



**KNOWLEDGE MANAGEMENT PROCESS CAPABILITIES AND PERFORMANCE OF KENYA PORTS AUTHORITY**

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### ABSTRACT

*The main objective of the study was to investigate the knowledge management process capabilities on performance of Kenya Ports Authority. The study was anchored on knowledge based theory, organization learning theory and intellectual capital theory. The study adopted descriptive survey design and the population of interest comprised of 517 employees of Kenya Ports Authority. The study adopted simple random sampling technique to derive the sample size. Statistical formula of Yamane was used to get a sample size of 400 respondents. Data was collected by use of semi-structured questionnaires whereas secondary data was collected from company annual reports, published journals and existing researches. Collected data was checked for correctness and analysed quantitatively by use of Statistical Package for Social Science (SPSS) version 25 tool. Descriptive analysis was determined by use of mean and standard deviation while regression analysis was determined by model summary, ANOVA and regression coefficients. Correlation analysis was computed to determine the nature of relationship between the variables. The study findings established that only educated and experienced employees were contracted by the port of Mombasa to aid in knowledge acquisition. In addition, the port offered on job training on its employees to let them acquire knowledge and the port has put a mechanism to collect customer feedback and that the institution has designed expert systems which aid in acquisition of knowledge. However, the port of Mombasa was found to lack robust research and development spirit in the port to produce knowledge but on the brighter side, the port of Mombasa kept track of good practices in it's database which was up to date. The study concluded that the port of Mombasa has adequate knowledge access policies to protect knowledge. Further, it was concluded that knowledge is protected by putting strong firewalls in the information systems and the port has knowledge protection maps. The port creates awareness of knowledge protection to employees by offering monetary and non-monetary incentives. The study recommended that the port of Mombasa management should come up with adequate knowledge access policies to protect knowledge from evaporating and if need be, the acquired knowledge should be protected by putting strong firewalls in the information systems. The port management should develop knowledge protection maps and continuously create awareness of knowledge protection to employees by offering monetary and non-monetary incentives.*

**Key Words:** Knowledge Acquisition, Knowledge Conversion, Knowledge Protection, Knowledge Application

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## INTRODUCTION

The dynamic nature and velocity of the contemporary marketplace has created a competitive incentive among many public and private establishments to consolidate and reconcile knowledge assets as a means of creating value that is sustainable over time (Ndabari, 2021). The growth of the Internet has made vast amounts of information accessible to various professionals and is viewed as the knowledge era, (Schiuma, 2017). Factors such as globalization, advancements in technology, and workforce diversity combined with the effect of a more educated and informed society have contributed to increased focus on learning and development activities in all types of organizations. However, despite this, lack of information has been transformed to the availability of information and the serious pressures from the global perspective regarding management include identification, creation, dissemination and protection of knowledge (Nawaz, Hassan, & Shaukat, 2016).

In order to achieve competitive sustainability, many organizations are launching extensive knowledge management efforts. Knowledge management is the systematic and organizationally specified process of acquiring, organizing and communicating knowledge of employees so that other employees may make use of it to be more effective and productive in their work (Alavi & Leidner, 2017). Knowledge management plays a key role in improving the way people work and in promoting an environment that encourages employees to interact through effective communication channels and creating a culture governed by norms and values that affects their behavior (Grant, 2015). However, most definitions are in conformity on the right approach on knowledge management and that is how knowledge must be coordinated to be effective through its creation, sharing and dissemination, (Schiuma, 2016).

The management of knowledge management can be approached in two knowledge paradigms, that is, explicit and tacit knowledge. Explicit knowledge is knowledge which can be harnessed and

compounded in various forms such as databases and records. The primary attribute of explicit knowledge is its communicability and transferability (Chen, & Huang, 2016). On the other hand, tacit knowledge is the knowledge which is innate to the minds of individuals. This kind of knowledge is regarded as more valuable than explicit knowledge since it has the capability of providing context for experiences, ideas, places and people. This kind of knowledge calls for rich individual context trust and proximity hence it's hard to formalize and define.

The ability to generate knowledge and diffuse it throughout the organization has been recognized as a major strategic capability for gaining sustainable competitive advantage (Senanji & Nyabonga, 2016). Despite the competitive necessity of becoming a knowledge-based organization, senior managers have found it difficult to transform their firms through programs of knowledge management.

Globally, in United States of America Mills and Smith (2016) explored the effect of knowledge management resources on firm performance and the findings indicated that knowledge resources such as acquisition and structure have positive effect on firm performance. On the other hand, the study found that technology and organizational culture had no positive effect on performance. In Singapore, Lee (2017) did a study to investigate the knowledge management practices impact on polytechnic students learning performance and the results showed a positive impact of knowledge management practices and students outcome. The inconsistencies in the literature indicate that there is much to be done on knowledge management and performance (Smith & McKeen, 2016).

In Kenya, public sector loses approximately 66 per cent of core competencies occasioned by attrition of staff or dismissal as well as transfers. This has forced the government institutions including Kenya Ports Authority, to be reliant of leased knowledge from consultants who are costly and in many instances unreliable. Despite the dire need by the public sector establishments to innovate, there is a huge challenge in the Kenyan public sphere in

adopting knowledge management processes (Onyango, 2017).

Knowledge management provides huge benefits to the port distinctive competence despite challenges posed by functional bureaucratic structures. At the Kenya Ports Authority, despite the competitive necessity of embracing knowledge-based practices, the management has found it difficult to transform the port through programs of knowledge management. This has been partly blamed on the long tradition of business success due to its monopoly. Further, the KPA entrenched hierarchical structure bureaucracy proves it difficult for employees to create and disseminate knowledge since there is a one way communication which is in form of instructions emanating from the top (Kanyi&Ndiege, 2019).

Various literatures on knowledge management have been conducted. For instance, Nawaz, Hassan and Shaukat (2016) did a study to investigate the effect of knowledge management on innovation and established a significant relationship. Locally, Wamitu (2017) did a study on tacit knowledge sharing on performance of public sector in Kenya and established that functional boundaries have significant influence on performance. Kanyi and Ndiege (2019) did a study on knowledge management conceptualization model for county governments and established some sporadic nascent knowledge management practices rather than well planned initiatives within the counties. However, the studies failed to examine the knowledge management process capabilities in the perspective of port performance. Reviewed studies have ignored knowledge management practices in the context of ports despite the Kenyan ports been constrained by rigidity and bureaucracy as well as red tapes which inhibit knowledge acquisition and sharing to enhance service delivery (Kanyi & Ndiege, 2019). This literature gap has motivated a study to investigate the effect of knowledge management process capabilities on performance with a focus on Kenya Ports Authority.

## Research Hypotheses

- **HO<sub>1</sub>:** There is no significant effect of knowledge acquisition on performance of Kenya Ports Authority
- **HO<sub>2</sub>:** There is no significant effect of knowledge conversion on performance of Kenya Ports Authority
- **HO<sub>3</sub>:** There is no significant effect of knowledge protection on performance of Kenya Ports Authority
- **HO<sub>4</sub>:** There is no significant effect of knowledge application on performance of Kenya Ports Authority

## RELATED LITERATURE

### Theoretical Review

This section discusses the existing theories on knowledge management practices and how they link with the current study. The theories considered include knowledge based theory, organization learning theory and intellectual capital theory.

### Knowledge Based Theory

The proponent of the Knowledge-based view is Grant in 1996 and it is an extension of the resource-based view of the firm. The theory posits that heterogeneous base of knowledge among entities and their propensity to create and implement knowledge forms the key performance determinants differences (Decarolis& Deeds, 2016). This theoretical concept is of the view that knowledge has a life cycle in terms of its applicability within an organization or at the external environment as professional knowledge. The focus of this study was on the use of knowledge for organizational or internal purposes. The knowledge-based view of the firm grows out of the resource based view of the firm and argues that organizations that have varied sources of knowledge strengthened by ability to generate and utilize knowledge play a key role in how they ultimately perform (Deeds & Decarolis, 2016).

According to this view, its rationale is based on the fact that certain key decisions need to be made by the top management regarding the management of

knowledge. One is on the development of professional knowledge internally and modalities of doing with an option of when it would be desirable to draw upon external expertise (Drucker, 2006, Nonaka & Takeuchi, 2005). Another decision concerns the applicability of the internal and external knowledge when jointly used through consultants. A third could be on how the internal knowledge can be marketed beyond organizational boundaries, (Salina & Wan Fadziilah, 2016). This study focused on how the internal knowledge can be leveraged through the use of communities of practice and knowledge mapping, within a culture and structure that encourages knowledge sharing.

### **Organization Learning Theory**

The proponents of the organization learning theory are Easterby-Smith, Crossan and Nicolini in 2000. The theory places emphasis on the knowledge creation and its application within the boundaries of the organization. Learning organization is typically an organization that aids its members to continuously learn and improve its processes constantly.

The core assumptions of the organization learning theory are that learning takes place when there is an interaction between individuals in the quest for solution search and problem solving. Organizational learning theory places immense emphasis on the significance of building and sustaining the culture of learning within an institution (Serenko, Bontis & Hardie, 2016). The theory argue that an institution should endeavor to cultivate a rewarding culture that rewards sharing of knowledge and learns through lessons that there is a lot to learn in failure and a culture that encourages employees of all cadres to embrace continuous learning and be free to challenge the status quo and existing procedures and processes.

The theory holds that an entity that approaches and accepts the lessons learned from failure and continuously examines its existing processes will eventually emerge as an institution that poses vast knowledge concerning lean practices and will easily be able to adapt to the market dynamics. The organization learning theory supports the knowledge conversion and knowledge acquisition variables in the current study.

### **Intellectual Capital Theory**

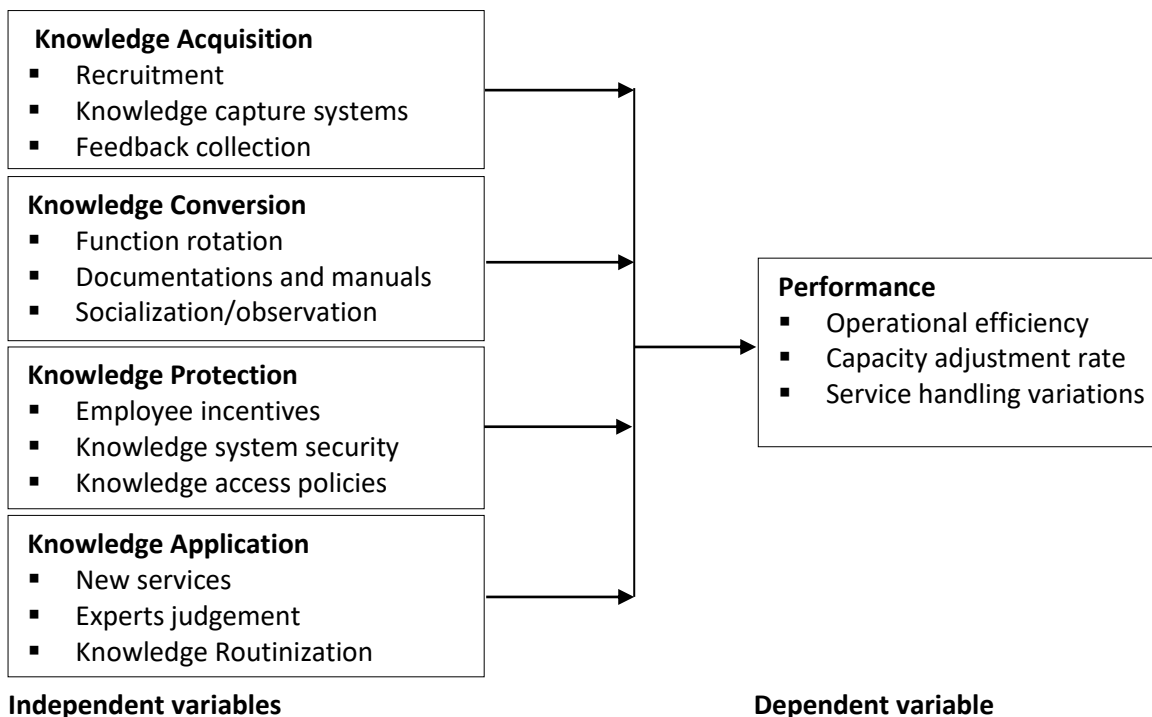
Intellectual capital theory proponent is Becker in 1962 and Rosen in 1976. The theory posits that employees possess skills set which are continuously improved through training and education. The theory emphasizes on the value of knowledge in organizations and distinguishes it from physical capital. The knowledge as an intangible asset is the single most valuable asset in public an service sector far more than physical assets those entities possess and are more likely to offer competitive advantage to the organizations (Roos & Von Krogh, 1996).

Intellectual capital theory approaches the organization difference between the book value of the firm and the possible money to be fetched for the firm as the intellectual capital. The intellectual capital includes patents, personal networks, corporate culture, trademarks, customer loyalty and copyrights, information technology, and employee knowledge. For the purposes of this study, the theory supports knowledge application which stems from employee knowledge and it spirals through employee networks.

### **Conceptual Framework**

The conceptual framework shows the linkage between the independent variables and dependent variable.





**Figure 1: Conceptual framework**

### Knowledge Acquisition

Knowledge acquisition relates to capturing of existing knowledge to improve the firms' ability to attain stated objectives and double on organizational learning (Wamundila, 2016). According to Nonaka and Takeuchi (2016) the knowledge stock level in an organization is increased through acquisition of new knowledge. Lyles and Salk (2016) proved empirically the existence of a significant relationship between knowledge acquisition and performance which was positive. Public institutions and county governments acquire knowledge through recruitment best human resource, training existing staff and developing human resource and after action reviews (Wamundila, 2016).

According to Me and Abdela (2016) literature demonstrate that information obtaining and learning to share inside of an association brings about the improvement of efficiency. Likewise, the geographic area of a firm which is vital for information stream 22 is an essential benefactor to association's performance. Ahmed, Fiaz, and Shoaib (2015) alluded that if organization's authoritative

segments possess focal system positions which encourage access to crisp learning built up by different divisions performance can be upgraded. By the same token Me and Abdela (2016) argued that literature demonstrates that learning obtaining and information sharing inside of an association brought about the improvement of profitability. In the above view, it can be assumed that knowledge acquisition has a positive impact on organizational performance.

### Knowledge Conversion

A process model of knowledge creation develops on the critical presupposition that individual knowledge is created and enlarged by means of a social interaction between tacit and explicit knowledge. This interaction is called knowledge conversion. Knowledge conversion is made conceivable through the strategies and exercises of blend, refinement, joining, mix, coordination, appropriation, and rebuilding of learning (Ayub, Hassan, Hassan & Laghari 2016). This process enables a firm to make individual knowledge useful to the company by converting personal knowledge into firm knowledge.

Many organizations use the knowledge asset of customers, employees and suppliers obtained through research and brainstorming to create knowledge (Moodysson, 2017). Knowledge creation also refers to acquisition of tacit knowledge, intuitions, insights of an individual employee (Nonaka, 2016). Knowledge creation produces novel ideas which give rise to development of new concepts. This calls for a higher hierarchical sanction to ensure created knowledge is effectively distributed to all employees in the organization.

In ports and other public institutions, knowledge is created from the procedures and processes followed in the public services provision to the public. The implicit knowledge can be tapped from employees who command expertise in various specializations. Explicit knowledge refers to knowledge with the capability of been collected and noted down in many forms such as databases and records. An organization must build up a system for sorting out or organizing its information since, without basic portrayal guidelines, no consistency or recognizable exchange of learning would exist. As indicated by Ayub et al., (2016), the essential objective of any association ought to be to incorporate particular information of numerous people. Four regularly referred to systems for encouraging coordination are standards and orders, sequencing, schedules, and gathering critical thinking and basic leadership.

### **Knowledge Protection**

Nowadays, organizations increasingly pay attention to protecting their data and information but at the same time the protection of their knowledge is neglected or underdeveloped in many cases. To maintain an organization's competitive advantage, organisational risk management should pay more attention to the protection of knowledge. Organizational risk management should not only rely on protecting data and information but also on protecting knowledge which is underdeveloped in many cases or measures are applied in an uncoordinated, dispersed way (Nawaz, Hassan, & Shaukat, 2016).

Knowledge protection, as one of the three central organizational knowledge management strategies amongst knowledge creation and knowledge transfer (Bloodgood et al. 2016), is a firm's efforts to prevent knowledge "from being altered, transferred to other organizations, lost, or becoming obsolete". Neglecting knowledge protection can reduce competitive advantage or cause replication of ideas by external organizations. Hence, finding a balance between protecting and sharing knowledge is crucial to solve the boundary paradox.

### **Knowledge Application**

Knowledge application refers to timely reaction of an organization to changes of technologies by adopting generated knowledge to its offerings (Song, Bij & Weggeman, 2016). It is the actual application of knowledge with a view to solve existing challenges in the organization (Alavi & Tiwana, 2017). Huang and Li (2016) posit that effective application of knowledge enhances capabilities of an organization to manage other sources of knowledge and achieve distinctive competence.

Delen, Zaim, Kuzey, and Zaim (2017) noted that the successful use of information had helped firms to enhance their proficiency and diminish costs. Learning application likewise encourages an organization to upgrade its business execution by having up and coming data and information. Knowledge application worries with how to use information to create business esteem since learning must be acknowledged when it is connected to tackle issues (Evans, Dalkir, & Bidian, 2015).

Chong and Choi (2016) posit that the transformation of knowledge into action is by embedding the knowledge in the processes and procedures of the organization and decision making to ensure its exploitation and usage (Zack, 2017). The review of new knowledge is significant in making sure that the new knowledge maintains its relevance and usefulness (Debowski, 2016). Knowledge of an organization should be

implemented in the processes and services of the organization. A study by Muhoya (2016) on knowledge management practices and audit firms' performance established that knowledge implementation and subsequent application affects audit firms' performance.

### Performance

Organizational performance can be evaluated by quality service and products, satisfying customers, market performance, service innovations, and employee relationships (Dess & Robinson, 2016). The author also state that organizational performance is based on balanced scorecard, stated that organizational performance can be appraised by return of investment, margin on sales, capacity utilization, customer satisfaction and product quality. In the same way, Richard, Devinney, Yip and Johnson (2015) identified that return on investment, sales and market growth, and profit are important factors that be measured by organization performance.

Organizational performance is generally assessed with financial indicators such as return on investment or profit per share. Morin (2017) indicates that organizational performance are based on indicators such as return on investments, sales, profit per share Nevertheless, an organization has many other facets; among them are the people who work for it, the processes they use to achieve its objectives, and the environment in which the organization evolves. Kaplan and Norton's (1992) Balance Scorecard includes financial and non-financial indicators of four main organizational facets: financial, costumers, internal processes and innovation and improvement. In this case of the current study, performance will be measured by the metrics of operational efficiency, capacity adjustment rate and service handling variations.

### METHODOLOGY

Research design is collection of data and the process of analyzing collected data (Mugenda & Mugenda, 2012). The study employed cross-sectional research design. The choice of the

research design was motivated by the capability of the design to offer practical framework for accessing large groups to sample its ability to provide reliable data (Kothari, 2014).

Target population comprises of the total group of individuals or events who share similar feature and attributes that are observable and measurable (Kothari, 2014). The current study targeted top and middle management staff of Kenya Ports Authority, Kilindini in Mombasa County. The sampling frame of the study was top and middle management staff of Kenya Ports Authority in Mombasa County.

Sampling was done through purposive sampling which is an appropriate non-probability sampling method if the units being investigated are based on the judgment of the researcher and focuses on particular characteristics of a population. Kothari (2014) notes that purposive sampling is the rationale for undertaking case study research.

Cooper and Schindler (2013) posit that sample size is a representative of the population. In this study Yamane 1967 mathematical formula was adopted to select an appropriate sample size from a finite population.

$$n = \frac{N}{1 + N(\alpha)^2} = \frac{517}{1 + 517(0.05)^2} = 400$$

Where:

N = Total population

n = Sample population

$\alpha$  = Sampling error which is 0.05(95% confidence level).

The data collected was coded and analyzed using descriptive statistics and inferential statistics as data analysis techniques. The study generated both descriptive statistics and inferential statistics. Descriptive analysis on collected primary data was done to give mean and standard deviation to be adopted as central tendency measures and measures of dispersions respectively. Inferential statistics involved regression analysis and correlation analysis. Analyzed data was presented in frequency distribution tables so as to make it easy for research results description and explanation.



The data analysis tool used in the study was Statistical Package for Social Sciences (SPSS version 25).

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \epsilon$$

Where:

Y is port performance

$\alpha$  is regression constant

$\beta$  is regression coefficients

$X_1$  is knowledge acquisition

$X_2$  is knowledge conversion

$X_3$  is knowledge protection

$X_4$  is knowledge application

$\epsilon$  is error term

## FINDINGS

### Knowledge Acquisition

The first objective of this study was to determine the extent to which knowledge acquisition affects organizational performance. In order to achieve this objective, respondents were required to indicate the extent to which they had adopted selected knowledge acquisition on a five-point Likert scale where 1 represents strongly disagree and 5 represents strongly agree. The results were discussed in Table 1.

**Table 1: Knowledge Acquisition**

	Mean	Std deviation
The port recruits educated and experienced employees to aid in knowledge acquisition	4.73	.340
The port offers on job training on its employees to let them acquire knowledge	4.50	.536
The port has put a mechanism to collect customer feedback	4.01	.642
The institution has designed expert systems which aid in acquisition of knowledge	4.60	.206
There is research and development spirit in the port to produce knowledge	2.74	.741
Databases of good practices are updated regularly	4.80	.528

The results in Table 1 showed that respondents agreed that the port recruits educated and experienced employees to aid in knowledge acquisition and that the port offers on job training on its employees to let them acquire knowledge as indicated by a mean of 4.73 and mean of 4.50 respectively. Respondents also agreed that the port has put a mechanism to collect customer feedback (mean=4.01) and that the institution has designed expert systems which aid in acquisition of knowledge (mean=4.60). Respondents disagreed to the assertion that there is research and development spirit in the port to produce knowledge (mean=2.74), however, respondents

agreed that port databases of good practices are updated regularly (mean=4.80).

### Knowledge Conversion

The second objective of this study was to determine the extent to which knowledge conversion affects organizational performance. In order to achieve this objective, respondents were required to indicate the extent to which they had adopted selected knowledge conversion on a five-point Likert scale where 1 represents strongly disagree and 5 represents strongly agree. The results are discussed in Table 2.

**Table 2: Knowledge Conversion**

	Mean	Std. Deviation
Employees in the port learn through observation i.e. socialization	4.32	.549
To ensure conversion of knowledge, port employees rotated in various functions	4.15	.334
Employees learn new ideas from documents and manuals	4.69	.509
Port employees are incentivized to internalize new knowledge	3.13	.822

The results in Table 2 showed that respondents agreed that employees in the port learn through observation i.e. socialization and that to ensure conversion of knowledge, port employees are rotated in various functions as indicated by a mean of 4.32 and mean of 4.26 respectively. However, respondents disagreed that employees learn new ideas from documents and manuals (mean=4.69). Respondents were indifferent to the statement that Port employees are incentivized to internalize new knowledge(mean=3.13).

### Knowledge Protection

The third objective of this study was to determine the extent to which knowledge acquisition affects organizational performance. In order to achieve this objective, respondents were required to indicate the extent to which they had adopted selected knowledge acquisition on a five-point Likert scale where 1 represents strongly disagree and 5 represents strongly agree. The results are discussed in Table 3.

**Table 3: Knowledge Protection**

	Mean	Std. Deviation
The organization have adequate knowledge access policies to protect knowledge	4.13	.882
In the port, knowledge is protected by putting strong firewalls in the information systems	4.20	.887
The organization has knowledge protection maps	4.82	.883
There is employee awareness of knowledge protection through incentives	4.89	.881

The results in Table 3 showed that respondents agreed that the organization have adequate knowledge access policies to protect knowledge and that in the port, knowledge is protected by putting strong firewalls in the information systems as indicated by a mean of 4.13 and mean of 4.20 respectively. Respondents also agreed that the organization has knowledge protection maps (mean=4.82) and that There is employee awareness of knowledge protection through incentives (mean=4.89).

### Knowledge Application

The fourth objective of this study was to determine the extent to which knowledge application affects organizational performance. In order to achieve this objective, respondents were required to indicate the extent to which they had adopted selected knowledge application on a five-point Likert scale where 1 represents strongly disagree and 5 represents strongly agree. The results are discussed in Table 4.

**Table 4: Knowledge Application**

	Mean	Std. Deviation
The port adopts new Knowledge in innovating new services	3.92	.556
The knowledge is adopted to address service delivery challenges	4.70	.748
The port employees are encouraged to utilize knowledge to solve work related problems	4.96	.741
The port utilizes experts judgment	4.64	.756
Employees adhere to rules in the organization	4.44	2.95

The results in Table 4 have revealed that respondents agreed that the port adopts new Knowledge in innovating new services and that the knowledge is adopted to address service delivery challenges as indicated by a mean of 3.92 and mean of 4.70 respectively. Respondents also agreed that the port employees are encouraged to utilize knowledge to solve work related problems (mean=4.96) and that the port utilizes expert judgment (mean=4.64). Respondents also agreed

that port employees adhere to rules in the organization as shown by a mean of 4.44.

### Correlation Analysis

Correlation analysis was done to determine the extent and size of the association between knowledge management process capabilities and organizational performance using the Pearson's product moment correlation analysis. The results were shown in Table 5.

**Table 5: Correlation Coefficient**

		KA	KC	KP	KA	OP
Knowledge acquisitions	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	358				
Knowledge conversion	Pearson Correlation	.296**	1			
	Sig. (2-tailed)	.000				
	N	358	358			
Knowledge protection	Pearson Correlation	.504**	.776**	1		
	Sig. (2-tailed)	.000	.000			
	N	358	358			
Knowledge application	Pearson Correlation	.361**	.487**	1		1
	Sig. (2-tailed)	.000	.000			
	N	358	358	358		
Organizational performance	Pearson Correlation	.607**	.598**	.384	.584	1
	Sig. (2-tailed)	.000	.000	.000	.038	

\*\* . Correlation is significant at the 0.01 level (2-tailed).

From the correlation results, knowledge acquisition was found to be favorably and strongly correlated to organizational performance, as shown by the bivariate correlation data in Table 5. This is supported by a correlation coefficient of 0.607 and a p-value of 0.000. As evidenced by a r of 0.598 and a p-value of 0.05, the bivariate correlation between knowledge conversion and organizational performance was determined to be both significant and positive. Moreover, there was a substantial and

positive bivariate connection between knowledge protection and organizational performance (r=0.384, p=0.000). Knowledge application and organizational performance was found to have a substantial and positive bivariate connection (r=0.584, P=0.038).

### Multiple Regression Analysis

A regression model was adopted in the study to establish the statistical relationship between the independent and the dependent variables.

**Table 6: Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.695 <sup>a</sup>	.483	.413	1.00749

a. Predictors: (Constant), Knowledge acquisition, Knowledge conversion, Knowledge protection, Knowledge application

The regression results in Table 6, showed a moderate regression between the study variables. In the model summary, the R<sup>2</sup> is 0.483 indicating

that predictors explain 48.3 per cent change in port performance.

**Table 7: Analysis of Variance**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2187.163	4	546.790	6.632	.000 <sup>b</sup>
	Residual	2341.107	353	61.608		
	Total	4528.270	357			

a. Dependent Variable: Performance

b. Predictors: (Constant), Knowledge acquisition, Knowledge conversion, Knowledge protection, Knowledge application

From the ANOVA results in Table 7, it was established that the significance value in testing the reliability of the model was obtained as 0.001 which is less than 0.05, the critical value at 95%

significance level. Therefore, the model is statistically significant in predicting the relationship between the study variables.

**Table 8: Regression Coefficients**

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	9.395	2.158		4.353	.000
Knowledge acquisition	.459	.201	.228	2.283	.001
Knowledge conversion	.375	.157	.099	2.388	.043
Knowledge protection	.523	.218	.492	2.399	.000
Knowledge application	.410	.195	.235	2.103	.000

a. Dependent Variable: Performance

The derived regression coefficients of the model are:

$$Y = 9.395 + .459X_1 + .375X_2 + .523X_3 + .410X_4$$

The regression results showed that independent variables had significant value below 0.05 meaning that they were all significant. From the results, it showed that holding all factors constant at zero, the change in port performance would be 9.395. Further, the regression results showed that a unit change in knowledge acquisition would lead to 0.459 unit change in port performance. A unit

change in knowledge conversion would lead to 0.375 unit change in port performance. Further, a unit change in knowledge protection would lead to 0.523 unit change in port performance and finally, a unit change in knowledge application would lead to 0.410 unit change in port performance.

### Discussion of Key Findings

The regression coefficients served as the foundation for fulfilling the study's goals. This was achieved by considering the P-values that are associated with the relevant regression coefficients and t-values, as

shown in the findings. The initial goal of the study was to find out how knowledge acquisition affects organizational performance at the port of Mombasa. The regression results for knowledge acquisition was  $\beta_1=0.459$ ,  $t=2.283$ , and  $p<0.05$  showing that there was a favorably significant relationship between knowledge acquisition on organizational performance. A unit increase in knowledge acquisition would result in a 0.459 change in organizational performance, according to the study's findings. The null hypothesis that knowledge acquisition has no meaningful effect on organizational performance is rejected since the p-value is less than 0.05.

The second goal was to determine how knowledge conversion affects organizational performance. According to the regression analysis's findings ( $\beta_2 = 0.375$ ,  $t=2.388$ ,  $p<0.05$ ), knowledge conversion significantly affects organizational performance. According to the study, an increase in knowledge conversion leads to a 0.375 improvement in organizational performance. The null hypothesis that knowledge conversion has no meaningful effect on organizational performance is rejected since the p-value is less than 0.05.

The third objective was to investigate the effect of knowledge protection on organizational performance. According to  $\beta_3 = 0.523$ ,  $t=2.399$ , and  $p<0.05$ , the regression analysis results showed a substantial positive relationship between knowledge protection and organizational performance. According to the findings, an increase in knowledge protection will improve organizational performance by 0.523 units. The null hypothesis that knowledge protection has no meaningful effect on organizational performance is rejected since the p-value is less than 0.05.

The study also aimed to determine how knowledge application affects organizational effectiveness. According to regression analysis, knowledge application and organizational performance have a significant positive connection ( $\beta_4 = 0.410$ ,  $t=2.103$ , and  $p<0.05$ ), which means that adding one more knowledge application would result in an increase

in organizational performance of 0.410. The null hypothesis that knowledge application has no meaningful effect on organizational performance is rejected since the p-value is less than 0.05.

## CONCLUSIONS AND RECOMMENDATIONS

The study concludes that only educated and experienced employees are contracted by the port of Mombasa to aid in knowledge acquisition. In addition, the port offers on job training on its employees to let them acquire knowledge and the port has put a mechanism to collect customer feedback and that the institution has designed expert systems which aid in acquisition of knowledge. However, the port of Mombasa was found to lack robust research and development spirit in the port to produce knowledge but on the brighter side, the port of Mombasa keeps track of good practices in its database which is up to date.

The analysis comes to the conclusion that employees in the port learn through observation i.e. socialization and that to ensure conversion of knowledge, port employees are rotated in various functions. The study concludes that the documents and manuals do not offer new ideas to the port employees. However, it is concluded that the employees of the port of Mombasa are motivated to internalize new knowledge through incentive programs.

The study comes to the conclusion that the port of Mombasa has adequate knowledge access policies to protect knowledge. Further, it is concluded that knowledge is protected by putting strong firewalls in the information systems and the port has knowledge protection maps. The port creates awareness of knowledge protection to employees by offering monetary and non-monetary incentives.

The study comes to the conclusion that the port adopts new knowledge in innovating new services and that the knowledge is adopted to address service delivery challenges. It is concluded that the port employees are encouraged to utilize knowledge to solve work related problems and that the port utilizes expert judgment. Further, the study



concludes that employees of the port adhere to rules in the organization.

The study recommends that the port of Mombasa management should engage educated and experienced employees so as to aid in knowledge acquisition within the port. Also the port management should provide robust job training on its employees as a means to acquire new knowledge and the port should put a mechanism to collect customer feedback which in turn should be converted to knowledge for the port consumption. The expert systems should be implemented as an aid in acquisition of knowledge. The port should build and inculcate research and development spirit so as to produce knowledge as it was found to be lacking. The port management should install databases to keep track of good practices hence serve as a source of knowledge.

The study recommended that the port management should encourage its employees to learn through observation i.e. socialization and that to ensure conversion of knowledge, port employees should be rotated in various functions. The study recommends that the documents and manuals should be tailored as to offer new ideas to the port employees and employees should be incentivized to internalize new knowledge.

The study recommended that the port of Mombasa management should come up with adequate knowledge access policies to protect knowledge

from evaporating and if need be, the acquired knowledge should be protected by putting strong firewalls in the information systems. The port management should develop knowledge protection maps and should continuously create awareness of knowledge protection to employees by offering monetary and non-monetary incentives.

The study recommends that the port adopts new knowledge in innovating new services and that the knowledge should be adopted to address service delivery challenges. It is recommended that the port employees should be encouraged to utilize knowledge to solve work related problems and that the port should make use of expert systems for knowledge. Further, the study recommends that employees of the port of Mombasa should be motivated to follow laid down rules and regulations.

#### **Suggestions for Further Research**

The scope of this study was restricted to organizational performance and knowledge management process capabilities in the port context. Nonetheless, the researcher advises that further research be done on other knowledge management process capabilities that can affect organizational performance not only in the port context but other industries since only 48.3% of the results were explained by the independent variables in this study. Additional research could concentrate on different industries, as manufacturing firms and financial institutions.

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