# INFLUENCE OF PROCUREMENT MANAGEMENT PRACTICES ON PERFORMANCE OF CONSTRUCTION FIRMS IN NAIROBI COUNTY, KENYA

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## ABSTRACT

Misconducting the procurement process leads to wastage of resources and dismal developmental outcomes for the citizenry at large. In Kenya, construction firms encounter immense competition owing to globalisation, evolving market conditions and trends, changing business models, calls to reassess the costing models, price volatility and so forth. Therefore, this study aims to examine the role played by procurement management practices such as procurement planning, supplier relationships, outsourcing and inventory management in the performance of construction firms within the county of Nairobi. Anchored on Agency Theory, Stakeholder Theory, Legitimacy Theory, and Resource - based Theory, the study adopted a descriptive research design targeting senior managers, mid - level managers, and lower - level managers working at construction firms based in Nairobi County. The 4,142 enlisted operational construction companies in Nairobi County constituted the target population and through simple random sampling, the sample size established. Primary data was collected via a series of open and closed ended questions presented in a structured questionnaire. Drop – off/pick-up survey method was employed with the questionnaires being distributed by enumerators, the researcher too approached some respondents especially those in the same division. The data was entered into the latest version of SPSS for analysis. Biographical data such as gender, age bracket, and employee position and length of service in the organization were analysed using descriptive statistics while the relationship between procurement management practices and performance was evaluated through the application of Linear Regression. The study's discovery was that the performance of construction firms in Nairobi County was significantly and positively affected by procurement management practices. The study concluded that procurement planning had the greatest impact on the performance of construction firms in Kenya, with outsourcing and inventory management taking second and third place respectively. According to the study, the supplier relationship has been found to have the least influence on construction firms ' performance in Kenya. The study recommended that construction firms ' management enforce higher quality assurance standards throughout the entire procurement process, based on the research findings. Finally, that the study also recommended firms to reconsider contracting suppliers as a means of focusing on their core business.

***Key Words:*** *procurement planning, supplier relationships, outsourcing, inventory management, performance of construction firms*

## INTRODUCTION

The business environment is continuously evolving and becoming more dynamic. Organizations are now being forced to find inventive ways of remaining competitive and relevant within their enterprise. Such a feat is only attainable when an organization's output rivals that of its competitors in terms of accessibility, price, and quality. This is only attainable when the firm's procurement strategy rivals that of its competitors. Procurement is basically the acquisition through contractual means any kind of public or private works, services or supplies (Procurement and Disposal Act, 2005). It begins when organization identifies a need that requires to be met, establishes the needs procurement requirements, does the risk assessment, seeks out and evaluates the alternative solutions at its disposal, awards the contract to the successful bidder, gets the goods or services delivered, make payment and where necessary the engages contract management with the original contract being modified. Procurement management extends to the end of its useful life of the procured item at which point the property is disposed of. From this, it's evident that procurement activities have an impact on the economic performance of any establishment. Worthington (2017) noted that effective national procurement policies can help improve the execution of infrastructure projects, yielding export and growth benefits.

Procurement management practices are critical but pricey activities for any organization. This is due to the fact that organizations usually allocate a sizeable chunk of their income and operational budget (even up to 70%) towards obtaining goods and services required for the firm to run its operations. In relation to construction, the owner of any project must go through the procurement process to acquire inputs to be used on the project not forgetting the hiring of contractors and consultants to carry out the actual works and services. As with most organizations, management uses the pre-established objectives and activities to make a comparison between goals that were meant to be achieved versus the procurement results/outcome. In so doing, the progress (or lack thereof) can be established. For a strategic procurement exercise to be deemed to have taken place, the entire exercise has to begin with need identification. This is because need identification is critical in ensuring that all wastage opportunities within the procurement process are eradicated (Harrison & Lock, 2017).

Any organization be it private, public or non-governmental is defined by policies procedures and structures unique to it. These elements when working together, influences the organisations procurement process. The policies and procedures the organisations adhere to are derived from the organizations paradigm which can at times be in contradiction with its procurement goals and objectives. For organization structures which are tall and bureaucratic in nature, decision making tends to take a longer time. Because the number of basic stages to be followed in the procurement process are influenced by decision making, the entire process ends up being undermined to some extent because of timelines and schedules. These challenges relating to lengthy decision making processes are more pronounced in firms whose procurement departments that don't have enough information about its inputs, intended outputs, resource utilisation, the best practices as relates to procurement management as well as overall results and are therefore unable to determine their efficiency and effectiveness (Nair, Narkhede & Chaturvedi, 2015).

The fundamental purpose of any organization is to consistently outperform the competition and deliver sustained, superior returns to the shareholders while satisfying other stakeholders. The measurement of how successful enterprises are at achieving this has become a focal point in present-day private-sector governance. An ideal procurement system should acknowledge complexity involved, identify the required skill set to enable the division of labour, develop an ideal strategy, manage timelines effectively, ensure strict adherence to sound bid evaluation methods and eventually come up with a smart contract that is above board. For a procurement exercise to be effective organized teamwork with special emphasis on the authorities, roles and responsibilities of the team players not to mention the timelines and resources at hand (Ackah & Agboyi, 2014).

A number of developing countries have introduced performance management a tool for measuring organizational and individual efficiency in order to ensure that public sector organizations and departments meet their obligations to the public (Ohemeng, 2009). Performance measurement is an effectual way of making an organization more accountable in respect of the resources at its disposal and more so in performance measurement within the public sector where accountability is seen as being of critical concern as it can potentially affect a country's development agenda. Performance measurement acts as an alert, control system with the checks and balances that can be used to keep track of economy, efficiency, effectiveness and efficacy within the organisation. Procurement officials is Malaysia were faulted for malpractice including the willful contravention of the country's procedures and policies relating to how procurement should be handled. A vibrant democratic environment dictates that governments take into consideration the views of policy makers, bureaucrats, technocrats and other special interest groups in their bid to ensure that their program attract the least resistance possible (Weishaar, 2016). Striking a balance means that the firm aims to put minimal effort to meet its obligation (Badaso, 2014).

Promoting an efficient procurement process across the EU borders was one of the objectives of the EU legislation. The aim was to encourage accessibility of the EU market in order to make it more attractive for EU - based organisations, as well as to minimize transaction costs and thus provide the best value for money. Subsequently, a balance between costs and benefits was discovered which is assisting in the fight against corruption (European Commission, 2010). Procurement is having been identified as being a key component in public service delivery and in this respect accounts for a high proportion of total national expenditure in Africa. The national governments purchase range between 9% and 13% (Owuoth & Mwangangi, 2015). This implies that procurement plays a pivotal role in any country's economy (Odhiambo, 2018). Procurement itself has crucial political and economic implications and ensuring that the process is as efficient and economical as possible is crucial to ensuring that the development agenda of the government remains on track. To ensure that things run smoothly, it is a prerequisite that all the actors involved, either directly or otherwise, such as the government, procurement entities and the business community / suppliers, understand the entire procurement process well and do not forget other key stakeholders, such as academic institutions, professional associations and the general public.

In developing countries, many construction companies have been unsuccessful in their business. Moreover, the construction environment has become riskier making it necessary for construction firms to periodically measure their performance, evaluate the factors that affect performance, and find ways of improving performance. The companies lack effective methods of measuring their performance and identify factors that affect performance (Truong-Van, Kim, Cao & Park, 2008). As a result, it becomes very difficult to increase their ranking in the dynamic market place. Moreover, the presence of large number of foreign construction firms which owing to globalisation have endangered domestic contractors by increasing competition.

The Kenyan economy currently is experiencing growth within its industries in both the public and the private sectors. This is manifested by the numerous developments in various sectors such as infrastructure, healthcare and education. This is attributable to the divergence into sectors of the economy that were once dormant, increase of foreign direct investment as well as an increase in internal borrowing by the government (Republic of Kenya., 2014). Public building works completed in major towns experienced a significant increase from 86.9% in 2012 to 103.7% in 2013 (Republic of Kenya., 2014). Owing to the fact that the procurement of organizations contributes a considerably to a country’s economic growth in terms of jobs creation, capital formation not to mention the provision of essential goods, services and infrastructure, non-performance with regards cost overflows, missed time lines and schedules and mediocre quality of completed outputs have the overall effect of stunting economic growth (Kiiru, 2015).

According to Magara, Oloko and Nyangau (2014), since the 1980s, international procurement has experienced rapid expansion in Kenya which has seen many public firms look to the global market for their goods and services that are unavailable locally or deemed to be cheaper when sourced from the global markets so as to increase their margins by sourcing from low cost countries. They further note that special regulations by governments involved in procurement influence the international procurement strategies either directly or indirectly or make it complicated altogether with the main regulations being the quotas and the tariffs. The continuous transformation of the Kenyan procurement systems was expected to address the inefficiencies within the public sector, such as those relating to the provision of affordable accommodation within housing sector whose delivery has been marred with inefficiencies. The current public procurement shows evidence of poor organization with regards to procurement management practices (Langat, 2015). Of the contracted public works by the government, only a paltry 34.9% of the were completed for the financial year 2007 to 2011 with the remaining 65.1% stalling, experiencing delays, and/or experiencing cost overruns. Organizational performance measurement is not easy for business organizations with multiple conflicting goals such as profitability, employee satisfaction, productivity, growth, social responsibility and the ability to adapt to the ever - changing environment among other goals. (Waiganjo, Mukuru & Kahiri, 2012).

Construction firms are firms incorporated in Kenya and registered with the National Construction Authority (NCA) as contractors for Roads and Civil works. The companies are required to show proof of financial, equipment and personnel capacity as a basis for categorization; which ranges from NCA 1 to NCA 8 in a reducing order of values of work (National Construction Authority, 2013). In Kenya, there is no blueprint for contractor development resulting in most of the local contractors remaining ineffective and inefficient or both. They also face a multitude of problems and constraints relating to their own internal management, organizational and technical know-how, accessibility to resources they need for their operations and even laws and regulations they are required to comply with as they go about their businesses (Ngacho, 2015).

Procurement systems are play a crucial role in determining the efficiency of construction firms' management as they are instrumental in ensuring better allocation of resources geared towards fulfilling the developmental agenda as well as improving governance within the construction industry (Kiiru, 2015). Compromised procurement systems result in wastage of national financial resources as well as increasing transaction costs which ends up undermining development efforts. For a procurement management system to be effective, there is need to acknowledge that the operating environment is quite dynamic, identify people with the right skills set and hence capable of performing the tasks at hand, organize the workflow, formulate a solid working strategy, manage timelines effectively, adhere to thorough bid evaluation methods and eventually come up with an ideal contract. Before any works can begin, coordinated team effort is essential, and of note, resources, authorities, roles and responsibilities as well as schedules need to be clearly outlined to be able to meet the threshold of effective procurement (Musa & Aderonmu, 2016).

## STATEMENT OF THE PROBLEM

Violation of the laws, regulations and policies governing the procurement process and systems has drastically led to wastage of efforts as well as poor development results which has led to poverty stemming from deprivation of socio-economic rights of the citizenry. Kenyan construction firms are not exceptional and they have come face to face with greater international competition caused by globalisation, evolving markets dynamics, trends and business models, cost cutting pressure, price uncertainty among many other challenges (Ngacho, 2015). Consequently, this has made their procurement practitioners to attempt to strike a balance ensure that the procurement objectives accomplished. Since policies are partly determined by forces within the firms control such as the interactions between various elements of the procurement systems, taking cognisance of the various actors and sub-agencies within a department, executive agency, actors and organizations external to sub-agencies; types of goods, services and capital assets required for an firms operations; professionalism levels/quality of procurement workforce, staffing levels to mention but a few becomes paramount to the organisation (Tariku, 2016). Construction firms in Nairobi County have faced countless challenges with their procurement management practices as highlighted by the various quality assurance concerns given the alarming rate at which structures collapse and in other cases structures demolished having flouted the county's building guidelines and regulations (Kiiru, 2015). Over 30 buildings have collapsed in the past five years alone resulting in major fatalities with scores of innocent unsuspecting people getting injured and property worth millions being lost (NCA, 2018). Construction firms have been performing dismally over the years. The Building Audit Report (2015), indicates that Kenya had very few cases of buildings collapsing in decades leading to the 21st century. In the advent of construction boom, challenges were rife, key being those relating to structural elements within the industry. A trend that has been on the rise with Nairobi's Huruma, Umoja,, Kayole, Dandora, Kariobangi, Tena, Donholm estates, having buildings marked for demolition (NCA, 2018). Inefficiencies in Construction firms in Nairobi County over years has been attributed to the persistent lack of complaisance checks and balances with regards to the procurement procedures required to ensure that competition, fairness, cost effectiveness, and transparency are adhered to throughout the procurement process which have been found to impeded by the wayward conduct by public officials (Mwende, 2017). Lack of clear laws, impunity, political patronage, failure to enforce existing sanctions, among the other reasons that have limited compliance to the best procurement management practices (KACC, 2016). Several studies attempted to determine whether there is a link between an organization's performance and its procurement management practices. The impact of procurement management practices on the performance of state - owned commercial enterprises in Nairobi County has been explored by (Mokogi, Mairura and Ombui, 2015; Ngunyi, 2014) on procurement management and parastatal performance in Kenya. Machoka (2016) undertook a study on procurement management practices and their influence on performance of Constituency Development Funds in Kenya. Makabira and Waiganjo (2014) looked into the role of procurement management practices on performance of Kenya National Police Service. However, these studies do not provide a comprehensive view of the problems relating to procurement management practices from the perspective of the construction industry seeing as it's the cornerstone of improvement of the country's infrastructure. It is on this basis that this study sought to examine the influence of procurement management practices on performance of construction firms in the county of Nairobi, Kenya.

## GENERAL OBJECTIVE

This study examined how the performance of construction companies in Nairobi County, Kenya is influenced by procurement management practices.

## SPECIFIC OBJECTIVES

1. To determine the influence procurement planning has on performance of construction firms in Nairobi County.
2. To establish the extent to which inventory management influences the performance of construction firms in Nairobi County.
3. To investigate the role supplier relationship management plays in influencing the performance of construction firms in Nairobi County.
4. To assess the influence of outsourcing on performance of construction firms in Nairobi County.

## THEORETICAL REVIEW

A theoretical framework refers to a widespread set of assumptions or interrelated ideas based on theories or a reasoned set of prepositions derived from and supported by data or evidence and phenomena accounted for or explained (Kombo & Tromp, 2010). The study was pegged on agency theory, institutional theory and resource dependence theory.

## Agency Theory

Agency theory was proposed by Stephen Ross and Barry Mitnick in the 1960s (Fayezi, O'Loughlin & Zutshi, 2012). The agency theory offers a natural fit with on supply chain management as the theory is centred on occasions where one party being the principal, cedes some powers of decision making to a second party being the agent, to act on its behalf. An agency relationship is a contract - based relationship, and its assumption is that the agent will act in the principal's best interest. This theory is very relevant in the outsourcing practice of procurement management (Tumbat & Grayson, 2016).

According to Cane (2004), when executing the tasks within the principal agent relationship, the agent must choose courses of action that stand to be beneficial for both the principal and the agent. Since these outcomes can be either negative or positive for each of the actors, the chosen action of the agent affects the welfare of both; therefore, the principal agent relationship is often forged because the agent possesses a greater abundance of the needed skills, abilities and time to perform the desired activities.

Arrowsmith (2010) however points out that there are several problems for the principal in governing the relationship with the agent, the first of which involves choosing an appropriate agent. Arrowsmith (2010) further states that problems occur in principal agent relationships when agents act in a manner that only benefit them and not the principals. For example, authority to manage corporate entities may be delegated to the top management by the shareholders. A chief executive officer may use his/her position as an agent to acquire another firm in order to increase his/her own compensation through bonuses regardless of the acquisitions potential to add value to the company through creating value which will in turn enrich the stockholders, commonly practiced in international procurement processes through the practice of horizontal and vertical integration. Accordingly, principals must closely monitor their agents' decisions and create remuneration structures that reinforce desired activities and outcomes.

Hornibrook (2007) similarly indicates that delegation of authority from one firm to another is evident in supply chains. This results in conflicts of interest within traditional supply chains as the parties involved are forced to make a choice between courses of action that benefit their firm in rather than one that benefits the chain as a whole. Managers when faced with such situations prefer the former option because their loyalty is to their home firm above all else. In the best value supply chains, these tensions are recognized and mitigated against.

A poor principal agent relationship ends up with top management having low levels of commitment which then translates to a strained relationship between the firms' suppliers and institutions. Implementation of procurement management practices that work against the prescribed procurement policies results in an inflated procurement budget and at times the loss or misuse of procurement funds owing to instances where there is conflict of interest amongst the agents and the firms they represent. According to Lavassani and Movahedi (2010), the best value supply chains implement reward structures and encourage cultural competitiveness to ensure all participants' interests are aligned. The ripple effect of this action results in the parties involved avoiding the temptation to take advantage of other supply chain members. Such supply chain members also recognize that due to the fact that the supply chains tend to be chronological in nature, this unique aspect makes them agents in some links and in others principals. For this reason, an agent being opportunistic in the in their capacity can be detrimental and even lead to punishment by other firms within the supply chain (Lavassani & Movahedi, 2010).

The tenets of agency theory offer a natural fit with the challenges of supplier management and specifically, the management of supply chain quality. In the management of supplier quality, buyers in agency relations face numerous problems because by their nature, buyers expect suppliers to provide the best quality and thereby improve the quality of the end products and/or services for the market. However, suppliers may be reluctant to invest significantly in quality, more so if they feel that buyers are getting all the benefits. Such differences between buyers and suppliers will result in either party being more consumed with self-interests (Xingxing, 2012). This theory is therefore relevant to this study and will be beneficial in grounding the performance of construction firms in Nairobi County in relation to the influence on their operations of supplier relationship management.

### Resource Dependence Theory

Resource dependence theory (RDT) by Kitchen and Hult (2007) as developed by Jeffrey Pfeffer and Gerald Salancik in 1981 is centres on how firms rely on other firms for inputs such as goods, raw materials, services and other operational requirements with regard to how firms can benefit from better handling of such relationships. Kitchen and Hult (2007) further indicate that the theory proposes that in the supply chain, member firms should be dependent and collaborate in order to elevate performance gains in the long-run rather than of pursuing short-term benefits at the expense of others. According to the theory, dependency among firms arises due to the need of sustaining growth that requires optimal use of resources that are provided by other organizations. Firms must depend on outside parties for resources to compete favourably and the dependency with other entities must be managed carefully to ensure for sustainable development (Kitchen & Hult, 2007).

According to Cao and Zhang (2010) resource dependency theory (RDT) explains how the operations of an organization are affected by external resources. This theory proclaims that in order for an organization to remain operational, it must have easy access resources such as up-to date technology, finances, a skilled labour force, and raw materials in order to deliver goods and services to its customers/clientele in order to survive. RDT offers an extraneous view as to why situations involving the acquisition or merging of one organisation with another may be on the rise. The assumption is that more resources are available to the new corporate entity when organizations join forces with other similar or complementary organizations (Haleblian, 2009). According to Cao and Zhang (2010), the desire to manage interdependence with producers of inputs or output buyers by integrating them or diversifying operations to decrease organizational dependence explains why a company might want to enter into a merger.

Supply Chain Management (SCM) is vital in achieving operational efficiency. This is because it affects the realization of organization goals and objectives as well as the effective resource utilization. An organization needs resources that are considered to come from the environment of the organizations. The RDT reasons that as with any environment, other organizations also depend on the same resources within the same environment. Competing organizations are deemed to only be competition for financial resources, skilled labour force, movable and immovable assets, and other resources which businesses would require in order to carry on their business according to the traditional resource dependency theory. However, the customer being the main source of the revenue stream remains the desirable resource, and although all resources are play a major role in this case with regards to generation of profits, the key resource remains the customer Carter and Rogers (2008).

In the ideal supply chains firms try to avoid becoming overly dependent on other firms for fear of being taken advantage of (Zhu, 2010). These same firms, however, strive to make other firms dependent on them and thus creating a position of strength within the supply chain. Best value supply chains work in contrast to this notion by recognizing that taking advantage of resource dependencies results to unplanned and severe outcomes. Case in point is how many aerospace manufacturers in the recent past had plotted to make their parts suppliers highly dependent on them, and then went ahead to use the same leverage they had on the suppliers to reduce the suppliers' margins. This situation eventually led to some suppliers bypassing the manufacturers and selling spare parts to end-users directly which resulted in the dramatic drop in the manufacturers' fortunes (Rosetti & Choi, 2009). Value supply chain dependencies from this perspective should be applied to generate joint forbearance and reliance, but not to stimulate exploitation of an organisation within a supply chain. Therefore, this theory is relevant to this study and it will be beneficial in grounding the influence of inventory management and outsourcing on performance of construction firms in Nairobi County.

## Institutional Theory

According to Hofer (2011) the institutional theory was developed by Powell and DiMaggio (1991) and reviewed by Scotts in 1995. The theory stresses on how the subtle and evolving environmental pressures impact on a firm's activities. In the long run, the overall effect of these evolving environmental pressures is that all end up becoming identical as a function of isomorphism over the years (Hofer, 2011) since new entrants are somewhat compelled to adhere to the structures that their predecessors put into place even if it does nothing to enhance their operations.

The old institutionalization theory is hinged on legalism, structuralism, holism, history as well as normative analysis. These characteristics of old institutionalism are briefly described as follows: legalism which is concerned with law and governance; structuralism where it is deemed that structure very important and determines behaviour; holism whereby institutions are to be examined as co-dependent parts instead of investigating the parts as being distinct independent parts of the system; historical where attention to the institutional system is considered over time; and, normative analysis where institutional behaviours are based on the facts, values and norms. Moreover, the separation of value, facts and norms is not acceptable (Peters, 2005).

According to Movahedi (2009), the new institutional theory has been illustrated as an open system perspective in contrast to the rational system. The open system view of supply chain encourages the attention to the role of environment in the behavior of organization, its components, and its members. From the institution theory perspective, supply chain management should pursue two main goals, the first being to monitor the environment for collaborative opportunities, and the second being the identification of the best practices in the industry and comparing the organizational operation with best practices, for continuous improvement.

Ketchen and Giunipero (2004) observed that the institutional theory plays a major role in shaping an organizations strategy associated with supply chain management such as the organizations' choices of technology adoption or even supply chain collaboration. However, since organizations are all monitoring their environment and try to adopt the best practices, organizations becoming homogeneous as an effect of isomorphism over time is easy to anticipate (Ketchen & Hult, 2007).

Ball and Craig (2010) also point out that the theory examines the influence of external factors in the adoption of organizational practices on companies. Industrial guidelines and best practices have been heavily relied upon in traditional supply chains to serve as a model for supply chain management activities. The concern about how companies address external factors has turned institutional theory into a major research direction to explain practices related to the environment. An example of an external environment for companies is government agencies that can influence an organization's actions by formulating policies, fines, regulations and barriers to trade etc (Ball & Craig, 2010).

Use of the Institutional theory to examine the various elements of procurement owing to its the regulatory perspective that requires the observance of laws and regulations with expedience as the basis for compliance. The normative perspective of the theory lays emphasis is on standards (how things should be done) with the value system and social obligation (idealism) being the main basis for compliance. PPDA Authority governs the procurement practice in Kenya through the statutes laid down such as the regulations, the PPDA Act (2007). All practitioners and providers as well as other stakeholders are required to comply with these legal provisions, both in principle and in practice. Theoretically, institutions are a composition of cultural-cognitive and regulative elements which validates its existence when combined with its core activities as well as resources available to them. Scot (2004) further affirms that any institutions foundation is regulatory, normative and cultural- cognitive in nature in which case regulatory refers to rules and laws and other enforcement mechanisms, the normative elements includes norms and values whereas cultural-cognitive are the shared beliefs and understanding (Obanda, 2010). Institutional theory asserts that if organizations observed the international procurement regulations, they would be assured of competitiveness in bids, transparent processes, and professionalism in procurement process (Andrew, 2008). Therefore, this theory is relevant to this study and it will be beneficial in relating the influence of procurement planning on performance of construction firms in Nairobi County.

## RESEARCH METHODOLOGY

### Research Design

Descriptive research design was used because it made it possible for the researcher to draw general conclusions from the findings and relate them to a larger population collection of quantitative data was made possible which can then be analyzed quantitatively using inferential and descriptive statistics.

### Target Population

All registered and practicing construction firms based in Nairobi County, Kenya constituted the study population. According to the National Construction Authority (2015) the number of construction companies under building works class in Nairobi as at the end of 2015 was 4,142 companies. The choice of NCA is believed to be the representation of the entire construction industry since they operate under a formal organization and is a criterion for choosing a contractor for a building project in Kenya

### Sample and Sampling Frame

In this study, stratified and simple random sampling was used. Stratified sampling has been used to group target populations into categories or strata like NCA1, NCA2, NCA3, NCA4, NCA5, NCA6, NCA7 and NCA8. Representative samples were taken from each category using simple random methods. The study used a sample of 139 respondents.

### Data Collection Procedure

Data collection was done through questionnaires which were administered to the respondents. The questionnaires were distributed by enumerators, the researcher too approached some respondents especially those in the same division. Secondary data was collected from documented records.

### Data Collection Instruments

The collection of data involves the gathering of data that is considered relevant to the research study. The data collection tool of choice for this study was a structured questionnaire consisting of open and closed - ended questions as well as inquiry - related Likert scales to collect primary data from respondents. Secondary data on the other hand was collected from published books, internal reports and relevant documents.

### Data Processing, Analysis and Presentation

Meanings derived from numbers, the collection results in numerical and standardized data and analysis performed through the usage of diagrams serves as the basis of quantitative data according to Saunders et al (2007). However, qualitative data is based on meanings expressible through words, collection of results in non- standardized data requiring classification into categories and analysing conducted by coming up with concepts. Statistical Package for Social Sciences (SPSS) was used to analyse the data after all the questionnaires were received, referenced and items in the questionnaire was coded to facilitate data entry. After data cleaning (checking for errors in entry), all descriptive statistics such as frequencies, percentages, mean score and standard deviation was estimated for all the quantitative variables. Inferential data analysis was done using Pearson correlation coefficient and regression analysis (multiple regression analysis). Regression was done to evaluate the relationship of independent performance variables between the components of procurement management practices. The regression formula was presented below;

$$\mathbf{Ys = \beta o + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon}$$

Where; Ys = performance of construction firms; βo = Constant; $\beta_{1,}$ $\beta_{2,}$ $\beta_{3,}$ $\beta_4$ = regression coefficients; $X_1$ = Procurement planning; $X_2$ = Inventory management; $X_3$ = Supplier relationship; $X_4$= Outsourcing, ε is the error term

## RESEARCH RESULTS

### Procurement Planning

The study ascertained that procurement planning influences performance of construction firms in Kenya to a great extent and was of great importance as its p - value 0.019 was less than 0.05 and the null hypothesis was therefore rejected. Risk management and market capacity greatly influence the performance of construction firms in Kenya from the findings, while the needs identification influenced the performance of construction firms in Kenya to a lesser extent. These findings concur with Caldwell, Roehrich and Davies (2009) who emphasised that in order to procure the best quality goods or services or combination of these, detailed specifications need to be outlined as they are play a major role in identifying what's required from the contractors and further appended in the bid document.

The study found that procurement planning is critical as it ensures that all areas are covered and planned for and that timelines are clearly outlined. Planning lays the groundwork for the entire procurement process thus enhancing the performance of construction companies. This is in line with Agaba and Shipma (2007) who argue that a procurement plan provides details of the procurement method to be adopted, the product specifications required, the assessment process as well as the criteria to be used to evaluate every tenderer submitted.

## Inventory Management

The findings of the study indicated that the performance of construction firms in Kenya was greatly influenced by inventory management. As its p-value 0.020 < 0.05, the null was rejected, inventory management also proved significant. It also found that the automation of inventory processes greatly influenced construction firms ' performance in Kenya. The findings are in agreement with Silver (2010) who noted that proper inventory management provided upstream and downstream inventory visibility in the supply chain which aside from aiding in maintaining costs at a minimum by reducing variety further ensured that the load sizes were economical. Inventory management also aids in the analysis of costs incurred in obtaining and carrying inventory.

Moreover, the respondents indicated from the results that inventory planning and categorization of inventories have a moderate impact on the performance of construction firms in Kenya. The study concluded that inventory management provides management with the necessary information to enhance their operational activities and minimize errors, enabling maximum profits to be generated while employing the least amount of inventory investment but ensuring that levels of customer satisfaction or order fill rates are not hindered in the same breath. It also helps to account for raw material stock thus enabling the performance of construction firms to be enhanced and sustained. These findings correlate with Eneje (2012) who found that that efficient management of its stock of raw material is a major factor that Nigerian brewers need to put into account in order to enhance and sustain profitability.

## Supplier Relationship

The study showed that how the relationship between suppliers was handled within the organization greatly influenced the performance of construction firms in Kenya. Therefore, as its p-value was 0.028<0.05, the null hypothesis was rejected. The study found that the supplier relationship maximizes both supplier and customer benefits and goes further in identifying and implementing mutual successes that benefit both parties. These findings are in line with Nantege (2011) who argued that effective supplier management can make the entire procurement process cost effective and time efficient. Accessibility to supply market intelligence and the existence of a favorable competitive environment are examples of ways in which a great supplier management strategy can be implement or enhanced.

The respondents also indicated that it enables the procurement function to formulate strategies aimed at enabling suppliers to continuously achieve value for money and reduce the risk of under - performance, and that effective supplier management can make the entire procurement process cost - effective and time - efficient. These findings are similar to those of Emmett and Crocker (2016) who noted that strategic relationship management extended beyond procurement of products and services as this type of relationship sought to maximize both supplier and customer benefits and further identifies and aids in the establishment of mutual successes points that are potentially beneficial to the parties concerned.

## Outsourcing

The study revealed that outsourcing greatly influences building firms ' performance in Kenya. The p-value 0.015<0.05 showed significant outsourcing and was therefore rejected the null hypothesis. The study found that the outsourcing of transportation and warehousing has a major impact on the performance of construction companies in Kenya. Furthermore, the study revealed that outsourcing of employees somewhat influences the performance of construction firms in Kenya. These findings are in line with Sinha (2011), who highlighted a number of benefits of outsourcing offshore as being increased efficiency, reduction of labour cost whilst maintaining quality standards. Outsourcing has also provided flexibility in the allocation of resources and has enabled networks and alliances to build relationships. The study found that outsourcing helps building firms stay competitive in the current dynamic environment, lowers costs, improves customer satisfaction, and relieves some of the duties that make them focus more on the company's strategic elements. The study also found that outsourcing logistics can make a significant contribution to the company's performance by ensuring goods are procured at the right price, time, location, quality and quantity. These findings concur with Kariko (2012) who argues that logistics outsourcing can contribute significantly to a firm’s profitability by ensuring that goods are procured at the right price, time, place, quality, and right quantity. He further notes that an ideal supply chain enables an organization gain a competitive advantage through superior customer service by ensuring all these elements are considered.

## REGRESSION ANALYSIS

The researcher conducted a multiple regression analysis to test the relationship between the variables. This showed how the dependent variable is influenced by the independent variables.

**Table 1: Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | 0.856 | 0.732 | 0.721 | 0.870 |

From the findings, the independent variables were statistically significant predicting the dependent variable since adjusted R square was 0.721. This implied that 72.1% variations in performance of construction firms in Kenya are explained by procurement planning, inventory management, supplier relationship and outsourcing. Other institutional factors influencing performance of construction firms in Kenya that were not covered in this study accounted for 27.9% which form the basis for further studies.

**Table 2: ANOVA Results**

| Model | | Sum of Squares | Degrees of Freedom | Mean Square | F cal | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 199.121 | 4 | 49.780 | 63.661 | 8.25E-26 |
| | Residual | 72.722 | 93 | 0.782 | | |
| | Total | 271.843 | 97 | | | |

From the ANOVA results in Table 2, p-value was 8.25E-26 and F-calculated was 63.661. Since p-value was less than 0.05 and the F-calculated was greater than F-critical (2.4472), then the regression relationship was significant in determining how procurement planning, inventory management and supplier relationship and outsourcing influenced performance of construction firms in Kenya.

**Table 3: Regression Coefficients**

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|
| | B | Std. Error | Beta | | |
| (Constant) | 0.881 | 0.395 | | 2.230 | .028 |
| Procurement planning | 0.861 | 0.461 | 0.721 | 2.385 | .019 |
| Inventory management | 0.733 | 0.309 | 0.672 | 2.372 | .020 |
| Supplier relationship | 0.664 | 0.297 | 0.567 | 2.236 | .028 |
| Outsourcing | 0.786 | 0.318 | 0.681 | 2.472 | .015 |

The established model for the study was:

$$Y= 0.881 + 0.861X_1 + 0.733X_2 + 0.664X_3 + 0.786X_4$$

Where: Y= Performance of construction firms in Kenya; $X_1$= Procurement planning; $X_2$= Inventory management; $X_3$= Supplier relationship; $X_4$= Outsourcing

The regression equation above has established that taking (procurement planning, inventory management, supplier relationship and outsourcing), performance of construction firms in Kenya will be 0.881. The study also found that a unit increases in the scores of outsourcing would lead to a 0.786 increase in the scores of performance of construction firms in Kenya in Kenya. The findings presented also show that increase in the Procurement planning leads to 0.861 increase in the score of performance of construction firms in Kenya if all other variables are held constant.

Further it was found that if inventory management increases, there is a 0.733 increase in performance of construction firms in Kenya. Further, the findings show that a unit increases in the scores of supplier relationship would leads to 0.664 increase in the scores of performance of construction firms in Kenya in Kenya.

All in all, Procurement planning was seen to have the greatest influence on performance of construction firms in Kenya with outsourcing and inventory management following in that order. Supplier relationship had the least influence on the performance of construction firms in Kenya according to the research findings. All the variables were notably found to be significant since their p-values were less than 0.05.

## CONCLUSIONS

The study concludes that a strong and positive correlation existed between procurement planning and construction firms ' performance in Kenya. The study revealed that the performance of construction firms in Kenya is greatly affected by risk management. It also revealed that the analysis of market capacity also greatly affects the performance of construction firms in Kenya. Therefore, the study concludes that procurement planning helps to ensure that all points are covered and planned for and that timelines are clearly outlined and set the entire acquisition / procurement process of acquiring services in motion, thereby enhancing the performance of the construction companies.

The study also concluded that inventory management has a positive and significant impact on construction firms ' performance in Kenya. The study proved that inventory process automation has great effect on the performance of construction firms in Kenya as well, while other inventory planning and inventory categorization are concluded to moderately affect the performance of construction firms in Kenya. Inventory management hence provides management with the necessary information to enhance their operational activities and to minimise errors and accounts for stock of raw material enabling the enhancement and sustainability of construction firms' performance.

In addition, the study concluded that the supplier relationship significantly influences the performance of building firms in Kenya. It had a strong and positive correlation with construction firms ' performance in Kenya. The study also found that the supplier relationship greatly influences construction firms ' performance in Kenya. This was attributed to the fact that timely deliveries and information sharing greatly influenced construction firms ' performance in Kenya, while service reliability moderately influenced construction firms ' performance in Kenya. The study found that the supplier relationship maximizes the benefits for both supplier and customer and goes further in identifying and implementing mutual successes that will benefit both parties and can make the entire procurement process cost - effective and time - efficient.

The study also concluded that outsourcing positively and significantly influenced the performance of construction firms in Kenya. It was evident that transportation outsourcing and warehousing outsourcing had a major impact on how construction firms in Kenya performed slightly with employee outsourcing influencing construction firms ' performance in Kenya. Outsourcing logistics can contribute significantly to the company's performance by ensuring goods are procured at the right price, time, location, quality and quantity.

## RECOMMENDATIONS

Based on the research findings on procurement planning, the study recommends that the management of the construction firms should put more focus on quality assurance in the procurement process since on completion of projects, this affected the viability of the project resulting in budget exceeding, project being sensitive to environmental and / or heritage issues and/ or environmental conditions and approval thus affecting the completion of the projects, being sensitive to the application of new technologies, though facility will be operating within the design specifications . The study also recommends that the National Government should put in place procurement legislations and policies that ensure that clients get satisfied with the way projects are implemented. Also, that projects should take the scheduled time to get completed since it was noted that there are many variations to the project contract leading to high cost of the project.

The study recommends that the management of constructions firms should embrace better management of inventories which would release capital for use elsewhere productively. The most efficient method of inventory control is the use of Just-in-Time system. The organizations should ensure that working capital is not kept in inventory which maximizes supply chain profitability through cost containment and responsiveness. It is necessary to allocate warehouse resources efficiently and effectively to enhance the productivity and reduce the operation costs of the warehouse. There should be proper storage locations for easy order and material handling. There is need for selecting appropriate storage assignment policies and routing methods with regards as a possible solution to improve the efficiency.

On supplier relationship, the study recommends that firms should reconsider contracting suppliers so as to better their firm performances since increasing the number of contracted suppliers would definitely lower the performance by a similar margin of increase. Dispute resolution mechanism should therefore be observed by the firm so as to enhance fulfilment of the placed order and cost reduction so as to enhance performance in their production. The study also recommends the management of the construction firms to observe on how they associate with their supplier, since a good relationship will definitely work towards their better performance.

Further, the study recommends that the management of construction firms should embrace collaborative relationships with their suppliers so as to optimize their supply chain costs. This can be through establishing clear communication networks, joint risk assessment and management and having strategic Supplier partnerships with their key suppliers. Firms should also establish trustworthy suppliers to ensure commitment and credibility in transactions. Technology was viewed as one of the failures in achieving supply chain performance and indications from the findings of its crucial role in the implementation suggest that firms should also invest in technology not only in their firms but also in partnership with suppliers so as to streamline operations in the supply chain.

In regards to outsourcing, the study recommends that the construction firms should have a formal outsourcing process so that they could make decisions which would result to management of risks and securing added value and continuous improvement. The study also recommends that the construction firms should put in place various checks and balances to ensure that they mitigate against the rick of severe losses as a resulting from outsourcing the non-core services. This will help resolve firm’s challenges such as the loss of command of outsourced service, over reliance of third parties, loss of confidentiality with attributable to information leaking to competitors, loss of control in decision making as the party making the decisions may not have the best interests of the firm, limited flexibility making it difficult for them to be adaptable in the dynamic business environment and mediocre quality of work.

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