Test is done to show whether there is a joint effect of independent variable on the dependent variable. The results of the test are presented in the table 5 below. The critical value for the analysis is 2.342 and was computed through the use of k-1 numerator (4) and N-k denominator (112) degrees of freedom. The F value obtained (68.485) is greater than the F Critical Value (2.342). Additionally, the significance value obtained is 0.000, which is less than the set value of 0.05.; Owing to the fact that the F value is greater than the critical value and the significance level is lower than the set level, it can be concluded that distribution management system, distribution planning, distribution outsourcing distribution channel mapping have a significant effect on performance of cement manufacturing firms in machakos county

Table 5: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	16.656	2	8.328	68.485	.000[b]
	Residual	13.42	110	.122		
	Total	30.076	112			

a. Dependent Variable: Performance of Cement manufacturing Firms
b. Predictors: (Constant), Distribution Planning, Distribution Management System

Coefficients

The table 6 below presents regression coefficients of the effect of distribution management strategies (distribution management system, distribution planning) on a performance of cement manufacturing firms. The Beta coefficients indicate the extent to which firm

performance (dependent variable) changes due to a unit change distribution management strategies (independent variables). The results show that, holding other variables constant, a unit increase in the adoption of Distribution Management System would lead to 0.531 increases in performance of cement manufacturing firms this variable was significant since calculated p-value (0.002) is less than 0.05 at 5% level of significance.

The results further show that holding other variables constant, a unit increase in the adoption of Distribution Planning would lead to 0.148 increases in performance of cement manufacturing firms . This variable was significant since calculated p-value (0.001) was lower than 0.05 at 5% level of significance.

Table 6: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.824	.203		8.999	.000
	Distribution Management System	.531	.171	.810	3.113	.002
	Distribution Planning	.148	.155	.201	.957	.001

Optimal model

$$Y= 1.824 + 0.531X_1 + 0.148X_2 +\varepsilon$$

Conclusion

The study concludes Automation, through a distributor management system (DMS), is critical to optimizing Cement manufacturing Firms distribution. A good Distributor Management System streamlines all distribution workflows and activities, improves supply chain efficiency, eliminates stockouts and overstocking and allows companies to access real time data from distributors. With the right software platform fueling your sales and distribution activities, Cement manufacturing Firms can achieve high performance in even the most fast-moving and fragmented marketplace.MS is a distributor management system that provides complete visibility of your secondary Sales or stock lying at your distributor's end. It readily integrates with your distributors

The study concluded that distribution planning is an important part of the business cycle for distributors and wholesalers. The profit margins of cement manufacturing firms in Athi river depend on how quickly they can turn over their goods. The more they sell, the more they earn, which implies that a better future for the business. Having a successful distribution management system is also important for cement firms to remain competitive and to keep customers satisfied. Fundamental functions of distribution. Manufacturers normally produce large quantities of a limited number of products. The distribution function handles this requirement it keeps the cement manufacturer from having to break bulk and repackage its product to fit individual requirements.

Recommendations

The study recommended that Distribution Management System that meets industry requirements. For example, distributors in the food industry need the code date for each product to determine the expiration date. In the apparel industry, DMS focuses on size, style, and color, making it easier to handle everything with an automated system. Easily store,

access and analyze all information and data related to customers, business partners, stocks and suppliers. By using information development reports and charts, you can perform better business analysis. Customer satisfaction is ensured through integrated customer relationship management capabilities in the Advanced Distribution Management System. Easy to manage, reducing the manpower required, saving time and money, and greatly reducing operating costs. Reduce processing time and effectively reduce management costs. As productivity increases, your return on investment (ROI) increases as your sales increase and service quality increases.

The study recommends that the goal of distribution planning is to achieve ultimate efficiency in delivering raw materials and parts, both partially and completely finished products to the right place and time in the proper condition. Physical distribution planning should align with the overall channel strategy. Modern distribution management encompasses more than just moving products from point A to point B. It also involves gathering and sharing relevant information that can be used to identify key opportunities for growth and competitiveness in the market. Most progressive cement firms are using their distribution forces to obtain market intelligence, which is vital in assessing their competitive position

Areas for Further Study

This study was not exhaustive meaning as it was only limited to distribution management system and distribution planning and performance of cement manufacturing firms in machakos county. It is also limited to cement manufacturing firms in Machakos County only. It is therefore recommended that another study be replicated in other manufacturing firms in the entire country. This is because distribution management is a rich research field and is still evolving. The analysis was limited to the information disclosed by the respondents. Regression analysis indicated an R squared of 71.7% an indication that variables considered do not explain 100% variation in the dependent variables meaning that other factors exit not covered by the current study that significantly determine the influence of distribution management strategies on the performance of Cement manufacturing Firms in Machakos County; Kenya; and therefore future studies should endeavor to uncover these other factors.

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