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THE EFFECTS OF INVENTORY MANAGEMENT PRACTICES ON OPERATIONAL PERFORMANCE OF KISII COUNTY GOVERNMENT, KENYA

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Abstract

Inventory management remains a significant challenge for county governments in relation to timely provision of high quality service to the public; forums have been organized across counties with the intention to foster an exchange of ideas around various issues including specialty products, new technologies, and reducing supplier risk from supply chain inadequacies and management of inventories. Despite all the efforts by the central government and County governments in Kenya still inadequacies are observed in the operational performance among counties. The purpose of this study was to evaluate the effects of inventory management practices on the operational performance of counties with particular interest of operations in Kisii county, Kenya. The specific objectives included establishing the effects of demand forecasting practice, inventory categorization practice; and Vendor managed inventory (VMI) practice on the operational performance of Kisii county, Kenya. The study established that supply dependability affect operational performance to a moderate extent 44.7%, effects of inventory categorization in terms of inventory for customer service is rated as the most influential on operational performance and free flow of order fulfilment of supplies, reduced inventories and timely replenishment of inventory to user departments influenced operational performance. The study recommends that procurement and supplies teams in the county should monitor demand forecasting of inventory for efficient operational performance and service delivery to the general public.

Keywords: *demand forecasting, inventory categorization, vendor managed inventory*

1. Introduction

Successful inventory management involves creating a purchasing plan that will ensure that items are available when they are needed (but that neither too much nor too little is purchased) and keeping track of existing inventory and its use (Berling, 2011). Two common inventory-management strategies are the just-in-time method, where establishments plan to receive items as they are needed rather than maintaining high inventory levels, and materials requirement planning, which schedules materials deliveries based on sales forecasts. Proper inventory management requires an organization to undertake stocking and use appropriate method to value stock so as not to under or over state profits (Kotabo, 2002). The use of various inventory management methods can help public departments improve their operational performance.

The inventory management approach of accurate response is an excellent mechanism that helps businesses manages their inventory, which may get overloaded due to improper forecasts. The Vendor Managed Inventory effectiveness as a practice is affected by inventory flow, the quality of ICT and quality of information and sharing but is not affected by the quality of relationship. Most of the empirical studies addressing the issue of Vendor Managed Inventory have focused on manufacturing firms and retailers (Vigtil, 2007; Kauremaa, Smares, & Holmstrom, 2009). These studies have not related these inventory management practices to operations to the public sector.

2. Statement of the Problem

Despite all the efforts by the central government and County governments in Kenya, still inadequacies are observed in the operational performance among counties. It is not clear the extent to which inventory management practices effects tend to influence operational performance in the county governments in service provision. It was therefore imperative to undertake a study that evaluates the challenges of inventory management practices on the operational performance of counties with particular interest of operations in Kisii County Government-Kenya.

3. Objectives of the Study

The study general objective is to evaluate the effects of inventory management practices on the operational performance of Kisii County Government. The study was guided by the following specific objectives;

i) To establish the effects of demand forecasting on the operational performance of Kisii County Government Kenya

ii) To investigate the effects of inventory categorization on the operational performance of Kisii county Kenya

iii) To determine the effects of Vendor managed inventory (VMI) on the operational performance of Kisii county Government Kenya.

4. Justification of the Study

The existing literature reveals that scanty research has been done on operational performance of county governments since Kenya devolved its central government to county government. The improvements in inventory management will contribute towards achieving the government objectives like provision of services and employment opportunities.

5. Significance of the study

This study is of significance to the management of the establishments in the counties in Kenya for purposes of effective service delivery. To academicians, the findings will help creating knowledge to bridge the gap between known and the unknown facts in the inventory management practices in the public sector in pursuit for service delivery.

6. Research Methodology

The study adopted a case study design with a sample size of 38 respondents. A structured questionnaire was used for collecting primary and secondary data was collected from both published and unpublished certified reports of Kisii County government concerning inventory management for purposes of influencing operational performance in its bid to provide services within Kisii County. Data collected from the field has been analyzed using descriptive statistics.

7. RESULTS AND DISCUSSION

Demand Forecasting Practice and Operational Performance

The indicators of effects of demand forecasting practice were evaluated in terms of the extent to which they are relate to operational performance in the county government. The response rate obtained from the field was recorded as in table 1.

Table 1: Demand Forecasting Practice and Operational Performance

Effects of demand forecasting practices	Response rating by response					
	Very great extent	**Great extent**	**Moderate extent**	**Very small extent**	**No extent**	**Total%**
Supply dependability	5.3%	10.5%	44.7%	31.6%	7.9%	100%
Reduction of inventory	7.9%	18.4%	39.5%	23.6%	10.5%	100%
Efficiency of inventory flow and warehousing	21%	34.2%	18.4%	15.8%	10.5%	100%
Inventory management and related policy execution	7.9%	18.4%	42.1%	13.2%	18.4%	100%
Material scheduling effectiveness	26.3%	39.5%	21%	10.5%	2.6%	100%
Efficient inventory management and its forecasting	23.6%	34.2%	28.9%	7.9%	5.3%	100%
Response to inventory requirements in the sub counties	44.7%	26.3%	15.8%	2.6%	10.5%	100%
Reduction in lead time of inventory	18.4%	39.5%	23.6%	13.2%	5.3%	100%

Table 1 indicates that supply dependability affect operational performance to a moderate extent 44.7% (17). This effect reveals that a service to the public as a measure of performance can be linked to supplies by procurement department to user departments. The slow supplies to the department affects operational performance. The information indicates that reduction of inventory affects operational performance to a moderate extent 39.5% (15).

The reduction in material supplies affect the level of service delivery particularly the consumables; if they are linked to service delivery then operational performance will be low.

The effect of efficiency of inventory flow and warehousing influence operational performance was rated at a great extent 34.2% (13) by the respondents. Demand forecasting practices are oriented towards operational performance. The efficiency is always linked to historical data with

minimum errors; they are always linked to accurate time periods and linked to seasonality of work done over a period of time. The forecasting is based on budgeting practice where target matching is practiced. Inventory management and related policy execution influence operational performance was rated at a moderated extent 42.1% (16) by the respondents in this study. Policy is a plan of action to achieve a desired objectives in an organization; county government have policies behind their operational performance targets. The material scheduling effectiveness influence on service delivery was rated to a great extent by 39.5% (15) respondents. It is clear that service delivery relate to availability of materials to help in rendering services to the general public.

Efficient inventory management and its forecasting influence on operational performance in the county governments was rated at great extent 34.4% (13) by the respondents. Demand forecasting techniques are geared towards efficient and effective inventory management which can also be linked to operational performance was rated by the respondents at very great extent 44.7% (17); the sub counties are functional units of the county and material supplies to render services in the county residents is of essence/. Demand forecasting practice is budget centered and cost drivers are used to match the uses and users of inventory to meet the desired operational performance targets. The effect of reduction in lead time of inventory affects operational performance; delayed delivery of inventories to user departments will impact on the level of service delivery.

The results of this study on the effects of demand forecasting practices and operational performance concurs with past studies; Tim-blumentritt (2006) defined strategies as pattern of decisions that orchestrate an organization's activity and investment targeted at specific outcomes. Strategic management on the other hand is often conceptualized as the rational progression from strategy formulation to strategy implementation. Strategic management, in both theory and practice, tries to explain how firms may improve their performance in competitive interactions with other firms. As firms evolve new ways and means for competing, the concepts about organizations and their competitive processes on which strategic management theory and practice are based must evolve as well. In this context the effects of demand forecasting practice and operational performance form the benchmark of work targets. One specific problem with the conventional planning process according to Tim-Blumentritt (2006) is that strategic planning and budgeting are often out of set with one another. In many cases, budgets for allocating and

spending money have little connection with business or operational strategies. Strategic management and budgeting are distinct but intertwined activities. When properly applied, both processes improve an organization's ability to create and sustain superior performance; it is clear to point out that budgeting, strategies and strategic inventory management share an orientation towards improving business performance, as each is used to set an organization on an appropriate path to success and guide its managers' decisions and activities. Such relationship between strategic management and budgeting does not exist in many firms. The problems in appropriately using the two processes may arise when a firm does not properly integrate them or does not employ strategic management at all; therefore counties are not an exception to these problems and effects of inventory management practices in relation to service provision.

Inventory categorization practice and operational performance

The study sought to establish the effects of inventory categorization practices on the operational performance of Kisii county government Kenya. The response rate obtained from the field was recorded as in table 2 below.

Table 2: Inventory categorization practices and operational performance

Inventory categorization	Level of influence on operational performance					
	Most influential	More influential	Moderately influential	Less influential	Not influential	total
Low value inventory	2.6%	31.6%	42.1%	18.4%	5.3%	100%
Inventory for efficiency	21.3%	34.2%	28.9%	5.3%	10.5%	100%
Inventory for customer service	39.5%	26.3%	18.4%	13.2%	2.6%	100%
Cost for inventories	34.2%	42.1%	21.05%	2.6%	0.0%	100%

Table 2 indicates that effect of inventory categorization in terms of inventory for customer service is rated as the most influential on operational performance in the county at 39.6% (15) response rate; while cost of inventories as an effect of categorization as an effect of categorization was rated at 34.2% (13) in terms of most influential to county's operational performance and inventory for efficiency as an effect of categorization to operational performance was rated at 21.3% (8) by the respondents and finally low value inventories categorization effect was rated lowest at 2.6% (1) as most influential in operational performance of the county in relation to the provision of public goods/ service.

Therefore it is clear from the table above that study respondents reactions reveal that low value inventories were moderately influential 42.6% (16), inventory for customer service were most influential 39.5% and cost of inventories was more influential 42.1%.

Hence provision of service to the general public is a key driver of inventory management which is also geared towards operational performance of the county government.

Inventories as part of the current assets which are expected to be converted to another form of working capital (receivables or cash) within less than one year, occupy a significant portion of business assets in most commercial enterprises. Keeping this fact in mind the existence of inventories implies proportionally significant financial investment. Therefore inventory optimization is really an optimization of financial decisions when it comes. But in the public sector the inventories are looked as consumables for service delivery to the general public in this case it does not a commercial obligation. The level of service delivery is key in measuring operational efficiency in using these inventory.

Vendor Managed Inventory Practice and Operational Performance

The study sought to determine the effects of vendor managed inventory (VMI) practices on the operational performance of Kisii county government Kenya. The response rate obtained from the field was recorded as in table 3.

Table 3: Vendor managed inventory practice and operational performance

Effects of vendor managed inventory	Response rate from the respondents (influence on operational performance)					
	Very great extent	Great extent	Moderate extent	Little extent	No extent	Total
Free flow of order fulfilment of supplies to user departments	23.7%	31.5%	13.2%	18.4%	13.2%	100%
Reduced inventories and related supplies to user departments	5.3%	50%	18.4%	21%	5.3%	100%
Timely inventory replenishment in user department	13.2%	55.3%	10.5%	13.2%	7.9%	100%
Reduced frequency of ordering inventories to user departments	10.5%	31.5%	50%	7.9%	2.6%	100%

Table 3 shows that free flow of order fulfillment of supplies to user departments influence operational performance to great extent as indicated by 31.5% (12) response rate. The rate of material flow in any organization should correspond with level of operational activities. In the county governments the inventories are in line with the type of service rendered to the public and correspond with the yearly budgets. The information in the table 4.5 further reveals that reduced inventories to user departments influence operational performance to great extent at 50% (19) response rate.

The study established that timely replenishment of inventory to user departments influenced operational performance to great extent at 55.3% (21) response rate. The study further revealed

that reduced frequency of ordering inventories for use in the user departments influenced operational performance to a moderate extent at 50% (19) response rate. Therefore it is clear that when ranking these effects in relation to operational performance results show that timely replenishment of inventories (55.3%) reduced inventories and related supplies to user departments (50%), free flowing order fulfillment to user departments (31.5%) influenced operational performance in the county to great extent in that order of their strength respectively; while reduced frequency of ordering of inventories influenced operational performance to a moderate extent (50%).

Inventory Management Practices and Operational Performance

The study sought to establish the indicators of operational performance measurement that were affected by the inventory management practices adopted in Kisii County. The information obtained from the field was presented as in table 4 below.

Table 4: Inventory Management practices and Operational Performance

Operational performance measurement indicator in the county	Level of influence by inventory management practices (percentage and frequency)				
	Most influenced	More influenced	Moderately influenced	Less influenced	Not influenced
Level of service delivery	78.9%	13.2%	5.3%	2.6%	0%
Infrastructure improvement	57.8%	34.2%	2.6%	0%	5.3%
Level of attraction of business community	21.0%	36.8%	15.7%	7.89%	18.4%

The information in table 4 indicates that the level of service delivery is the most influenced operational performance, measurement indicator at 78.9% (30) response rate. The government role is provision of essential service s to the general public which will ensure a healthy working

nation through its citizens. Infrastructure improvement was rated by 57.8% (22) respondents as most influenced performance indicator. This results show that the level of service delivery dominated as the most influenced operational performance indicator. While level of attraction of business community to the county was rated 21.0% (8) respondents as most influenced.

In the last 20 years, Kenya's civil service has undergone a number of changes. Some of these changes include employee rationalization leading to wage bill reduction, performance improvement, structural adjustment programme after aid cuts and the institutionalization of results-based management. From 1993 to 2002, the government retrenched more than 100,000 civil servants but had only a negligible impact on the effectiveness or efficiency of the civil service. The government then introduced result-oriented management but by 2005 nothing much had come out of it. Later, between 2006 and 2008, the government decided to shift the public service toward a result orientation approach by introducing and facilitating the development and management of a holistic result based management system through the 'Results for Kenya' programme. The aim was to enhance performance efficiency in all government ministries, departments and agencies. It also meant to reverse the negative image of the public service. The Kenyan's public service has been undergoing multidimensional, interdependent and interlocking reforms through performance improvement strategies. The country has made tremendous progress through these reforms that were anchored in the Performance Management Systems (PMS). The county government's responsibility is to bring services closer to people which must be given with maximum allocation of resources inform of inventories. Therefore inventory management practices influence operational performance of the public sector. Citizen engagement has become critical in the public service. In order to improve citizen engagement, the service must endeavor to ensure effective organizational performance. This will in turn lead to increased level of public trust and confidence. In such a situation, the level of employee involvement will be enhanced as they serve their customers. This ultimately leads to improved customer and employee satisfaction. Poor governance and corruption impacts negatively on general performance of an economy since resources are not used optimally. In this regard, Kenya has made significant strides towards increasing transparency and accountability to combat corruption. Procurement of inventories and management practices on these inventories adopted in the counties play key role in the provision of public services.

8. Summary of Findings

The study established that majority of the respondents 71.1% of the respondents were procurement officers a positions which was important in this study in relation to inventory management practices and operational performance in Kisii county government. The study established that majority of the respondents 31.6% have worked in the public sector in the same capacity for a period between one to three years. This proportion of respondents in lengths of service to the county indicate the degree of experience in the same capacity and linking of inventory management practices, inventory control and effective targets towards achieving improved operational performance in the county.

Demand forecasting

The study established that supply dependability affect operational performance to a moderate extent 44.7%. This effect revealed that a service to the public as a measure of performance can be linked to supplies by the procurement department to user departments. The slow supplies to the departments affect operational performance. The information indicated that reduction of inventory affected operational performance to a moderate extent 39.5% the reduction in materials supplies affect the level of service delivery particularly the consumables that are linked to service delivery. The effect of efficiency of inventory flow and warehousing influenced operational performance to great extent.

Inventory categorization

The study established that effects of inventory categorization in terms of inventory for customer service is rated as the most influential on operational performance in the county at 39.5% response rate; while cost of inventories as an effect of categorization was rated at 34.2% in terms of most influential to county's operational performance and inventory for efficiency as an effect of categorization to operational performance was rated at 21.3% by the respondents and finally low value inventories categorization effect was rated lowest at 2.6% as most influential in operational performance of the county in relation to the provision of public goods (service).Therefore it is clear that inventory for efficiency in service delivery, inventory for customer service and cost of inventories influenced operational performance in the counties.

Hence provision of service to the general public is the key driver of inventory management which is also geared towards operational performance of the county government.

Vendor Management Inventory

The study found out that free flow of order fulfilment of supplies, reduced inventories and timely replenishment of inventory to user departments influenced operational performance. The study that level of service delivery is the most influenced operational performance, measurement indicator at 78.9% (30) response rate in the county government. The government's role is provision of essential services to the general public which will ensure a healthy working nation through its citizens. Also Infrastructure improvement and attraction of business community to the county were rated by respondents as most influenced operational performance indicators in the county governments. Therefore it is clear that inventory management practices do influence operational performance of county governments in pursuit of their mandate of service delivery to the general public.

9. Conclusion

On the basis of the first objective it can be concluded that demand forecasting influence operational performance in county governments. Therefore management should monitor supply dependability and reduction of inventory as they are likely to affect operational performance and service delivery to the general public.

On the second objective it can be concluded that inventory categorization in terms of inventory for customer service influence operational performance in the county governments. Therefore managers of supplies in the county governments should observe inventory categorization in terms of cost, inventory for efficiency, low value inventories. Therefore it is clear that management must focus on inventory for efficiency in service delivery, inventory for customer service and cost of inventories influenced operational performance in the counties.

Finally, for the third objective it can be concluded that vendor management inventory influence operational performance of county governments. The free flow of order fulfilment of supplies, reduced inventories and timely replenishment of inventory to user departments in the county departments is important as functional units of the county governments in terms of service delivery. The level of service delivery measurement indicator is the most influenced operational

performance through supplies in the county governments. The administrators in the procurement and supplies department within the county government must understand the scope of the vendors to bring out clear picture of their contribution to service delivery to the general public within the county. Therefore it is clear that inventory management practices do influence operational performance of county governments in pursuit of their mandate of service delivery to the general public.

10. Recommendations

The study recommends that procurement and supplies teams in the county should monitor demand forecasting of inventory for efficient operational performance and service delivery to the general public. Managers of procurement and supplies should observe inventory categorization in terms of cost, efficiency, value inventories to facilitate efficiency in service delivery and operational performance in the counties. Lastly, the administrators in the procurement and supplies department within the county government must understand the scope of the vendors to bring out clear picture of their contribution to service delivery to the general public within the county.

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