

Knowledge Sharing, Organizational Learning and Performance of Top 100 Medium Enterprises in Kenya

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This study was grounded on the view that organizations have hidden reservoirs of knowledge in terms of tacit and explicit knowledge, which can be tapped to improve performance. This is according to the postulations of the knowledge and resource based theories. Whereas there is evidence of the direct influence of knowledge sharing and performance, this study advanced a proposition that organizational learning has effect on such influence. Using a structured questionnaire, data on the variables were obtained from a cross-section of 65 medium-sized companies to empirically test the proposition. The companies were among 100 medium sized companies categorized as top performing medium-sized companies in Kenya by KPMG and Nation Media Group in the year 2013. The study established that knowledge sharing had a positive and statistically significant effect on organizational performance. Conversely and contrary to expectation, the study established that organizational learning had neither direct nor mediating effect on organizational performance. In spite of this finding, the study supports the anchoring theories that performance differences across firms can be attributed to the variance in firms' resources and capabilities. Policy makers can utilize the findings of this study to formulate sound support strategies for medium enterprises. Further, areas of inquiry have been put forth based on the limitations inherent in the study.

Key Words: *Knowledge Sharing, Organizational Learning, Firm Performance, Medium-Sized Enterprises*

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Introduction

A fundamental question in the field of strategic management is how firms achieve sustainable competitive advantage (Porter, 1985). Knowledge resource is considered a key determinant of corporate success due to its contribution to innovation (Lopez and Esteves, 2013). Knowledge sharing helps in combining various levels of know-how to create new organizational knowledge and acquisition of deeper levels of understanding leading to better business performance (Bollinger and Smith, 2001). Knowledge sharing contributes to organizational learning by making employees better problem solvers, more creative and innovative thinkers, more confident and proficient workers through provision of skills, insights and competences to perform work well (Kumaraswamy and Chitale, 2012). The importance of knowledge resource is explained by Resource based theory which advances the view that performance differences across firms can be attributed to the variance in firms' resources and capabilities (Barney, 1991). Knowledge Based Theory (KBT) further depicts firms as repositories of knowledge and competences (Spender, 1996; Grant, 1996; Nonaka, 1994). Organizational learning literature has highlighted the importance of knowledge (Cummings and Whorley, 2009). However, less attention has been focused on the role of organizational learning on the relationship between knowledge sharing and organizational performance. Additionally, the study sought to establish whether organizational learning influences the relationship between knowledge sharing and firm performance.

This study was anchored on resource based and knowledge based theories. A firm's resources include anything that is a strength or weakness of a given firm whether tangible physical capital or intangible resources embedded in human and organizational capitals (Barney, 1991; Wenerfelt 1984). Resource Based Theory holds that a firm's resources that are rare, valuable, inimitable and non-substitutable determine its sustainable success (Prahalad and Hamel, 1990). Successful firms are those that acquire and maintain rare, specialized and inimitable resources for competitive advantage which in turn produces positive returns (Wernerfelt, 1984; Barney, 1991; Peteraf, 1993).

Knowledge Based Theory (KBT) posits that the primary role of firms is the creation and application of knowledge (Spender, 1996). According to Grant (1996) the theory focuses on knowledge as a fundamental source of human productivity. The central premise of this theory is that knowledge that is largely tacit can be a source of competitive advantage. Such knowledge is difficult for competitors to imitate (Barney, 1991). This theory depicts organizations as repositories of knowledge and competences where knowledge is transformed into valuable products and services adapted to market needs to deal with competitive challenges (Kogut and Zander, 1992). The ability of a firm to generate knowledge and effectively employ it through productive organizations determines its success and competitiveness (Drucker, 1988). Knowledge is created and held by individuals but it can become embedded within the organization as individuals share (Grant, 1996). Competitive advantage of firms arises from their

superior capability in creating and transferring knowledge (Lopez and Esteves, 2013). This paper holds that knowledge sharing helps employees to learn and work more effectively contributing to better organizational performance.

Medium-sized companies are key players in innovation bringing creativity into products and services. Knowledge sharing was considered a major contributor to the learning, creativity and innovation of these top 100 medium-sized firms. Secondly, according to Kenya Vision 2030, Kenya intends to become a knowledge-led economy where creation, adaptation and use of knowledge will be among the most critical factors for rapid economic growth (GoK, 2012). Thirdly, the future of Kenyan economy depends to a great extent on the success of medium-sized companies due to their great potential in achieving macroeconomic goals of nations through poverty reduction, employment and wealth creation. Finally, knowledge sharing has gained recognition in large companies, yet there is little evidence of its impact in medium-sized companies.

Literature Review and Hypotheses

Knowledge is considered a critical resource of firms and economies (Yi, 2009). Knowledge sharing fuels growth in regional and national economies by fostering communities of innovators and ensuring knowledge diffusion (Appleyard, 1996). Knowledge sharing helps the organization to use available resources in the most efficient way by transferring the best practices from one department to another, from one project or client to another. Knowledge sharing not only reduces the cost of production or service

but also contributes to the success of the organization since it helps in avoiding mistakes and develops the ability to innovate (Keskin, 2005). When knowledge is shared, it becomes cumulative and embedded within organizational processes, products and services. Today's organizations have recognized that competitive advantage hinges on effective knowledge management (Chen and Chen, 2006). The aim of knowledge sharing is integration of individual knowledge into organizational strategy which is perceived as a basic requirement for the future (Nonaka, 2007). This study suggests that organizational performance can be efficiently enhanced if employees shared information and experiences, opinions and insights with one another. Knowledge sharing has rarely been examined to be directly contributing to organizational performance. This study sought to make a contribution by empirically testing whether knowledge sharing facilitates organizational performance. To make a contribution in this regard, we put forth a proposition:

H₁: Knowledge sharing has a statistically significant effect on firm performance.

Organizational learning can be perceived as a principal means of achieving strategic renewal of an enterprise (Crossan, Lane and White, 1999). It is a prime organizational capability which occurs when organizations develop a deeply ingrained learning culture and have education, training and mentoring programs available to encourage organizational learning (Grant, 1996). A climate of continuous learning, removal of blockages and installing enhancers are necessary organizational actions to optimize this asset (Steiner, 1998). A

common belief in strategic management literature is that organizations' learn and what they learn enhance their ability to exist. Fiol and Lyles (1985) hold that for learning to take place, organizations develop the potential to learn, unlearn and relearn based on their past behaviors. They further argue that organizational performance affects the organization's ability to learn and to adapt to changing environment. Crossan et al. (1999) contend that convergence has not occurred on how organizational learning impacts organizational performance. They attribute this to the fact that different researchers apply organizational learning to different domains. Another argument is the problem of too narrow conceptualization of organizational learning. This study sought to make a contribution to the ongoing debate by focusing on the mediating role of organizational learning in the relationship between knowledge sharing and organizational performance.

Knowledge sharing and organizational learning are anchored on knowledge based and resource-based theories. Resource based theory provides a useful compliment to Porter's (1980) perspective of firms achieving competitive advantage and in understanding firm resources. Resource based theory further holds that the choice of resources is guided by the motives of efficiency, effectiveness and profitability which enable firms to generate competitive advantage (Conner, 1991). This study considered knowledge as a resource bundle and knowledge sharing as the strategy to obtain the positive returns of organizational learning and ultimately improved organizational performance. The study adds precision to resource based

theory by exploring the contribution of knowledge sharing to firm performance.

Knowledge Based Theory (KBT) depicts firms as repositions of knowledge and competences (Spender, 1996; Grant, 1996; Nonaka, 1994). Theoretical developments concerning knowledge based theory have enhanced understanding about how knowledge can be a source of competitive advantage. Knowledge is a fluid mix of framed experiences, values, contextual information and expert insights that provide a framework for evaluating and incorporating new experiences and information (Davenport and Prusak, 1998). This knowledge is embedded in organizational routines, processes, practices and norms and it's through knowledge sharing that organizational learning is enhanced (Kumaraswamy and Chitale, 2012). Organizational learning occurs when knowledge is accumulated over time and learned by organization members (March, 1991).

Organizational learning enable organizations to build and organize knowledge and routines around their business activities and business cultures as well as the way they adopt and develop organizational efficiency by improving the broad skills of their workforce (Fiol and Lyles, 1985). Knowledge sharing enhances organizational learning by providing skills, insights and competences to perform work well. Organizational learning develops employee competencies that are valued by clients, hardly imitable, consequently contributing to the competitive advantage of the organization. The ability to share knowledge is the prime reason behind organizational growth (Gupta and Govindarajan, 2000). The ability of an

organization to learn and accumulate knowledge from its experience is a capability that can provide competitive advantage.

Crossan et al. (1999) contend that convergence has not occurred on how organizational learning impacts organizational performance. They attribute this to the fact that different researchers apply organizational learning to different domains. Another argument is the problem of too narrow conceptualization of organizational learning. According to Ramirez, Garcia and Rojas (2011) research on knowledge sharing and organizational performance is ongoing; however, how this relationship is influenced by organizational learning is scantily known. This study sought to make a contribution to the ongoing debate by focusing on the mediating role of organizational learning in the relationship between knowledge sharing and organizational performance. The foregoing discussion led to the hypothesis:

H₂: Organizational learning has a statistically significant mediating effect on the relationship between knowledge sharing and organizational performance.

Method

The study adopted a cross-sectional survey which involves collecting data about practices, situations or views at one point in time across members of a population (Cooper and Schindler, 2003). The design helped describe the characteristics of the variables of interest in a situation (Sekaran, 2007). Cross-sectional survey design permitted subjecting the data collected to statistical analysis and allowed for hypotheses testing to establish whether there exist significant relationships among

variables at a given point in time. All top 100 companies were contacted to participate in the study making the study a census survey.

Key Constructs

Knowledge sharing

Knowledge sharing is a learning activity which occurs through asking questions, sharing ideas, suggesting potential solutions and adopting new behaviour patterns (Manaf, 2012). Different researchers have adopted different taxonomies to operationalize knowledge sharing (Yi, 2009; Lin and Lee, 2004; Bock and Kim, 2002). The current study adopted the measure of knowledge sharing developed and validated by Yi (2009) which operationalize knowledge sharing as written reports and organizational communications through meetings, personal conversations and shared databases. Written reports enhance sharing of explicit knowledge, meetings entails person to group knowledge sharing through formal interactions, personal conversation entails person to person knowledge sharing while shared databases create forums for increased cooperation and coordination between members of different departments and organizations (Dalkir, 2005).

Organizational Learning

Argyris and Schon (1978) hold that organizational learning is multi-level since insights and innovative ideas are conceived by individuals then these ideas are shared and actions taken at organizational level. This was echoed by Crossan, Lane and White (1999) who contend that organizational learning occurs at individual, group and institutional level. 4i framework was therefore adopted in

operationalizing organizational learning. This comprises of four related processes intuition, interpretation, integration and institutionalization and three levels; individual, group and institutional or organizational levels of organizational learning (Crossan et al., 1999). At individual level, intuition and interpretation takes place. At group level, the ideas and insights are explained to group members for shared understanding. At institutional or organizational level, dialogue and joint actions enhance coordination of actions through mutual adjustments and routinized actions.

Firm Performance

Organizational performance is a multidimensional construct that cannot be easily explained through any single index (Chakravathy, 1986). It is defined broadly in industrial organization as encompassing dimensions such as allocative efficiency or profitability, technical efficiency or cost minimization and innovativeness (Porter, 1981). Measuring organizational performance has become complex as stakeholder expectations about a company's economic, social (corporate social responsibility) and environmental responsibilities change (Hubbard, 2009). Today, the emphasis is on operationalizing performance along the Sustainable Balance Score Card (SBSC) which builds on the well established balanced scorecard but adds factors designed to capture a firm's social and environmental performance. These perspectives include financial measures, internal business processes, customer satisfaction, employee learning and growth, social perspective and environmental performance (Hubbard, 2009). This study adopted sustainable balance scorecard in operationalizing firm

performance. This operationalization addresses the contentions raised by Mugambi and K'Obonyo (2012) that scholars have not yet exhausted the debate on the factors that influence organizational performance due to methodological flaws and contextual application.

Data Collection

Primary data was collected using structured questionnaires adopted from strategic management studies with modifications aimed at addressing the current study objectives. The respondents were chief executive officers, senior managers, human resource managers or line managers in the targeted top 100 medium-sized companies. According to upper echelon's theory by Hambrick (2007) organizations are a reflection of its top management. In this regard, top executives were best placed respondents since they shape the destiny of organizations. The managers were considered to be the most knowledgeable informants about the issues under investigation hence a source of credible information. Questionnaires were administered through drop and pick method or sent via mail for the firms that had provided their emails in the directory.

Validity and Reliability

The data collection instrument for this study was tested for reliability through computation of Cronbach's Alpha coefficient for all variables in the model. The coefficient ranges from 0 meaning no consistency, to 1 meaning complete consistency; the higher the coefficient the more reliable is the scale. All the items under this study had Alpha coefficients value above the recommended 0.7 by

Nunnally (1978); hence the instrument was considered reliable.

Validity of an instrument relates to the ability of the instrument to measure the construct as purported (Manaf, 2012). It concerns the accuracy of inferences. Construct validity was ensured since the questionnaire was developed based on tools used in prior studies with modifications so as to address the current study objectives. Pilot study was used to improve the suitability of the questionnaire. The questionnaire was pretested using ten medium-sized companies that were randomly selected from the response list. Pilot study was used to assess whether the respondents understood the questions in order to avoid comprehension problem. The questions were reviewed accordingly based on the feedback gathered. After data collection, returned questionnaires underwent strict checks to ensure completeness and consistency.

Data Analysis

The unit of analysis for this study was a top 100 medium-sized company. Data analysis involved data cleaning, editing and coding. The returned questionnaires were checked to ensure completeness. Data was analyzed using a combination of both descriptive and inferential statistics. Descriptive statistics comprised of mean, standard deviation, percentages and frequencies to explore underlying characteristics of organizations and respondents.

Simple linear regression and hierarchical regression were computed to test hypothesized relationships. Simple linear regression was used to test the effect of knowledge sharing on organizational

performance. The mediating effect of organizational learning on the relationship between knowledge sharing and organizational performance was tested using hierarchical multiple regression. This examined the relationship between a set of independent variable and the dependent variable by successively adding a variable for assessment of actual value contributed by each variable. The analysis was done at 95% confidence interval ($p=0.05$).

Results

The results first present the descriptive statistics of study variables, summarized in means, standard deviation and one sample t-tests. The second part of this chapter presents results of tests of hypotheses. Organizational performance was measured using six indicators and each independent variable was regressed against the six indicators of performance. The results of this study are presented in Tables depicting the regression results as: model summary with coefficient of determination (R^2) explaining how much variation in the dependent variable is explained by the independent variable. The analysis of variance (ANOVA) showing the overall model significance while the model coefficients show the beta coefficients of each independent factor and whether the factor has a positive or negative relationship with the dependent variable.

Manifestation of the Study Variables

Descriptive statistics for each of the research variables were measured using Likert-type scale and one-sample t-test. The respondents were asked to indicate the extent to which they agreed or disagreed with the statements representing knowledge sharing, organizational learning and performance of top 100

medium-sized companies in Kenya. A five-point Likert scale was used ranging from (to a very large extent=5, to a large extent=4, to a moderate extent=3, to a

small extent=2 and not at all=1). Table 1 presents the summary of means and standard deviation of the study variables.

Table 1: Summary of Means, Standard Deviation and One Sample T-Test for Study Variables.

Variables	N	Mean	Std. Deviation	t-values	Sig.(2-tailed)	Coefficient of variation(CV) -percent
Written reports	65	3.9538	.64785	49.204	.000	16.38
Shared databases	65	3.9346	.69355	45.739	.000	17.63
Meetings	65	3.3481	.83195	32.446	.000	24.85
Personal conversations	65	3.9219	.89518	35.049	.000	22.83
Individual learning	65	3.9128	.63267	49.862	.000	16.17
Group Learning	65	3.9949	.64682	49.794	.000	16.19
Institutional learning	65	3.7692	.63555	47.815	.000	16.86
Financial performance	65	4.0417	1.02094	31.670	.000	25.26
Customer focus	65	3.9063	.79620	39.249	.000	20.38
Internal Business Processes	65	3.8333	.85655	35.802	.000	22.34
Learning and growth	65	3.8281	.96247	31.819	.000	25.14
Social Perspective	65	4.0625	.83333	39.000	.000	20.51
Environmental Performance	65	3.8750	1.05493	29.386	.000	27.22

The results of Table 1 show that all knowledge sharing indicators except meetings scored above the mean of 3.5. The mean score for knowledge sharing ranged from 3.954 to 3.3481. This meant that the top 100 medium-sized companies shared knowledge to a moderate extent. Written reports had a mean score of 3.95 indicating that most companies shared knowledge through documented reports. Meetings had the lowest score of 3.3 indicating that person to group knowledge sharing through formal interaction was not as preferred as other means of sharing knowledge. The highest variability was evident in personal conversation with

standard deviation of 0.89518 and the lowest variability being written reports with standard deviation of 0.64785. . For knowledge sharing measures, written reports had the highest difference ($t=49.204, p<0.05$).

The results of Table 1 further indicate that organizational learning had a mean score ranging from 3.995 to 3.769. Group learning had the highest mean score of 3.99 meaning that top 100 medium-sized companies embraced sharing of group lessons resulting in group cohesion. Institutional learning had the lowest score of 3.7 indicating that shared understanding expected to result in improved production

processes, new procedures and new products was achieved to a moderate extent. This implied that there was a general positive appreciation of organizational learning at individual, group and institutional levels. The highest variability was seen in group learning with a standard deviation of 0.64682 and the lowest variability was individual learning with a standard deviation 0.63267. For organizational learning measures, individual learning had the highest difference ($t=49.862, p<0.05$).

On organizational performance, social performance had the highest mean score of 4.0625. This indicates that the medium-sized companies invest heavily in corporate social responsibility. Learning and growth had the lowest mean score of 3.8281 meaning that employee skill development, innovation and productivity was considered to be taking place to a moderate extent among the top 100 medium-sized companies. The highest variability was evident in environmental performance with a standard deviation of 1.05493 and the lowest variability being customer satisfaction with standard deviation of 0.7962. For organizational

performance measures, customer satisfaction had the highest difference ($t=39.249, p<0.05$). The results of one sample t-test show that for all the variables, p-values were 0.000, less than $p=0.05$. This means that the mean score measures differed statistically significantly across the top 100 medium-sized companies.

Knowledge Sharing and Financial Performance

The first objective of the study was to establish the effect of knowledge sharing on organizational performance. To achieve this objective, hypothesis one was stated in alternate as:

H₁: Knowledge sharing has a statistically significant effect on organizational performance. The financial measures considered in this study were a composite index of sales growth, profit margins and returns on equity derived from the primary data since secondary data on financial performance was not accessible. The study set out to establish the effect of knowledge sharing on each of the six parameters of performance, the effect of knowledge sharing on non financial performance and finally on organizational performance.

Table 2: Knowledge Sharing and Financial Performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	.226 ^a	.051	-.014	3.53381		
a. Predictors: (Constant), Personal conversations, meetings, Shared databases, Written reports						
ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	39.137	4	9.784	.784	.541 ^b
	Residual	724.292	58	12.488		
	Total	763.429	62			
a. Dependent Variable: Y= Financial Performance						
b. Predictors: (Constant), Personal conversations, meetings, Shared databases, Written reports						

Model Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant) (C)	20.432	4.463		4.578	.000
	Written reports(WR)	-1.257	.794	-.231	-1.584	.119
	Shared databases(SD)	.045	.179	.034	.249	.804
	Meetings(M)	-.059	.069	-.110	-.849	.399
	Personal conversations(PC)	.093	.143	.096	.652	.517

a. Dependent Variable: Y= Financial Performance

The results presented in Table 2 indicate positive and low relationship between knowledge sharing and financial performance ($r=0.226$). Knowledge sharing explains 5.1% ($R^2=0.051$) of the variation in financial performance with the remaining 94.9% explained by other variables implemented by the top 100 medium-sized companies. The regression model was not significant at ($F=0.784$, $p=0.541$). Since the calculated p-value was greater than 0.05, null hypothesis was not rejected and it was concluded that knowledge sharing have no statistically significant effect on financial performance.

The model coefficients results show that t-tests have p-values that were greater than 0.05 indicating that individual knowledge sharing measures had no statistically significant effect on financial performance. This can be interpreted to mean that knowledge sharing does not contribute to improvement of financial performance of medium-sized companies. This finding is important with regard to measurement of organizational performance, in that it shows the inadequacy of using traditional financial measures on the basis of economic perspective alone hence the need for inclusion of non financial measures as discussed in the subsequent sections.

Table 3: Knowledge Sharing and Internal Business Processes

Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	.183 ^a	.034	.033	2.61251		
a. Predictors: (Constant), Personal conversations, Meetings, Shared databases, Written reports						
ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	13.790	4	3.448	.505	.732 ^b
	Residual	395.861	58	6.825		
	Total	409.651	62			
a. Dependent Variable: Y= Internal Business Processes						
b. Predictors: (Constant), Personal conversations, Meetings, Shared databases, Written reports						
Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		

1	(Constant)(C)	15.135	3.300		4.587	.000
	Written reports(WR)	.079	.587	.020	.134	.893
	Shared databases(SD)	-.137	.132	-.144	-1.033	.306
	Meetings(M)	.000	.051	-.001	-.007	.995
	Personal conversations(PC)	-.116	.106	-.163	-1.093	.279
a. Dependent Variable: Y= Internal Business Processes						

The results presented in Table 3 indicate positive and low relationship between knowledge sharing and internal business processes ($r=0.183$). Knowledge sharing explains 3.4 % ($R^2=0.034$) of the variation in internal business processes with the remaining 96.6% explained by other variables implemented by the companies. The regression model was not significant at ($F=0.505$, $p=0.732$). Since the calculated p-value was greater than 0.05, null hypothesis was not rejected and it was

concluded that knowledge sharing did not have a statistically significant effect on internal business processes. The model coefficients results show that t-tests has p-values that were greater than 0.05 indicating that individual knowledge sharing indicators has no statistically significant effect on internal business processes. This is interpreted to mean that knowledge sharing does not explain the changes in internal business processes.

Table 4: Knowledge Sharing and Customer Satisfaction

Model						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	.287 ^a	.082	.019	3.16555		
a. Predictors: (Constant), Personal conversations, Meetings, Shared databases, Written reports						
ANOVA^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	52.068	4	13.017	1.299	.281 ^b
	Residual	581.201	58	10.021		
	Total	633.270	62			
a. Dependent Variable: Y= Customer satisfaction						
b. Predictors: (Constant), Personal conversations, Meetings, Shared databases, Written reports						
Coefficients^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant) (C)	12.470	3.998		3.119	.003
	Written reports(WR)	-.773	.711	-.156	-1.087	.281
	Shared databases(SD)	.063	.160	.053	.391	.697
	Meetings(M)	.035	.062	.071	.556	.580
	Personal conversations (PC)	.271	.128	.306	2.114	.039
a. Dependent Variable: Y= Customer satisfaction						

The results presented in Table 4 indicate positive and low relationship between knowledge sharing and customer satisfaction ($r=0.287$). Knowledge sharing explains 8.2% ($R^2=0.082$) of the variation in customer satisfaction, with the remaining 91.8% being explained by other variables not included in this study. The regression model was not significant at ($F=1.299$, $p=0.281$). Since the calculated p-value was greater than 0.05, null hypothesis was not rejected and it was concluded that knowledge sharing have no statistically significant effect on customer satisfaction.

The model coefficients results presented in Table 4 show that t-tests of personal

conversation had a beta coefficient of 0.271 at ($p= 0.039$). Since the p-value is less than 0.05, this indicates that knowledge sharing through personal conversation has a statistically significant effect on customer satisfaction. Based on the regression results, an equation can be written to explain this effect as follows:

$$\text{Customer satisfaction} = 12.47(C) + 0.271(PC)$$

This means that a unit change in knowledge sharing through personal conversations causes an increase by 0.271 on customer satisfaction. This can be interpreted to mean that knowledge sharing through personal conversation positively contributes to customer satisfaction in an organization.

Table 5: Knowledge Sharing and Learning and Growth

Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	.394 ^a	.155	.097	3.67322		
a. Predictors: (Constant), Personal conversations, Meetings, Shared databases, Written reports						
ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	143.845	4	35.961	2.665	.041 ^b
	Residual	782.568	58	13.493		
	Total	926.413	62			
a. Dependent Variable: Y= Learning and Growth						
b. Predictors: (Constant), Personal conversations, Meetings, Shared databases, Written reports						
Model Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant) (C)	21.815	4.639		4.702	.000
	Written reports (WR)	-1.730	.825	-.288	-2.097	.040
	Shared databases (SD)	-.047	.186	-.033	-.253	.801
	Meetings(M)	.105	.072	.179	1.460	.150
	Personal conversations (PC)	-.113	.149	-.106	-.762	.449
a. Dependent Variable: Y=Learning and Growth						

The results presented in Table 5 indicate positive and moderate relationship between knowledge sharing and learning and growth ($r=0.394$). Knowledge sharing explains 15.5% ($R^2 = 0.155$) of the variation in learning and growth. The regression model was statistically significant at ($F=2.665$, $p=0.041$). Since the calculated p-value was less than 0.05, null hypothesis was rejected and it was concluded that knowledge sharing have a statistically significant effect on learning and growth. The results of Table 5 show

that t-tests for written reports has p-values less than 0.05 indicating that knowledge sharing through written reports have statistically significant effect on learning and growth. Based on the regression results, an equation can be written to explain this effect as:

$$\text{Learning and growth} = 21.815(C) - 1.730(WR)$$

This can be interpreted to mean that a unit change in knowledge sharing through written reports causes learning and growth to change by(-1.730).

Table 6: Knowledge sharing and Social Performance

Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	.204 ^a	.042	-.024	1.65160		
a. Predictors: (Constant), Personal conversations, Meetings, Shared databases, Written reports						
ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.869	4	1.717	.630	.643 ^b
	Residual	158.210	58	2.728		
	Total	165.079	62			
a. Dependent Variable: Y=Social Performance						
b. Predictors: (Constant), Personal conversations, Meetings, Shared databases, Written reports						
Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)(C)	9.957	2.086		4.773	.000
	Written reports (WR)	-.503	.371	-.199	-1.355	.181
	Shared databases (SD)	-.030	.084	-.049	-.355	.724
	Meetings (M)	.002	.032	.008	.058	.954
	Personal conversations (PC)	.039	.067	.087	.587	.559
a. Dependent Variable: Y= Social Performance						

The results presented in Table 6 indicate positive and low relationship between knowledge sharing and social performance ($r=0.204$). Knowledge sharing explains 4.2% ($R^2 = 0.042$) of the variation in social performance. The regression model was

not significant at ($F=0.630$, $p=0.643$). Since the calculated p-value was greater than 0.05, null hypothesis was not rejected and it was concluded that knowledge sharing have no statistically significant effect on social performance.

The model coefficients results show that t-tests has p-values are greater than 0.05 indicating that individual knowledge sharing measures has no statistically significant effect on social performance. This means that knowledge sharing does not contribute to improvement of social

performance of medium-sized companies. This can be interpreted to mean that even though organizations shared knowledge it has no effect on the medium-sized companies' engagement in social performance or corporate social responsibility.

Table 7: Knowledge Sharing and Environmental Performance

Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	.418 ^a	.175	.118	2.88861		
a. Predictors: (Constant), Personal conversations, Meetings, Shared databases, Written reports						
ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	102.456	4	25.614	3.070	.023 ^p
	Residual	483.957	58	8.344		
	Total	586.413	62			
a. Dependent Variable: Y= Environmental Performance						
b. Predictors: (Constant), Personal conversations, Meetings, Shared databases, Written reports						
Model Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant) (C)	6.024	3.648		1.651	.104
	Written reports(WR)	-1.117	.649	-.234	-1.722	.090
	Shared databases(SD)	.168	.146	.148	1.148	.256
	Meetings(M)	.146	.057	.313	2.584	.012
	Personal conversations (PC)	.228	.117	.267	1.943	.057
a. Dependent Variable: Y= Environmental Performance						

The results presented in Table 7 indicate positive and moderate relationship between knowledge sharing and environmental performance ($r=0.418$). Knowledge sharing explains 17.5% ($R^2=0.175$) of the variation in environmental performance with the remaining 82.5% being explained by other variables not included in this study. The regression model was statistically significant at ($F=3.070$, $p=0.023$). Since the calculated p-value was less than 0.05, null hypothesis

was rejected and it was concluded that knowledge sharing has a statistically significant effect on environmental performance.

The model coefficients results presented in Table 7 show that t-test of meetings had a beta coefficient of 0.146 at ($p= 0.012$). Since the p-value is less than 0.05, this indicates that knowledge sharing through meetings has a statistically significant effect on environmental performance.

Based on the regression results, an equation can be written to explain this effect as follows:

$$\text{Environmental performance} = 6.024 (C) + 0.146(M)$$

This means that a unit change in knowledge sharing through meetings

improves environmental performance by 0.146. This can be interpreted to mean that knowledge sharing through meetings helps the firms reduce the amount of environmental resources they use in their operations

Table 8: Knowledge Sharing and Non Financial Performance (Combined Effect of Knowledge Sharing on all the Non Financial Parameters)

Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	.496 ^a	.246	.194	5.71842		
a. Predictors: (Constant), Personal conversations, Meetings, Shared databases, Written reports						
ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	620.269	4	155.067	4.742	.002 ^b
	Residual	1896.619	58	32.700		
	Total	2516.889	62			
a. Dependent Variable: Y= Non financial performance						
b. Predictors: (Constant), Personal conversations, Meetings, Shared databases, Written reports						
Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant) (C)	65.401	7.222		9.055	.000
	Written reports (WR)	-4.044	1.284	-.409	-3.148	.003
	Shared databases(SD)	.017	.290	.007	.060	.953
	Meetings(M)	.287	.112	.297	2.564	.013
	Personal conversations(PC)	.309	.232	.175	1.333	.188
a. Dependent Variable: Y= Non financial performance						

The results presented in Table 8 indicate positive and moderate relationship between knowledge sharing and non financial performance (r=0.496). Knowledge sharing explains 24.6 % (R² =0.246) of the variation in non financial performance. This implies that knowledge sharing has a greater effect on non financial measures than it has on financial measures.

The regression model was statistically significant at (F=4.742, p=0.002). Since the calculated p-value was less than 0.05, null hypothesis was rejected and it was concluded that knowledge sharing have a statistically significant effect on non financial performance. This was an interesting finding given that the effect of knowledge sharing on most of the

individual indicators of non financial performance were statistically not significant.

Model coefficient results presented in Table 8 reveal that t-tests for written reports have negative beta coefficients of -4.044 at (p=0.003) while beta coefficients for meetings are positive 0.287 at (p=0.013). Based on the regression results, an equation can be written to explain this effect as follows:

$$\text{Non financial performance} = 65.401(C) + 0.287(M) - 4.044(WR)$$

This means that a unit change in knowledge sharing through meeting causes an increase of 0.287 on non financial performance while a unit change in knowledge sharing through written reports causes a negative change of 4.044 in non financial performance. This can be interpreted to mean that meetings are an effective way of sharing knowledge due to the positive implications they have on non financial measures of performance.

Table 9: Knowledge Sharing and Organizational Performance (Main Hypothesis)

Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	.432 ^a	.187	.131	7.26542		
a. Predictors: (Constant), Written reports, meetings, Shared databases, Personal conversations						
ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	704.042	4	176.010	3.334	.016 ^b
	Residual	3061.609	58	52.786		
	Total	3765.651	62			
a. Dependent Variable: Organizational Performance						
b. Predictors: (Constant), Written reports, Meetings, Shared databases, Personal conversations						
Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant) (C)	81.936	9.176		8.929	.000
	Personal conversations (PC)	.326	.295	.151	1.108	.272
	Meetings (M)	.228	.142	.192	1.600	.115
	Shared databases(SD)	.049	.368	.017	.134	.894
	Written reports (WR)	-4.969	1.632	-.411	-3.045	.003
a. Dependent Variable: Organizational Performance						

The results presented in Table 10 indicate positive and moderate relationship between knowledge sharing and organizational performance (r=0.432). Knowledge sharing explains 18.7% (R²=0.187) of the variation in organizational

performance with the remaining 81.3% explained by other variables implemented by the top 100 medium-sized companies. The regression model was statistically significant at (F=3.334, p=0.016). Since the calculated p-value was less than 0.05,

null hypothesis was rejected and it was concluded that knowledge sharing have a statistically significant effect on organizational performance.

The model coefficients results presented in Table 10 show that t-tests of written reports had a beta coefficient of -4.969 at (p=0.003). Since the p-value is less than 0.05, this indicates that knowledge sharing through written reports has a statistically significant effect on organizational performance. Based on the regression results, an equation can be written to explain this effect as follows:

$$\text{Organizational performance} = 81.936(C) - 4.969 (WR)$$

This means that a unit change in knowledge sharing through written reports results in organizational performance changing by - 4.969. This can be interpreted to mean that knowledge sharing through written reports is counter-productive to performance in organizations. The analysis of hypothesis one established that knowledge sharing has a statistically significant effect on performance of top 100 medium-sized companies.

Effect of Organizational Learning on the Relationship between Knowledge Sharing and Organizational Performance.

The second objective of this study was to establish the effect of organizational learning on the relationship between knowledge sharing and organizational performance. To achieve this objective, hypothesis four was stated in alternate as:

H₂: Organizational learning has a statistically significant mediating effect on the relationship between knowledge sharing and organizational performance.

A mediation effect implies a situation where the effect of the independent variable on the dependent variable is best explained using a third variable (mediator variable) which is caused by the independent variable and is itself a cause of the dependent variable (Preacher and Hayes, 2004). The causal relationship between the independent and dependent variable is said to be indirect.

To test the hypothesis whether organizational learning mediates the relationship between knowledge sharing and organizational performance, a hierarchical multiple regression analysis was conducted. The analysis tested the results of knowledge sharing on organizational performance and the change observed after introduction of the mediator variable, organizational learning. Durbin-Watson test, tests whether the residuals from the multiple regressions are independent and not auto correlated. The Durbin-Watson statistics range from 0 to 4 with values of 2 meaning that there is no autocorrelation in the residuals (Field, 2009). In this study the Durbin-Watson statistics had a value of approximately 2, meaning that there is no threat of auto-correlation in the residuals. Hierarchical multiple regression results of knowledge sharing on organizational performance as mediated by organization learning are presented in Table 10 and Table 11.

Table 10: Knowledge Sharing and Financial Performance as Mediated by Organizational Learning

Model Summary^c										
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.107 ^a	.011	.005	3.51746	.011	.704	1	61	.405	
2	.180 ^b	.033	.000	3.50856	.021	1.310	1	60	.257	1.899
a. Predictors: (Constant), Knowledge sharing										
b. Predictors: (Constant), Knowledge sharing, Organization learning										
c. Dependent Variable: Financial Performance										
ANOVA^a										
Model		Sum of Squares	df	Mean Square	F	Sig.				
1	Regression	8.707	1	8.707	.704	.405 ^b				
	Residual	754.722	61	12.372						
	Total	763.429	62							
2	Regression	24.830	2	12.415	1.009	.371 ^c				
	Residual	738.598	60	12.310						
	Total	763.429	62							
a. Dependent Variable: Financial Performance										
b. Predictors: (Constant), Knowledge sharing										
c. Predictors: (Constant), Knowledge sharing, Organization learning										
Coefficients^a										
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.				
		B	Std. Error	Beta						
1	(Constant)	19.065	3.568		5.343	.000				
	Knowledge sharing	-.048	.057	-.107	-.839	.405				
2	(Constant)(C)	14.796	5.156		2.870	.006				
	Knowledge sharing(KS)	-.050	.057	-.111	-.871	.387				
	Organization learning (OL)	.056	.049	.145	1.144	.257				
a. Dependent Variable: Y=Financial Performance										

The results presented in Table 10 shows that the model explains 1.1% of the variation and is not statistically significant ($R^2=0.011$, $F=0.704$, $p=0.405$). On addition of the mediator, the model explains 3.3% of the variation and is not statistically significant ($R^2=0.033$, $F=1.009$, $p=0.371$). There is a change of 2.1% ($\Delta R^2=0.021$) with the introduction of organizational learning as a mediator

variable. Further, ($\Delta F= 1.310$) and significant F change is 0.257. Therefore organizational learning has a very weak mediating effect on the relationship between knowledge sharing and financial performance, as shown by change in R^2 . However, the mediating effect is not statistically significant. Since the calculated p-value was greater than 0.05, null hypothesis was not rejected and it was

concluded organizational learning has no mediating influence on the relationship between knowledge sharing and financial performance.

The model coefficients results show that t-tests has p-values that are greater than 0.05 indicating that knowledge sharing and

organizational learning has no statistically significant effect on financial performance. This can be interpreted to mean that organizational learning has no statistically significant effect on the relationship between knowledge sharing and financial performance among top 100 medium-sized companies in Kenya.

Table 11: Knowledge Sharing and Non Financial Performance as Mediated by Organization Learning

Model Summary^c											
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson	
					R Square Change	F Change	df1	df2	Sig. F Change		
1	.215 ^a	.046	.030	6.27388	.046	2.943	1	61	.091		
2	.246 ^b	.061	.029	6.27745	.015	.931	1	60	.339	1.411	
a. Predictors: (Constant), Knowledge sharing											
b. Predictors: (Constant), Knowledge sharing, Organization learning											
c. Dependent Variable: Non financial performance											
ANOVA^a											
Model		Sum of Squares		df	Mean Square	F	Sig.				
1	Regression	115.835		1	115.835	2.943	.091 ^b				
	Residual	2401.053		61	39.362						
	Total	2516.889		62							
2	Regression	152.503		2	76.252	1.935	.153 ^c				
	Residual	2364.386		60	39.406						
	Total	2516.889		62							
a. Dependent Variable: Non financial performance											
b. Predictors: (Constant), Knowledge sharing											
c. Predictors: (Constant), Knowledge sharing, Organization learning											
Coefficients^a											
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.					
		B	Std. Error	Beta							
1	(Constant)	51.389	6.364		8.075	.000					
	Knowledge sharing	.175	.102	.215	1.715	.091					
	(Constant) (C)	44.951	9.224		4.873	.000					
2	Knowledge sharing (KS)	.172	.102	.211	1.688	.097					
	Organization learning (OL)	.085	.088	.121	.965	.339					

a. Dependent Variable: Non financial performance

The results presented in Table 11 shows that the model explains 4.6% of the variation and is not statistically significant ($R^2=0.046$, $F=2.943$, $p=0.091$). On addition of the mediator, the model explains 6.1% of the variation and is not statistically significant ($R^2=0.061$, $F=1.935$, $p=0.153$). There is a change of 1.5% ($\Delta R^2=0.015$) with the introduction of organizational learning as a mediator variable. Further, ($\Delta F= 0.931$) and significance F change is 0.339. Therefore organizational learning has a very weak mediating effect on the relationship between knowledge sharing and non financial performance, as shown by change in R^2 . However, the mediating effect is not statistically significant. Since the calculated p-value is greater than 0.05, null hypothesis was not rejected and it was concluded that organizational learning has no statistically significant mediating effect on the relationship between knowledge sharing and non financial performance.

The model coefficients results show that t-tests has p-values that are greater than 0.05 indicating that knowledge sharing and organizational learning has no statistically significant effect on financial performance. This can be interpreted to mean that organizational learning has no statistically significant effect on the relationship between knowledge sharing and non financial performance among top 100 medium-sized companies in Kenya.

Discussion

The findings on the effect of knowledge sharing on organizational performance established that knowledge sharing has a statistically significant effect on organizational performance. The results indicate a positive and statistically

significant effect of knowledge sharing on non financial performance especially learning and growth as well as environmental performance. On the contrary, no statistically significant effect was established between knowledge sharing and financial performance, internal business processes, customer satisfaction and social performance. This study established that knowledge sharing had greater effect on non financial performance than financial performance. This implies that organizations should not only measure performance on the basis of financial measures but should consider non financial indicators of performance.

This study finding is in line with previous findings (Harlow, 2008; Manaf, 2012). Harlow (2008) study on effects of tacit knowledge on firm performance found that tacit knowledge is positively related with firm performance. However, there was a lower relationship on financial outcomes. Harlow concluded that tacit knowledge has a greater effect on innovation than on financial measures. Manaf (2012) found that individual performance increased in a positive direction with knowledge sharing practices. Quigley (2007) found that knowledge sharing had a direct positive influence on performance of managers. Nonaka (2007) added his voice by asserting that integration of individual knowledge into organizational strategy is a basic requirement for future success. Establishing the impact of knowledge sharing on medium-sized companies is a great contribution given their great impact to Kenyan economy This study support resource based theory which examines the resources and capabilities of firms that enable them generate competitive advantage (Barney, 1991). The study

found that sharing knowledge improves organizational performance. The findings would allow managers to look for ways of enhancing knowledge sharing in their firms.

The research findings of this study show that the mediating effect was not statistically significant on both financial and non financial performance. This led to the conclusion that knowledge sharing impacts on organizational performance regardless of the state of organizational learning in the medium-sized companies. Additionally, the relationship between knowledge sharing and organizational performance could also be impacted by other factors not included in this study.

These findings were not supportive of the hypothesis which contended that without organizational learning, knowledge sharing might not effectively translate to organizational performance. Although literature suggests a positive relationship between knowledge sharing and organizational learning (Chien and Tsai, 2012; Easterby-Smith and Prieto, 2007; Zollo and Winter, 2002) no known study has analyzed the mediation role of organizational learning on the relationship between knowledge sharing and organizational performance in a single model. The current study results contributed to knowledge by integrating organizational learning as a mediator variable in the relationship between knowledge sharing and organizational performance. Further, the study confirms that organizational learning has a no statistically significant mediating effect on the relationship between knowledge sharing and organizational performance among the top 100 medium-sized

companies in Kenya. The current finding contributes to the mixed results obtained in previous empirical efforts.

Conclusion

The findings of hypothesis one established that knowledge sharing has a statistically significant effect on organizational performance. The results indicated a positive and statistically significant effect of knowledge sharing on non financial performance especially learning and growth as well as environmental performance. Based on the research findings, this paper concludes that knowledge sharing has a positive and statistically significant effect on firm performance. This implies that organizations should not only measure performance on the basis of financial measures but should consider non financial indicators of performance.

On the mediation effect of organizational learning on the relationship between knowledge sharing and organizational performance, the study concludes that there is no statistically significant mediation effect. This means that organizational learning does not improve the performance of medium-sized companies in Kenya.

Implication of the Study

On policy implication, policy makers can utilize the findings of this study to formulate sound support strategies for medium enterprises. Kenya's Vision 2030, relies heavily on creative talents that can raise the country's international competitiveness through encouraging flourishing of businesses (GoK, 2012). Knowledge sharing plays a vital role in boosting wealth creation, social welfare

and international competitiveness. The findings revealed that knowledge sharing improves learning and growth as well as environmental performance. This is critical in this age of green marketing. Policy makers can utilize the findings of the study to improve local, regional and global competitiveness.

This study has made a significant contribution for managerial practice by addressing how knowledge can be shared in medium-sized companies in Kenya. The findings are useful in identifying the internal environment attributes that are appropriate for enhancing knowledge sharing within an organization. The study further contributes by showing how to make knowledge a strategic choice for improved firm performance by providing a basic framework to shape their knowledge sharing strategies. Finally, it provides medium-sized companies' managers with a strategy to improve their business competitiveness.

Kaplan and Norton (1992) argued that financial measures alone are not sufficient. They championed Balanced Scorecard that included both financial and operational measures. Hubbard (2009) added his voice by improving balanced scorecard to sustainable balanced scorecard by adding the social and environmental dimension to the four dimensions of Kaplan and Norton. The focus of this study on both financial and non financial measures has a practical implication of enabling managers of medium enterprises to better understand whether or not their companies were achieving their long term objectives. The managers would gain from each performance parameter, resulting in even

better performance (Kaplan and Norton, 1996).

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