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SUPPLY CHAIN PRACTICES, REFORMS AND PERFORMANCE IN THE KENYAN MINISTRIES

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ABSTRACT

A significant part of the undesirable performance in public institutions has been attributed to weaknesses in their supply chain performance. It is primarily for this reason that the study sought to survey and investigate the supply chain management practices, reforms and their impact on supply chain performance in the Kenyan national government ministries. The study employed both qualitative and quantitative research designs and utilized data from all the 18 government ministries in Kenya. The 54 respondents who participated in the study were sampled through the census method. The primary data from the sample subjects were collected through semi-structured questionnaires. The study findings drawn from both descriptive statistics and regression analysis identify the use of information technology, partnerships, outsourcing, tendering, distribution and logistics, inventory control, and lean base reduction as the key supply chain practices among government ministries in Kenya. The study findings also reveal that the ministries have made a number of reforms that relates to their supply chain systems including the introduction of e-government, adherence to ISO standards, and implementation of service delivery charters. The present study cements the findings of previous studies that supply chain practices and reforms do, though not significantly, affect the supply chain performance in Kenyan ministries.

Key words: *Supply Chain Practices, Supply Chain Reforms, Supply Chain Performance, Kenyan Ministries.*

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Introduction

Organizational survival has become highly difficult since the beginning of the 21st century both in the public and private sector, owing largely to high competition among local and international firms. In their quest for competitiveness, most organizations have now directed their efforts towards improving the performance of their supply chain systems to achieve competitiveness by elevating the extent of their effectiveness and efficiency (Hughes & Wadd, 2012). One of the efforts has been directed towards adopting relevant supply chain practices, which majorly entails practices such as tendering, outsourcing, inventory control, distribution and logistics, use of information technology, lean supplier base reduction and partnerships (Mwilu, 2013). For instance, in Kenya, almost all FMCG widely use 3PL to distribute their products within and outside the country (Njambi & Katuse, 2013).

Over the past decade, Kenya's public sector has also seen numerous efforts in supply chain management made by the government that are aimed at improving public service delivery. The Government of Kenya has undertaken reforms to enhance transparency, accountability and prudent management and utilization of resources. Prior to 2005, the SCM's function in the public sector was guided by the Treasury Circulars and Manuals which had no legal basis. A key milestone was achieved in 2005 when the SCM practices and procedures in all entities in the public sector were brought under a legal regime by enacting the Public Procurement and Disposal Act (PPDA) 2005 and Regulation 2006 (Thuo & Njeru, 2014). Since 2005, the Kenya government has introduced a number of supply chain reforms partly as an attempt to address prior challenges in public sector supply chain management and align the public sector service deliver with Vision 2030. Key reforms realized

include use of e-Government in public sector supply chain management, adherence to ethical issues and values, increased emphasis on capacity building, and carrying all government supply chain activities within the scope of defined service delivery charters and ISO Certifications. Many are confident that these reforms will undoubtedly not only cost public sector supply chain related costs and lead time but will also improve service quality, service delivery systems, public satisfaction, and sustainability (Meinlschmidt, et al., 2013; Wadongo et al., 2010; Brown, 2016; Markman & Krause, 2014).

Literature Review

The theoretical foundations for the present study was underpinned on the institutional and social-economic theory. The institutional theory is the traditional approach that is used to examine elements of public procurement. In the view of Scott (2004), institutions are composed of cultural-cognitive and regulative elements that, together with associated activities and resources, give meaning to life. The author explains the three pillars of institutions as regulatory, normative and cultural cognitive. The regulatory pillar emphasizes the use of rules, laws and sanctions as enforcement mechanism, with expedience as basis for compliance. The normative pillar refers to norms (how things should be done) and values (the preferred or desirable), social obligation being the basis of compliance. The cultural cognitive pillar rests on shared understanding (common beliefs, symbols, shared understanding). The study accentuates the regulatory pillar as the Kenyan public procurement is guided by regulations and guidelines (PPDA Act) which are from time to time issued by the PPDA only and which must comply with the latter by all Public Procurement Oversight Authority and providers. The underlying regulations establishes

procedures for procurement and the disposal of unserviceable, obsolete or surplus stores and equipment by public entities to achieve efficient management of public funds.

The social-economic theory has been widely advocated by many scholars, such as Sutinen and Kuperan (1999), among others, who have attempted to integrate economic theory with theories from psychology and sociology to account for moral obligation and social influence as determinants of individuals' decisions on compliance. According to Lisa (2010) psychological perspectives provide a basis for the success or failure of organizational compliance. Wilmshurst and Frost (2000) also present the legitimacy theory which postulates that the organization is responsible to disclose its practices to the stakeholders, especially to the public and justify its existence within the boundaries of society. The social-economic theory, which focuses on the relationship and interaction between an organization and the society, provides a sufficient and superior lens for understanding government procurement system (Hui et al., 2011). From this theory, the perceived legitimacy of public procurement rules has been identified as one of the antecedents of public procurement compliance behavior.

Empirical studies have widely centered on supply chain supply and reforms and its role in supply chain performance. An intensive review of literature on supply chain practices reveal that they influence the company performance in more than one way. Schaltegger and Burritt (2014) demonstrates that the management often designs the supply chain in line with the both short-term goals and long-term objectives of the company to improve its performance. Similarly, the supply chain practices help the firm gain a competitive advantage if they meet or surpass all the expectations of which they are established (Thatte, 2007). Qrunfleh & Tarafdar

(2014) note that integrating information technology in its supply chain practices can comfortably enable a firm to coordinate the activities of managing its operations. In the view of other studies, profound partnerships/alliances with suppliers, on the other hand, help the company reconcile its balance sheet with the long-term goals (Mogikoyo et al., 2015). As established in Prajogo and others (2016), distribution and logistics are central to better organizational performance since they help the company order and manage inventory, cut costs of production and operation, improve time management, meet company goals and objectives, and control both outbound and inbound shipments, among other activities that ensure meeting of customer demands. With the help of outsourcing, the company can save production and operation cost, and focus on the fundamental business aspects (Wu et al., 2014).

In their study, Shen and others (2013) have acknowledged the fact that the primary need for reforming supply chain is to improve its performance as well as the overall organizational performance. Their research reveals that supply chain reforms majorly adherence to service delivery charters and ISO certification play different roles in improving supply chain practices, and well contribute to the overall performance of the company in many ways. For example, ISO certification allows the company develops performance standards and processes that meet and measure the challenges facing the company (Shen et al. 2013). On the other hand, the use of service delivery charters it integrates accountability, integrity, humility, professionalism, independence, and openness in its operations. Yadav and Barve (2015) cements the idea that institutional capacity building can enable the management to improvise new measures for managing data for both service and product supplies in a bid to improve both forecasting and delivery of

company processes. In addition, it creates ample room for the company to introduce new ventures, or even expand the existing ones. In the literal sense, capacity building means creating more room, which could be evaluated through both practical and qualitative measures (Matowe, 2015). Other scholars have established that values and ethics do not only give the direction but also the manner with which the company can align its strategies and activities (Kirwan et al., 2017).

Problem Statement

The strategic importance of supply chain management in the public sector in Kenya is not well understood. The organization structures and systems within the supply chain management are not ideal and until recently the supply chain management in Kenya were manned by inexperienced and /or under-skilled leadership, high staff turnover and lack of motivation (Thuo & Njeru, 2014). There has been lack of clarity about rules and responsibilities of technical staff; political appointees and non-supply chain practitioners which creates scope for interference, thereby giving rise to instances of corruption until the enactment of the Public Procurement Laws (Kazi, 2012). There have been no consequences for those who fail to perform in the required level. Policies and regulations are often confusing and cumbersome. In addition, fragmentation of processes and systems makes supply chain management compliance difficult in the public sector. Moreover, there is sufficient evident to suggest that within the Kenyan public sector, the importance of supplier management has been underestimated in addition to limited understanding about how public sector decisions and actions affect the overall business environment.

Research Focus

Most global and domestic studies have been undertaken in an attempt to demonstrate strategic importance of supply

chain management (Kazi, 2012; Omonge 2012; Mogikoyo et al., 2015; Yadav & Barve, 2015; Wu et al., 2014). Though, it can be established that a significant proportion of these studies have laid emphasis on private sector and has done little to ascertain the contribution of the supply chain management in the public sector. This study, thus, sought to bridge the gap by attempting to examine commonly used supply chain management practices and reforms in Kenya and their influence on supply chain performance in the Kenyan public sector.

Methodology

General Background of Research

A research design is a procedural plan employed by researchers aimed at providing answers to the underlying research question economically, accurately, objectively and validly (Garner & Scott, 2013). The current study employed both the quantitative and qualitative research designs owing primarily to the existence of both qualitative and quantitative phenomena in the study. The study was based on target population comprising of top and middle level officers in the ministries' supply chain and procurement department.

Population and Sampling

Owing to the small number of units in the target population (18 ministries under the National Government Docket), the present study adopted a census. In this context, the research data was derived from all the 18 ministries in Kenya. Here, top and middle level managers from each ministry's supply chain and procurement department were sought out to provide reliable information used to provide solution to the research question outlined in chapter one. The study gathered data from a total of 54 professionals from the 18 ministries (3 respondents per ministry).

Data Collection

The study utilized primary data sources by relying on the field data collected from the 54 respondents. The field data was primarily collected using semi-structured questionnaires. The questionnaires comprised of structured and open-ended questions with score that are based on the Likert-scale. The distribution of questionnaires was done using both hand delivery at the respondents' place of work during business hours and via emails.

Data Analysis

$$Scf = \beta_0 + \beta_1 Rf_i + \beta_2 SCP_j + \varepsilon$$

Where:

Scf – Supply Chain Performance

β_0 – Constant

β_1, β_2 – Regression Coefficients

Rf_i – Set of supply chain reforms

SCP_j – Set of supply chain management practices

ε – Error Term

Results

Respondents Demographics

The results from field data were presented in form of tables, charts and graphs for the readers' ease of understanding and interpretation. The study recorded a response rate of 98%. Statistics reveals that 59% of those who participated in the study were male while the rest were female. Equally, most of the participants cited to have been aged between 41-50 years. Only one participant involved in the study was below 30 years (See table 1). Since the retirement age of public servants is pegged at 60 years, one participant

The study adopted both quantitative and qualitative data analysis techniques. Relevant statistical tools (SPSS 20.0 and Excel 2010 analysis tool kit) were used to analyze quantitative data. These ideally included SPSS and excel data analysis tool kit. As part of quantitative analysis, the study used descriptive statistics to arrive at the data frequencies and measures of central tendencies. Regression analysis was also used to determine the direction and degree of association among the variable under study. The following analytical model was adopted.

reported has been aged over 60 at the time of the study. Due to the sensitive nature of the question, two people failed to respond. Statistics further indicate that only 17% of the respondents occupied top management positions in the ministries. The rest (44 respondents) worked at the ministries' middle level positions. A large proportion of those reported to have been working in top management positions were male. The statistics further indicates that most male and female respondents at the top management positions were aged between 51-60 years.

Table 1: Age, Gender and Job Level

Gender		Job level			Total	
		Top management	Middle management	Missing		
Male	Age	31-40	0	4	1	5
		41-50	1	17	0	18
		51-60	6	2	0	8
		Total	7	23	1	31
Female		Below 30	0	1	0	1
	Age	31-40	0	11	0	11
		41-50	0	6	0	6
		51-60	1	2	0	3
		Total	1	20	0	21

Source: Field data

A large proportion of respondents were specialists in procurement (74%) and inventory management (15%). Besides, it can be noted that most respondents (employees) in procurement and supply

chain departments of Kenya's ministries had very little interest or knowledge in logistics, contract management and disposal.

Table 2: Specialization by job level

		Specialization					Total
		Procurement	Logistics	Contract management	Disposal	Inventory	
Job level	Top management	7	1	0	0	1	9
	Middle management	32	0	3	2	7	44
	Missing	1	0	0	0	0	1
Total		40	1	3	2	8	54

Source: Field data

Common Supply Chain Practices in Ministries

In determining the supply chain practices that are commonly used in ministries, the respondents were asked to select their ministry’s preferred practices from a list of practices, which comprised seven main supply chain practices: tendering, outsourcing, distribution and logistics, use

of information technology, adoption of lean supplier base reduction activities, and formation of supplier chain collaborations or partnerships with suppliers. Figure 3 provides a summary of the extent with which the ministries engage in activities associated with the underlined supply chain practices.

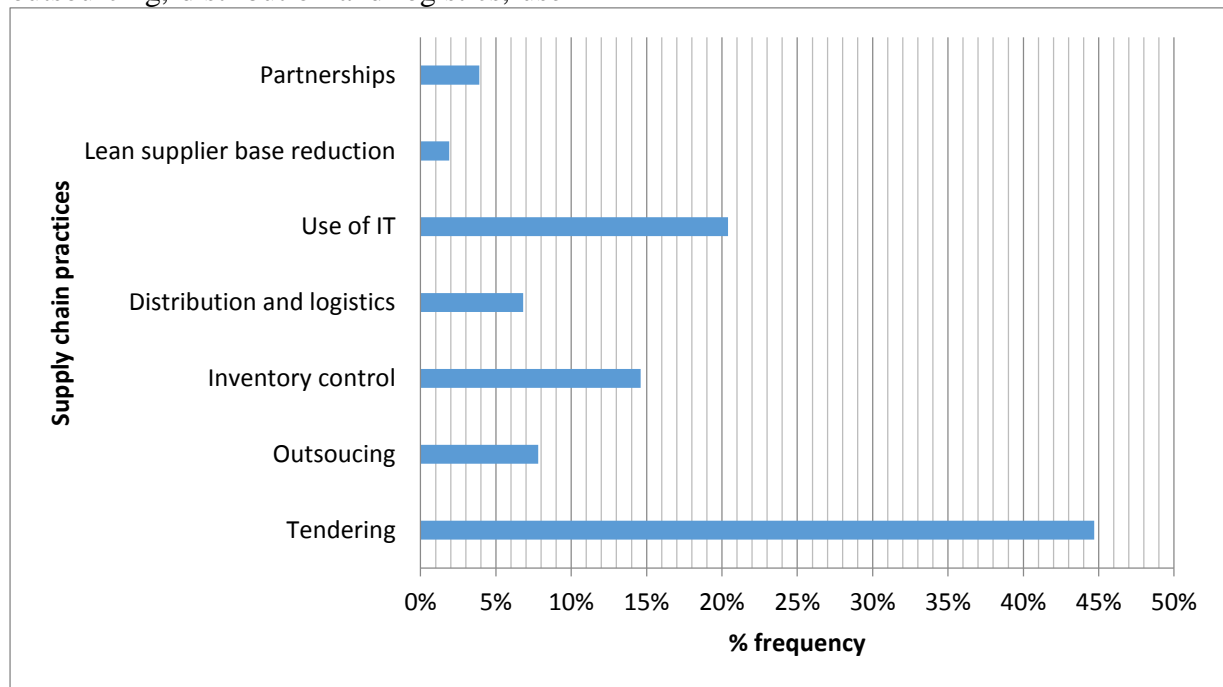


Figure 1: Key supply chain management practices in ministries

Source: Field data

Supply Chain Reforms in Ministries

As revealed under table 3, emphasis on values and ethics with regards to supply chain activities has been identified as number 1 major reforms among Kenyan

ministries followed by adherence to ISO certification. With mean of 2.44, it can be evident that a relatively higher fewer people view digitalization as a major reform in ministries compared to the rest.

Table 2: Key reforms in ministries

	N	Mean	Rank	Std. Deviation
Conformity to ISO standards	54	2.17	2	.795
Digitalization of service	54	2.44	4	.904
Emphasis on values and ethics	54	2.13	1	.87
Adherence to service delivery charters	54	2.37	3	1.051
Valid N (listwise)	54			

Source: Field data

Supply Chain Practices, Reforms, and Supply Chain Performance

The following are tables 4.5, 4.6 and 4.7 show the regression output from the analysis of the respondents' data. Indicates the model summary, regression coefficients and ANOVA.

Table 3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.496 ^a	.246	.216	.61262

a. Predictors: (Constant), Supply chain reforms, Supply chain practices

The R-value indicates that about 50% of the changes of supply chain performance in the ministries results from the changes in supply chain practices and reforms.

Table 4: Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.914	.334		2.739	.008
	Supply chain practices	.262	.137	.266	1.914	.061
	Supply chain reforms	.295	.133	.309	2.225	.031

a. Dependent Variable: Supply chain performance

Table 5: ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	6.242	2	3.121	8.317	.001 ^b
Residual	19.140	51	.375		
Total	25.383	53			

a. Dependent Variable: Supply chain performance

b. Predictors: (Constant), Supply chain reforms, Supply chain practices

Discussion

Drawing from the results represented in figure 1 above, it is clear that tendering (with 45% score) is the most used practice among Kenyan ministries. This can be supported by the fact that, as opposed to the private sector, the public sector in Kenya entities does not engage directly in the buying or acquisition of goods or services. Ministries, therefore, use tendering as a platform of acquiring the goods or services that forms the central part of their day-today operations. Information technology has also been reported as the second most used supply chain practice as supported by 21% of respondents. With the advancement in Kenya's level of technology, the public sector is increasingly shifting from the conventional supply chain practices to the digitalization of services. It is clear from the analysis that some supply chain practices such as outsourcing, distribution and logistics, and lean supplier base reduction are yet to take off among ministries. The ministries, for instance, have been reluctant to outsource some of their services citing reasons such the possible threat to security and confidentiality often associated with outsourcing. The application of lean supplier base reduction in ministries, on the other hand, is not a well-understood concept among many procurement and supply chain staff in Kenyan ministries owing to their limited staff capacity,

particularly in specialized technical disciplines.

The results indicate that all the seven major supply chain reforms (e-government, RRI, values and ethics, institutional capacity, service delivery charters, ISO standards, and inspection and acceptance) have been adopted in at least one ministry in Kenya. E-government is the most adopted supply chain reforms in ministries as reported by 44% of the respondents. This initiative has largely been motivated by the overall move by the Kenyan government to digitize all its operations and services as part of the implementation of the Vision 2030. Today, evidence also shows that ministries' procurement and supply chain departments have shown increased adherence to and observation of service delivery charters and ISO standards while carrying out their duties. These two reforms have paved way for the realization of supply chain effectiveness on quality of services, cost, and responsiveness to the needs of stakeholders. There is also overwhelming evidence to indicate that about 11% of the ministries conducts thorough inspection of goods before accepting to enter into a contract of purchase. This effort is aimed at reducing wastage of public resources that emanates from inappropriate supply chain practices. Though some efforts have been made by ministries, not much has been implemented in certain important

aspects that forms an important part of supply chain management in the public sector such as reduced risk investments initiatives, establishing institutional capacity, and carrying out supply chain practices based on values and ethics.

The classical linear regression analysis (ordinary least squares method) was used to establish the relationship between supply chain practices, supply chain reforms and the performance of supply chain system. The results of the regression reveal positive regression coefficients for both supply chain reforms and supply chain performance implying that changes in supply chain practices and reforms independently impose a positive directional effect on supply chain performance of ministries. Though, both supply chain reforms and supply chain practices do not significantly determine supply chain performance in Kenyan ministries. This supported both by the ANOVA test and a multiple coefficient of determination of 0.496. This is an indication that factors such as organizational politics, corruption and financing of ministries could be playing a major role in influencing supply chain performance of ministries in Kenya.

Conclusions

The study aimed to ascertain the manner and extent to which the supply chain practices and reforms interact to give rise to improved supply chain performance. The study findings reveal that supply chain practices are used more frequently and intensively than others largely because of their perceived importance to ministries' supply chain management. Over the recent past, a number of supply chain reforms have also been introduced in ministries as the quest to streamline government operations particularly with the increased pressure to digitalize all government services in order to compete effectively with the private sector. The current supply chain practices and the new reforms

continue to have a direct impact on supply chain performance in ministries. Though, it should be noted that these two set of factors do not solely determine the fate of supply chain systems in ministries as there could be other equally important factors such as political interference.

To improve supply chain management in Kenyan ministries, efforts need to be directly towards training of relevant staff on various aspects such as on lean supply chain reduction, best outsourcing practices and supply chain risk management strategies. Also, in realizing sustainable supply chain performance, ministries need to adopt supply chain best practices especially better supplier performance, supply chain segmentation, and lean logistics. Equally, the ministries are encouraged to analyze, measure, and effectively manage the performance of suppliers in an effort to alleviate risks, cut costs and boost continuous improvement. Supply chain segmentation can also be used to align the supply response capabilities and customer channel demands. This can be achieved if efforts are put in place to improve e-procurement through the Integrated Financial Management System systems (IFMS) with a view of reducing lead-time (Estampe et al., 2013). There is a need to institute reforms specifically to improve institutional capacity of ministries. Here, focus should be on three key elements: provisional of institutional support, mechanisms for plan implementation (networking and partnership arrangements) and supporting elements. Institutional support can take the form of increased funding to ministries to spearhead payments to suppliers. The supporting elements should incorporate sharing of expertise and experience, transfer of knowledge, and dissemination of information.

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