Mediating Role of Learning Performance in The Relationship Between Learning Processesand Competitive Advantageof State Corporations InKenya

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***Abstract*-**Despite overwhelming theoretical propositions that organizational learning is strong positive determinant of competitive advantage, little empirical work exists to substantiate these theoretical suggestions.The few empirical studies available have not shown the role that learning performance plays in the attainment of competitive advantage. The relative absence of empirical research does not persuade leaders, managers and employees to adopt learning initiatives or measure learning performance.This study examined the mediating role of learning performance learning in the relationship between learning processes and competitive advantage amongstate corporations in Kenya.The study employed a descriptive, cross-sectional research designand used both quantitative and qualitative methods to gather data from 198 staff from 35 state corporations comprising of senior managers, middle manager and non-management staff. Regression analysis was used to make inference on the associations between the dependentand independent variables using SPSS Version 22. Structural Equation Modeling (SEM) helped assess the mediating role of learning performance. Results from both simple and multiple linear regression revealed that each of independent variables was positively mediated the relationship between systems thinking and competitive advantage and learning processes and competitive advantage. Both formal and informal learning processes that maximize utilization-focused knowledge acquisition and sharing approach are encouraged. Organizations are encouraged to invest in building capacity of new and existing employees to encourage reflective practices within the organization. Leaders are encouraged to overcome barrier to creating and utilizing learning processes in organizations. Organizations need to increase rate of single loop and double loop learning to increase chances of attaining competitive advantage.

***Index Terms*-** Organizational Learning, Learning Processes, Competitive Advantage, Learning Performance

I. INTRODUCTION

Organizational learning is largely theorized for its role in improving performance and competitiveness of organizations. Senge (1990) argued that the speed of organizational learning may become the only sustainable source of competitive advantage in the future. Garvin, Edmondson, & Gino, (2008) concurred by noting that higher rate of learning is positively associated with competitive advantage. In essence, a learning organization purposefully designs and constructs its structure, culture and strategy to enhance and maximize the potential for organizational learning to take place (Dodgson, 1993; Fang et al.,2010). Learning organizations are seen to adapt to unpredictable environments more quickly than their competitors. “how difficult the learning process is, even with built-in intent (Kransdorff, 2006)”. Organizational Learning efforts are no longer merely an option but rather a core necessity for organizations anywhere in the world (Singh and Kant, 2008).

Empirical studies have demonstrated the significant role that learning processes plays in fostering performance in various industries and sectors. For example, the public sector (Ferguson et al., 2013), non-governmental organizations (Corfield et al., 2013), banking industry, (Oluikpe, 2012), small- to medium-sized enterprises, (Durst and Edvardsson, 2012), manufacturing organizations (Birasnav and Rangnekar, 2010), and human service and professional services firms (Palte et al., 2011); and life insurance business (Huang et al., 2011). These studies have clearly shown that learning is an important determinant of organizational success measured by superior performance and competitive advantage. Other studies have shown that organizational learning processes are important parts of the innovation processes and organizational performance (Kiziloglu, 2015).Slater &Narver, (1995), in turbulent markets, organizations must use learning processes to create behavior change that leads to performance improvement. Chandler & Hwang, (2015) notes that being able to understand the detail the innovation, as well as the implications of adoption require a complex range of learning processes that drive organizational adoption behavior. Search for innovative practices are more successful through more active learning processes.

Despite the clarity and consensus that organizational learning processes is associated with performance and competitive advantage, learning practices are still weak among organizations, particularly for state corporations. This low adoption is partly due to gaps in previous studies which have not sufficiently furnish managers with concrete suggestions on how to entrench learning processes within the organization(Bapuji&Crossan, 2004).Furthermore, the studies have targeted the partial audience by focusing only chief executives and excluded departmental managers and non-managerial staff. Notably, state corporations have been left out of most research even though they are tasked to drive economic growth in highly dynamic and unpredictable environments, that requires them to compete. therefore, this study aims to contribute to the literature by examining the relationship between organization learning processes and

competitive advantage. It will build of the work of other authors, (Garvin et al., 2008; P. Senge, Art, & Roberts, 2001; P. M. Senge, 1990), by exploring the pathway taken by organizational learning processes to influence competitiveness of state corporations. The study addresses the following objectives:

a) To examine the effectiveness of learning processes in fostering competitive advantage?
b) To assess mediating role of learning performance in the relationship between organizational learning and competitive advantage?

This paper follows the following structure: Section 2 presents literature reviewed and research hypotheses. Section 3 contains research methodology to test hypotheses and sets results of data analyses. Section 4 brings together the implications, limitations, and directions for future research.

II. LITERATURE REVIEW

2.1. Theoretical Review

2.1.1. Competitive Advantage

Rationale for state corporations to seek and gain competitive advantage is deeply rooted in the dynamic and challenging environment under which they operated.Increasing, state corporations are facing fierce competition from each other, and from a vibrant and innovation-minded private and civil society organizations(Buheji, n.d.). A highly educated and quality driven public continues to demand more efficient and effective goods and servicesfrom all business actors in equal measure. The legal and political environment has become less favorable for state corporations as they no longer operate as monopolies. They compete under relatively the same legal context as the private and civil society sectors.

Furthermore, the perception or negative reporting on corruption has worsened among public institutions during the past decade making it difficult for state corporations to assure the public of quality services and fair cost. For example, in 2016 Kenya was ranked 139 out of 168 indicating a high perception of bribery within the country. These corruption perception indices further erode public trust and complicate efforts of state corporations to grow their market share. These circumstances have triggered state corporations to actively engage in the search of a solution that will accord them a competitive advantage to guarantee their success in the market place.

In pursuit of competitive advantage, researchers offer useful theoretical propositions. The resource-based view theory of competitive advantage posits that firms are bundles of resources and capabilities and that a firm can gain competitive advantage based on its unique set of resources (Barney, 1991). Those resources are valuable, rare, perfectly inimitable and non-substitutable and a firm's potential for competitive advantage also requires a firm be organized to exploit its resources and capabilities (Barney, 2007). The fact that resources must enable the creation of value and must also resist the duplicative efforts of competitors suggests that firms are bundles of resources and capabilities. In conditions of open competition, rival firms will seek to imitate, acquire or try to substitute for the resources that are a source of advantage. Organizations facing uncertain, changing or ambiguous market conditions similar to those experienced by state corporations need to be able to learn. Theories posit that organizational learning can help firms amass and use these kinds of resources and capabilities. For example, Karash (2002) identified the organizational learning concept as a resource-oriented approach that is based on the ability of the organization to turn standard resources that are available to all into competences that are unique and non-imitable by competitors.

2.1.2. Organizational Learning

The concept of organizational learning is a well-researched topic in a range of academic disciplines from economics, management science, psychology and sociology to anthropology (Easterby-Smith and Lyles, 2011). Senge, (2006) describes organizational learning as 'the changing of organizational behavior' which occurs through a collective learning process. Organizational learning is a unique resource that is critical in today's dynamic and discontinuous environment of change and a crucial determinant of competitive advantage (Garvin, Edmondson, & Gino, 2008). Organizational learning emphasizes the development and application of new knowledge that has the potential to change employees' behavior which is ultimately tipped to strengthen the organization's competitive position. A learning organization uses management philosophy based on knowledge and understanding, as opposed to fear, for the complexity of the real world. Therefore, organizational learning has the potential to promote a sense of empowerment in the workforce that motivates them for continuous learning (Bryson et al., 2006).

For learning to be fully entrenched in the organization, it has to happens at multiple levels. Argyris and Schön, (1978) notes that organizations learn through individuals acting as agents for them and individuals' learning activities, which in turn are facilitated or inhibited by an ecological system of factors. Gareth Morgan, (1986) points out that organizations cannot, themselves, learn; it is the individuals within them who learn. Evidently, there is more to a learning organization than simply a collection of individuals who are learning. Swieringa and Wierdsma (1992) define organizational learning as 'the changing of organizational behavior' which occurs through a collective learning process. They note that individual learning is a necessary but not a sufficient condition for organizational learning. Learning organizations are organized in such a way that learning is a prominent feature at a number of different levels: individual learning; team or work group learning; cross-functional learning; operational organizational learning; and strategic organizational learning (Britton, 1998).

Organizational learning manifests itself in various ways depending on the focus of learning. Single loop learning focuses on fixing errors in the current system while double loop learning which goes a level here to question the policies and procedure rather than focusing only on error correction (Linz & Resch, 2010; Witherspoon, 2014). Single-loop learning involves

detecting and correcting 'errors' so that the organization can continue to achieve its present policies or objectives in more efficient ways. In single-loop learning, outcomes are measured against organizational norms and expectations. According to Senge, (1990), Single-loop learning focuses on doing things in the right way without necessarily questioning whether they are the right things to be done. It explores more productive ways, doing it cheaper, using alternative methods or approaches for the same objectives. On the other hand, double loop learning not only requires changes in the rules and procedures of the organization but may also question the underlying assumptions and principles that form the basis of the rules and procedures. The implications of double loop learning are possibly far-reaching and may even lead to what has been called triple loop learning which involves challenging the organization's principles and assumptions, requiring an open and often robust exchange of views (Peeters & Robinson, 2015).

2.1.3. Relationship Between Learning Processes and Competitive Advantage

A learning organization is cultivated through a series of concrete steps and widely distributed activities, (Sokhanvar, Matthews, &Yarlagadda, 2014). Theorists have made efforts at explicating the learning processes essential to influencing learning and attaining competitive advantage. Garvin et al., (2008) consider learning processes to involve the generation, collection, interpretation, and dissemination of information. Learning processes include experimentation to develop and test new products and services; intelligence gathering to keep track of competitive, customer, and technological trends; disciplined analysis and interpretation to identify and solve problems; and education and training to develop both new and established employees. USAID, (2016) presented a more comprehensive model, collaborating learning and adapting (CLA) model, which considers learning processes to include knowledge management, institutional memory and decision making. According the CLA model, KM processes include the process of acquiring knowledge internally and externally, distilling the knowledge and sharing knowledge internally and externally. Institutional memory includes the processes of accessing institutional knowledge, and managing of staff transitions. Decision-making include the awareness of decision-making processes, autonomy to make decisions and appropriate stakeholder involvement in decision making processes.

Empirical studies have been conducted and shown results in support of theory. Due to globalization and growing competition, organizations are using learning processes to achieve competitive advantage (Mahajan &Chaturvedi, 2013). Learning processes ensure that an organization and employees continually create, acquire, and transfer knowledge and use it to adapt to the ever-changing internal and external environment.To achieve maximum impact, Garvin, (2008) suggests that knowledge should be shared in systematic and clearly defined ways among individuals, groups, or whole organizations. Knowledge can move laterally or vertically within a firm. By implementing knowledge management processes as part of daily business activities, organizations can confidently compete and sustain in the competitive markets (Daud and Yusuf, 2008).Sangari, Hosnavi, & Zahedi, (2015)results also showed that knowledge management processes have a significant impact on supply chain performance.Other studies found a positive relationship between organizational learning processes and business performance (Vijande, Pérez, González, &Casielles, 2005).Considering the theoretical underpinning and the empirical support, the study predicts that learning processes will have a positive effect on competitive advantage of state corporations. The study poses the following hypotheses:

H_{o1}: There is no relationship between learning processes and competitive advantage of state corporations in Kenya.

2.1.4. Mediating Effect of Learning Performance

Organizational learning has gained prominence among researchers as a crucial determinant of performance and a source of sustained competitive advantage for organizations, (Linz & Resch, 2010; Salmador&Florín, 2012). A learning organization is seen to be an organization, which is 'skilled at creating, acquiring, and transferring knowledge, and at modifying behavior to reflect new knowledge and insights.' Learning happens when errors are detected and corrected, and practices changed within the organization, (Peeters& Robinson, 2015; Witherspoon, 2014).

Organizational learning performance is measured by assessing the rate of learning which refers to the frequency at which the organizations take decisions address their challenges in alignmentto new knowledge and insights. This study will look at decisions or actions at two levels: Single loop learning, which occurs when the mismatch gets corrected by altering behavior or actions and double loop learning, which happens when the organizations change their underlying values and adopts new actions, (Mitchell et al., 2012). Single loop is about efficiency and answers the question, are we doing things in the right way? In single-loop learning, outcomes are measured against organizational norms and expectations (Peeters& Robinson, 2015). The overwhelming amount of learning in organizations is single-loop because organizations are designed to identify and correct errors, (Witherspoon, 2014). On the other hand, double loop is concerned with effectiveness and answers the question, are we doing the right things? Learning performance is predicted to be higher among organizations that have entrenched a strong learning culture. The rate at which organizations apply both single-loop and double-loop learning are expected positively to mediate the relationship between the combined effect of the independent variables and competitive advantage, (Peeters& Robinson, 2015).

Even though empirical studies have had limited focus in assessing the Learning performance in organizations, various authors have conducted useful studies in laying the foundation. Sorenson (2003) found that interdependence engendered by vertical integration slowed the rate of learning in firms in stable environments and speeded learning in volatile environments. Lieberman (1984) found that investment in Research and Development increased the rate of learning among firms in the chemical processing industry. Similarly, Sinclair, Klepper, and Cohen (2000) found that Research and Development contributed

to the productivity gains observed in a chemical firm. Social capital is an important factor that affects the organizational learning performance (Wu, Ay, & Lien, 2009). Based on findings from self-regulated learning research that control of learning and learning orientation are positively related to learning performance (Boekaerts&Corno, 2005). Even though authors have suggested firms that learn faster than others are likely to gain competitive advantage, there is limited research that have assessed this hypothesized mediating role learning performance on the achievement of competitive advantage(Garvin et al., 2008; Senge, 2006). In line with the identified research gap, the study will test the mediating role of learning performance through the following null hypotheses:

H_{o2}: Learning performance does not mediate relationship between learning processes and competitive advantage of state corporations in Kenya.

III. RESEARCH METHODS

3.1. Research Design

The study employed descriptive and cross-sectional research design to address the research questions. Descriptive designsprovide answers to the questions of who, what, when, where, and how they are associated with a particular research (Cooper & Schindler, 2008; Saunders et al., 2015). To evaluate the relationships between the learning performance and competitive advantage, the study employed a correlational design. This type of design is recommended and has been used by various authors to determine whether or not variables are correlated by studying the joint variation of the hypothesized relationships, (Džini, 2015; Reich, Gemino, & Sauer, 2014; Saunders et al., 2015).

3.2. Target Population and Sample

The studypopulation comprised of all 139 state corporations operating in Kenya as identified by that state corporations' advisory committee (SCAC). The SCAC is the official body mandated to advise on all matters pertaining state corporations by section 27 of the State Corporations Act, Chapter 446, (Government of Kenya, 2012, 2015). From the list of 139 state corporations, 53 fulfilled the selection criteria (operating in a competitive landscape, selling goods or services public, and mandated to make profits or surplus). Sample size determination formula by Cochran (1977), and procedures for categorical data was used to calculate a sample sizeof 40 state corporation.Table 3.1 shows the population, sampled organizations and number of staff targeted by sector. Three staff were targeted from every state corporation including one senior manager, one middle level manager and one non-management staff leading to a total of 240 staff.

Table 1**:** Population and Sample

Sector	**Population**	**Sample**	**Staff**
Finance	9	7	42
Tertiary Education and Training	5	4	24
Public Universities	7	5	30
Commercial and Manufacturing	32	24	144
Total	**53**	**40**	**240**

3.3. Data Collection Instruments

Twoinstruments were used to collect data from the study respondents;semi-structured questionnaire, and qualitative interview guide. A semi-structured questionnaire gathered data on the dependent variable (competitive advantage), independent variables (learning culture, learning processes and systems thinking). The qualitative interview gathered in-depth information from the 16 employees on the existing leadership and management practices and their implication for organizational culture, learning performance and competitive advantage within state corporations. Furthermore, the researchers reviewed available state corporation records including fiscal year audited reports of 2013, 2014 and 2015 and organization's annual progress reports. These documents helped to provide additional triangulation information on profitability, sales growth, operating context as well performance trends of the state corporations.

3.4. Statistical Measurement Models

Pearson's correlation analysis was used to assess linear relationships between the independent variables and competitive advantageSaunders, Lewis, & Thornhill., (2015). To examining the effect of organizational learning on competitive advantage, step-wise multiple regression models which is commonly used to measure the linear relationship that exists between variables was used (Kanji, 2006). This was done by assessing the role of each of the independent variable on competitive advantage.To test the mediation hypotheses, the study employed structural equation modeling (SEM), which comprised of confirmatory factor analysis and a series of multiple regression equations(Kothari, 2004). For the structural equation model, the study examined two level of analysis – the measurement model and the structure model using Statistical Package for Social Scientists (SPSS) and Amos.

3.5. Measures

The study drew items from different studies from the literature review to measure the constructs for the independent variables.The study adapted scales from various researchersto design the learning processes variable (Donate & Sánchez de Pablo, 2015; Garvin et al., 2008; María Martínez-León & Martínez-García, 2011). The final scale comprised of 11 items assessing processes for generating, collecting, interpreting, and disseminating information; experimenting with new offerings; identifying and solving problems and developing employee knowledge, skills and attitude.

To measure the hypothesized mediating variable, learning performance, the study build on the work of Andreou, Louca, & Petrou, (2016), who measured learning performance by looking at the mode of diversification as an indicator of resource relatedness; internal growth versus acquisition and Witherspoon (2014) who assessed double loop and single loop learning in the various organization. In this regard, learning performance was

measured by assessing the rate of learning within state corporation. Rate of learning comprised of frequency with which state corporations closed feedback loops using knowledge acquired from formal and informal feedback processes. The actions and decisions included selling products and services more efficiently, using alternative approaches to offer same products and services, modifying rules and policies, creative and innovative products and services and changing customer or client base.Similar to previous studies, competitive advantage was measured by assessing profitability, sales growth, market share and customer satisfaction, (Hardeep & Bakshi, 2014; Porter, 2008). The study used a sale comprising of 6 items to measure competitive advantage through Likert scale.

IV. RESULTS AND DISCUSSION

4.1 Response Rate

Even though the study sample comprised of 240 staff from 40 state corporations, only 198 (83%) staff from 35 (88%) state corporations responded to the study. The relatively response rateresulted from structured follow-up by the trained research team.

Table 2: Response Rate

Sector	**Sample**	**Actual**	**Response Rate**
Finance	7	7	100%
Tertiary Education and Training	4	4	100%
Public Universities	5	5	100%
Commercial and Manufacturing	24	19	79%
Total	**40**	**35**	**88%**

4.2 Background Information

4.2.1 Respondent Background Information

A simple majority of the respondents were female 52.5% as shown in Table 3. This distribution depicts a fair balance of gender in the sampled state corporations. Considering that majority of the responses are perceptual in nature, this kind of distribution helps to accommodate opinions and views from either gender. On another note, this balance in gender in state corporations'points to the progress achieved by the ongoing efforts in Kenya's public service to mainstream gender in response to the constitutional threshold on gender which requires at least a third representation from either gender in recruitment and appointments in the public-sector organizations.Majority of the respondents (64.1%) indicated that they had at least a degree level of education while a relatively high percentage (42.4%) possessed a higher degree at postgraduate level. This wasexpected due to high levels of tertiary education in the country and considering that 62% of respondent were middle or senior managers who are requiredto have higher academic credentials to qualify for their roles.

Table 3**:** Summary of student demographics

	Frequency	**Percent**
Gender		
Male	94	47.5
Female	104	52.5
Total	198	100.0
Respondent Job Level		
Senior Manager	22	11.1
Middle-level Management	101	51.0
Non-Management staff	75	37.9
Total	198	100.0
Department or unit		
Production/Services	46	23.2
Purchasing	20	10.1
Human Resource Management	54	27.3
Research and Development	21	10.6
Sales and Marketing	15	7.6
Accounting and Finance	42	21.2
Total	**198**	**100.0**

Majority of the respondents were middle-level managers (51%) and the least were senior managers (11%). This distribution shows the staffing situation in state corporations which indicates that the span of control within the firms allowed approximately 4 middle managers per senior manager in the targeted departments. Additionally, learning occurs at all levels of the organizations hence it is important to capture opinions and facts from all key staffing categories. Furthermore, over-reliance on the opinion of senior managers was noted in the literature as a limitation of most organizational learning studies. High responses were received from the 36-45 and 26-35 age brackets giving 33.33% and 28.8% respectively. The mean age was 39.6 years with a standard deviation of 10.9 years. These results are consistent with the fact that majority of the respondents were middle managers and the non-management staff whose age ranged from 25-45 years. This is a common phenomenon in public organizations in Kenya where employees move up the professional ladder with time hence the length of service often reflect a growth in job-levels. Lastly, these results demonstrate that the workforce in the public service is young which aligns to the country's population dynamic that is dominated by a young working population aged 25-45.

To determine the length of service in years by employees, majority (78.8%) had worked for less than 11 years with 60% having worked for five years or less. The mean years of service for the employees was 7.3 with a standard deviation of 7.6 years. This presents diversity of experience that enriches the analysis of the study variables. Similarly, these results show that majority of the staff were hired in their current organizations or roles within the past ten years which is also around the same time that organizational learning and the knowledge economy became a 'household' concepts in state corporations in Kenya and also the time Kenya was launching its economic transformation blue print, Vision 2030(Government of Kenya, 2007). State corporations typically consist of a number of departments or functions and organizational learning may be more pronounced in some departments than others for various contextual reasons. With this background, the study was keen to identify the departments in which the respondents worked. Majority of the respondents were from human resources (27%), and the production departments (23%). Cumulatively, departments

dealing with the core business including production, service, purchasing, research and development and marketing were 51% while those associated with support functions including accounting, finance and human resources were 49%. This departmental diversity accords the study an opportunity to assess the role of some organizational learning variables like systems thinking which partly looks at relationships between various departments in the organization.

4.2.2 Background of State Corporations

Majority (54%) of the sectors were classified as commercial and manufacturing while 24% were from either training, tertiary education or public universities. The finance sector was represented by 20% of the sample state corporations. The high proportion of the commercial and manufacturing sectorwas expected and planned during sample selection since they form the highest proportion of state corporations. The representation from all key sectors that met the selection criterion is key in assessing differences within sectors.

Table 4**:** Sectors of state corporations

Sector	Frequency	Percent
Finance	7	20%
Tertiary Education and Training	4	11%
Public Universities	5	14%
Commercial and Manufacturing	19	54%
Total	**35**	**100%**

4.3 Descriptive Statistics Results

4.3.1 Learning Processes

In assessing learning processes, the study found that 61% of the respondent agreed or strongly agreed that learning processes were implemented within their state corporations. Despite this appreciation of the learning processes within their institutions, it was clear that learning processes associated with training were weak within state corporations. There were 44% of respondents who indicated that experienced employees were provided with training when switching to new positions. This has been attributed to the fact that they are seen or considered to know their work hence limited investment in their knowledge and skills.In addition to the weak training systems, there were limited mechanisms within the organization to guarantee sharing of emerging, good, and best practices across departments which essentially compromised inter-departmental learning within the state corporations. Other areas that employees scored low included seeking out dissenting views during discussions (57%), revisiting well-established perspectives during discussions (58%), and employees joining formal or informal networks made up of people from outside the organization (58%).

4.3.2 Learning Performance

In order to establish level performance within state corporations, the study focused on establishing the frequency with which state corporations acted on feedback from formal and informal sources including staff, customers and others stakeholders. Particularly, the study was interested in capturing and handling of suggestions associated with changes in strategies and methods, requests to offer different products, modification to policies or procedures and reaching a different set of clients or customers. Table 5 shows the descriptive statistics for learning performance which indicate that average learning performance, measured by the number of learning action taken over the past year was 14.28 (SD = 3.85). The state corporations that reported the least number of learning actions had four while the highest had 24 making a range of 20. As expected there were higher rates of learning for the single loop when compared to double loop.

Table 5**:** Percentage statistics for learning performance

Used feedback to take action or decide on:	Learning performance per year				
	0 /1	**2/ 3**	**4/5**	**6+**	**Total**
Use alternative methods/strategies to offer same products or services.	1%	22%	59%	18%	100%
Start offering more creative and innovative products or services	2%	23%	60%	15%	100%
Modify our policies or procedures to help us offer better products or services	14%	52%	30%	4%	100%
Decide or take action to reach a different client or customer base	12%	46%	37%	6%	100%
Average	**7%**	**36%**	**46%**	**11%**	**100%**

4.4 Factor Analysis

4.4.1 Normality of the Dependent Variable

To test the assumption of normality of the dependent variable, the study employed three normality tests. These included the observation of histogram, normal probability plot and statistical test using the Shapiro-Wilki test. The Shapiro-Wilkitest is commonly used by statisticians and is typically tested at the $\alpha = .005$ level of significance. This is a statistical test of the hypothesis that sample data have been drawn from a normally distributed population (Conover, 1999; Shapiro and Wilk, 1965; Royston, 1995). The formula for the test is as follows:Table 6 shows the Shapiro-Wilk results obtained by this test for the dependent variable, competitive advantage. Considering that the null-hypothesis of the Shapiro-Wilki test is that the population is normally distributed, if p-value is less than the chosen alpha level, then the null hypothesis is rejected and there is evidence that the data tested are not from a normally distributed population; in other words, the data are not normal. On the contrary, if the p-value is greater than the chosen alpha level, then the null hypothesis that the data came from a normally distributed population cannot be rejected (e.g., for an alpha level of 0.05, a data set with a p-value of 0.02 rejects the null hypothesis that the data are from a normally distributed population). Given that p-value was 0.128 for competitive advantage which is greater than the α of 0.05, the null hypothesis was accepted and the study concluded that the samples were drawn came from a normally distributed population.

Table 6**:**Shapiro-Wilk test of Normality

Variable	Shapiro-Wilk

	Statistic	df	Sig.
Competitive Advantage	.989	198	.128

4.4.2 Reliability and Validity Analysis

To conduct regression analysis for the purpose of testing the model, the study conducted a series of tests on the variables to improve reliability of the various constructs. Using SPSS version 21, the study employed Cronbach's Coefficient Alpha to test for internal consistency of the constructs within the six variables of study. The data on each of the variables were separately analyzed based on the values of coefficient of reliability and item total correlation as shown in table 7. For the purpose of analysis, each variable was abbreviated as follows: Competitive Advantage (CA.); Learning Culture (LC.); Learning Processes (LP.); and Systems Thinking (ST.). Items under variable were numbered accordingly. Since the coefficient alpha of individual scales indicated that the reliability estimate of three items were marginal, a secondary analysis was conducted after dropping these items. The reliability estimates and item-total correlations of the remaining items under learning process improved after dropping these items. The researchers decided to delete items to enhance Cronbach's coefficients. Table 5shows a summary of the Cronbach's alpha coefficient for each of the variables.After the deletion process, all the four independent variables and dependent variable registered an acceptable Cronbach's alpha coefficient of above 0.7. This is line with findings by Saunders Lewis and Thornhill (2009) and Christensen, Johnson and Turner (2011) who noted that scales of 0.7 and higher, suggest satisfactory reliability. The study concluded that the constructs each of the variables in this study had sufficient internal consistency and hence, reliable for the analysis.

Table 7**:**Summary of Reliability Estimates and Item-Total Correlations

Competitive Advantage	**Cronbach's Alpha**	**Item-Correlations**
Competitive Advantage (CA)	.876	
CA1		.580**
CA2		.694**
CA3		.688**
CA4		.713**
CA5		.702**
CA6		.727**
Learning Processes (LP)	.848	
LP1		.606**
LP2		.559**
LP3		.639**
LP4		.593**
LP5		.505**
LP6		.564**
LP7		.477**
LP9		.411**
LP11		.416**
LP12		.529**
LP14		.558**

***item-total correlation is significant at p<0.05 level (2-tailed).*

4.4.3 Sampling Adequacy

To examine whether the data collected was adequate for further statistical tests, such as factor analysis, the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy and Barlett's Test of Sphericity were performed on all the study variables. For a data set to be regarded as adequate and appropriate for statistical analysis, the value of KMO should be greater than 0.5 (Field, 2000). Results from table 6 show that all the KMO coefficients were above the critical level suggested of 0.5). Similarly, all the results of the Bartlett's Test of Sphericity were highly significant ($p < 0.05$). These two results confirm that the variableswere suitable for planned analyses.

Table 8**:**Summary KMO and Bartlett's Chi-Square Tests for Sampling Adequacy

Variable Name	**KMO**	**Bartlett's Chi-square**	**Df.**	**Sig.**
LP	0.848	685.511	55.000	0.000**
OLP	0.671	246.960	6.000	0.000**
CA	0.860	567.388	15.000	0.000**

*=P<0.1; **P<0.05

4.5 Inferential Analysis and Hypothesis Testing

The hypotheses associated with the relationship between the independent variables and the depending variable were tested through linear regression analysis using SPSS version 21 software.

4.5.1 Effectiveness of Learning Processes on Competitive Advantage

The study also sought to test the following null hypothesis in assessing the effects of learning processes on competitive advantage.

H_{o1}: There is no relationship between learning processes and competitive advantage of State Corporations in Kenya.

Bivariate Pearson correlation analysis to determine the linear relationship between learning processes and competitive advantage established that learning processes and competitive advantage had a statistically significant positive linear relationship, $r = .683$, $p < .001$. The direction of the association suggested that a higher measure of learning processes score was associated with greater competitive advantage score. The strength of the association was high ($.5 < |r| < 1$). A simple linear regression was calculated to predict the influence of learning processes on competitive advantage of state corporations. From Results of linearregression indicated a significant regression equation ($F(1,197) = 155.22$, $p<.05$) with an R^2 of .442. The model had an R square value of 0.442 thus indicating that the model accounted for 44.2% of the change in the depending variable, competitive advantage, for every change in the independent variable, learning culture. This is a strong prediction model for the intended analysis. The results showed that $Y = .383(LP) + e$ where Y is the dependent variable (competitive advantage), LP is the dependent variable (learning processes) and *e* is the error term.

Table 9**:**Coefficients Table for Learning Processes and competitive advantage

Variables	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.835	.131		14.024	.000**
Learning Processes	.383	.031	.665	12.459	.000**

*=P<0.1; **P<0.05

Based on the analysis, the study rejected the null hypothesis and concluded that there exists a relationship between learning processes and competitive advantage of state corporations in Kenya. The means that competitive advantage of state corporations increased by .385 units for each unit increase in learning processes. The independent variable, learning processes, was a significant predictor of competitive advantage, p<.05.

Effect of Learning Performance on Competitive Advantage

Bivariate Pearson correlation analysis to determine the linear relationship between learning performance and competitive advantage established that learning performance and competitive advantage had a statistically significant positive linear relationship, r = .609, p < .001. The direction of the association suggests that a higher measure of learning processes score is associated with greater competitive advantage score. The strength of the association was high (.5 < | *r* | < 1). A simple linear regression was calculated to predict the influence of leadership on competitive advantage of state corporations. From table 10, the results of the regression indicated that a significant regression equation was found (F(1,197)= 53.09, p<.05) with an R^2 of .213. For the no-intercept model, R Square measures the proportion of the variability in the dependent variable about the origin explained by regression. The model had an R square value of 0.213 thus indicating that the model accounted for 21.3% of the change in the depending variable, competitive advantage, for every change in the independent variable, learning culture. This is a strong prediction model for the intended analysis.

Table 10**:**ANOVA Table for systems thinking and competitive advantage

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	28.566	1	28.566	53.090	.000
	Residual	105.462	196	.538		
	Total	134.029	197			

The results showed that Y = 2.4 +1.93(RL) + *e* where Y is the dependent variable (competitive advantage), RL is the dependent variable (rate of learning) and *e* is the error term. The means that competitive advantage of state corporations increased by .1.933 units for each unit increase in rate of learning. The independent variable, rate of learning, was a significant predictor of competitive advantage, p<.05.

Table 11**:** Coefficients Table for Systems Thinking and competitive advantage

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Constant	2.400	.143		16.769	.000
Rate of learning	1.933	.265	.462	7.286	.000

4.5.2 Mediating Role of Learning Performance

The study tested the following null hypothesis by fitting a 'learning process' model by adding a path from learning processes to competitive advantage to the 'no direct' model.

H_{o2}: Learning performance does not mediate the relationship between learning processes and competitive advantage of state corporations in Kenya.

The study tested the following null hypothesis by fitting a 'learning process' model by adding a path from learning processes to competitive advantage to the 'no direct' model.

Ho5c: There is no mediating role of learning performance on the relationship between learning processes and competitive advantage of State Corporations in Kenya.

This model exhibited satisfactory fit indices [X^2(19)=33.823, n.s; GFI=0.964; CFI=0.982; RMSEA=0.063]. The fit indices were a large improvement to the 'no direct' model [X^2 (20) = 83.062, p < 0.01; GFI = 0.922; CFI = 0.923; RMSEA = 0.127]. This implies that the direct effect of learning processes to competitive advantage was significant and indeed it was (βyx.m = 0.287, p<0.1). After introduction of the mediating variable, the coefficient of learning process reduced, but the relationship remained significant showing signs of a partial mediation relationship.

Table 12**:**Regression for learning process, learning performance and competitive advantage

Relationship	Estimate	S.E.	S. Estimate	C.R.	P
OLP → LP	.014	.008	.189	1.686	.092*
CA → OLP	2.502	.667	.324	3.751	.000**
CA → LP	.287	.036	.498	8.065	.000**

*=P<0.1; **P<0.05

The significance of the indirect effect was further tested using a bootstrap estimation approach with 2000 samples (Shrout& Bolger, 2002) and the results affirmed that the indirect effectwas not significant (β =.035, SE = .023, n.s). This shows that the mediated effect of learning process on competitive advantage was 0.035. That is, due to the mediated effect of learning process on competitive advantage, when learning process goes up by 1 unit, competitive advantage goes up by 0.035. This is in addition to any direct (unmediated) effect that learning process may have on competitive advantage. This mediation effect was not significant (P<0.1). In summary, the both the direct effect (byx.m) and the indirect effect (bmx_bym) were significant leading to the rejection of the null hypothesis, therefore concluding that learning performancepartially mediates the effect

of learning processes on competitive advantage of state corporations ($p < 0.10$).

Table 13**:**Test of significance of direct and indirect effects

Relationship	Direct	Indirect	Comment
OLP→LP→CA	0.287**	0.035*	Partial Mediation

*=P<0.1; **P<0.05

4.6 Discussion of Major Findings

This study examined the mediating role of learning performance learning in the relationship between learning processes and competitive advantage among state corporations in Kenya. The study employed a descriptive, cross-sectional research design and used both quantitative and qualitative methods to gather data from 198 staff from 35 state corporations comprising of senior managers, middle manager and non-management staff.

In determining the effectiveness of learning processes in fostering competitive advantage, regression analysis results showed a positive and significant relationship. This affirms the positive and significant role that concrete learning processes play in influencing the performance and competitive advantage of state corporations. Similar result were found byTurner & Minonne, (2010), and are consistent with the building blocks of a learning organization opined by Garvin et al., (2008), who found that for organizations to learn effectively and attain the desired competitive advantage, they need to have more effective and comprehensive knowledge management processes than their competitors.

The study also found that learning performance positively mediates the relationship between learning processes and competitive advantage. This shows that learning processes positively influences competitive advantage by increasing learning performance within organizations. These results reinforce the need for growing the rate of learning within organizationsand ensuring that concrete learning processes are available and functioning optimally.

The results of the study emphasize the importance of state corporations nurturing concrete formal processes for generating, collecting, interpreting, and disseminating information. Concrete learning processes and practices ensures that the team and company values to experiment with new offerings, to gather intelligence on competitors, customers, and technological trends and solving problems. State corporations that attain competitive advantage prioritizes developing employees' skills because it appreciates that it is when employees grow that organizations grow. When an organization masters the processes and practices of generation, collection, interpretation, and dissemination of information, it sets itself up for successful competition.

Encouraging employees to join formal or informal networks made up of people from outside the organization ensures that there is continuous generation of information within and outside the organization and helps create forums for meeting with and learning from experts from outside the organization. Interpretation of information is essential and this can be achieved by the conduct of regular post-audits, after-action reviews as well as executing formal mechanisms for sharing of best practices among the different activity fields. Learning processes offer opportunities for organizations to engage in productive conflict and debate during discussions and intentionally seek out dissenting views during discussions. The also help organizations to revisits well-established perspectives during discussions, identifies and discusses underlying assumptions that might affect key decisions.

Learning processes ensure capacity of employees is continuously strengthened to meet the work needs. These efforts targets both the experience employees, new employees, and employees switching to new positions. The study has demonstrated that when organizations consistently and systematically invests in training and growth of staff by availing time for education, training and mentorship activities of staff, they lay a strong foundation for competitiveness.

In ensuring correct utilization of learning processes, the study, through qualitative interviews identified what it considered as core barriers to concretizing learning processes in state corporations: unnecessary bureaucracy that largely excluded junior employees from reflection and decisions associated with goods and service provision; and perpetual victimization of employees based on finding from formal feedback mechanisms without intensive analysis and reflection to explore truth and root causes of feedback points. Bureaucracy and victimization limited the acquisition of objective and timely feedback from junior employees despite the widespread recognition that they were closest to the majority of the clients. Victimization makes it difficult for employees to support and promote the use of feedback mechanisms.

V. CONCLUSION

The study results have validated the theoretical underpinning that learning processes is positively associated with competitive advantage of state corporations. It is evident that state corporations that seek to outperform their opponents in the respective industries need to establish an enabling learning environment manifested in concrete learning processes.Alearning organization arises from concrete steps and widely distributed activities that assure efficient and effective generation, collection, interpretation, and dissemination of information. Managers are advised and encouraged to make intentional efforts and invest in concrete learning processes for maximum impact in attaining competitive advantage. These include experimentation to develop and test new products and services; intelligence gathering to keep track of competitive, customer, technological and other contextual trends; rigorous analysis and interpretation of data to identify and address problems; and education, training and mentorship to develop both new and established employees.

APPENDIX

Appendix 1: Regression Results Tables

Code	Constructs
Competitive Advantage	

CA1	Profitability
CA2	Sales growth
CA3	Market share
CA4	Customer satisfaction
CA5	Offers value to customers
CA6	Customer retention
Learning Processes	
LP1	Collects information on technological trends
LP2	Employees participation in external formal or informal networks
LP3	Forums for meeting with and learning from external experts
LP4	Post-audits and after-action reviews
LP5	Formal mechanisms for sharing best practices
LP6	Engages in productive conflict and debate during discussions
LP7	Seeks out dissenting views during discussions
LP9	Identifies and discusses underlying assumptions
LP11	Training for experienced employees
LP12	Training when switching to a new position
LP14	Time is made available for education, training and mentorship
Organizational Learning Performance	
OLP1	My department used suggestions or information to use alternative methods to offer same products or services in better ways.
OLP2	My department used suggestions or information to start offering more creative and innovative products or services
OLP3	My department used suggestions or information to modify our policies or procedures to help us offer better products or services
OLPl4	My department used suggestions or information to make decisions or take action to reach a different client or customer base

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