Global Scientific JOURNALS

GSJ: Volume 6, Issue 11, November 2018, Online: ISSN 2320-9186

www.globalscientificjournal.com

KNOWLEDGE MANAGEMENT AND PERFORMANCE OF PUBLICLY QUOTED COMPANIES AT THE NAIROBI SECURTIES EXCHANGE

Teresa Wangui Wambugu, Peter K'Obonyo, Martin Ogutu, James Kariuki

Teresa Wangui Wambugu is currently pursuing a PhD degree in Business Administration at the University of Nairobi Kenya, teresawangui@gmail.com
Professor Peter KÓbonyo is currently the Deputy Principal in the College of Humanities and Social studies University of Nairobi
Professor Martin Ogutu is currently the PhD program coordinator at the University of Nairobi
Dr. James Kariuki is currently a Lecturer at the University of Nairobi

Key Words
Knowledge Management, Organizational Performance, Publicly Quoted Companies

ABSTRACT

This study conceptualizes relationships among knowledge management, and organizational performance. There is consensus in management literature linking knowledge management with sustained organizational performance. However despite the acknowledgement that knowledge management is a critical necessity for all organizational operations, knowledge management still remains a relatively new field in terms of published empirical research (Foss and Mahnke, 2003). The study's specific objective was to examine the relationship between knowledge management and organizational performance. Through a cross-sectional survey, data was obtained using a structured questionnaire from publicly quoted companies at the Nairobi Securities Exchange (NSE) in Kenya. The current research employed structural equation modelling specifically PLS-SEM to analyse the relationships between the conceptualized constructs. PLS-SEM analysis results indicated a statistically significant direct relationship between knowledge management and organizational performance in publicly quoted companies in the Nairobi securities Exchange. The current thesis adds to theory and empirical evidence that a statistically significant relationship exists between knowledge management and organizational performance in publicly quoted companies at NSE.

The first page should be used only for Title/ Keyword/ Abstract section. The main paper will start from second page.

1. INTRODUCTION

1.1. BACKGROUND

Superior organizational performance is the ultimate objective of managers in any organization. Competitive advantage is appreciated as an antecedent to superior organizational performance (Ray, Barney and Muhanna, 2004). In accordance to Resource Based View (RBV), competitive advantage can only be realized when organizations understand and gainfully employ their internal resources (Barney, 1991). These comprise all organizational capabilities, processes, organizational factors, information and knowledge that an organization owns or controls. Knowledge is perceived as the main national and company resource (Bhatti, Khan, Ahmad, Hussain and Rehma, 2011). Zack (1999), posits that knowledge has become the fundamental basis of competition. However for knowledge to translate into strategic advantage it has to be managed.

According to Sherif, Hoffman and Thomas (2006), knowledge is gradually translating into the most significant element of production, when compared to the traditional factors of production namely; labour, land and capital. Knowledge resources are considered to be a set of unique factors of production. They are differentiated from the customary factors of production aforementioned because those are subject to diminishing returns. In contrast, every incremental unit of knowledge employed successfully leads to a marginal growth in performance (Gold et al., 2001). Chen et al. (2010); asserted that knowledge contributes to and is generated from innovation.

The role and influence of knowledge in the modern social and organizational setting is immensely important. (Foray, 2004; Foss, 2005). OECD (1996) posit that the contemporary economy is based on knowledge. In agreement with this, World Bank (2007) found that the knowledge economy is characterised by a well trained and learned population, institutions that encourage and reward knowledge creation and transfer in the economy aimed at growth, welfare, continued upgrading of information systems, and a relevant innovation system. Pemberton and Stonehouse (2000), hold that knowledge may be personified into an organizations knowledge assets that comprise of its essential proficiencies, value-enhancing undertakings, systems, technology, structures, products and services. Knowledge is a human, highly individual asset and embodies the collective know-how and labour of networks and alliances.

This study is underpinned by a number of theories which inform the study concepts. These theories comprise RBV, Knowledge Based View (KBV) and Dynamic Capabilities theory. In principle, the RBV contends that organizations own assets which equip them to achieve competitive advantage, and thus results into higher sustainable performance (Wernerfelt, 1984). Expanding the customary concept of organizational resource-based competence of the organization's knowledge management (KM) purpose, an organization's KM competence is described as the capability to marshal and employ knowledge based resources and combine them with other resources and competences. The knowledge management resources in addition consists of capabilities which are challenging to replicate (Johannessen and Olsen, 2003).

1.1.1 Knowledge Management and Publicly Quoted Companies

Publicly quoted companies are representative of the overall companies in a country. An assessment of the performance of these companies is expected to be an indicator of the country's economic status. Hence a large group of stakeholders in the publicly quoted companies are interested in the performance of these companies and in the measures that can be used to improve their performance. According to Fraihat and Samadi (2017), most studies on publicly quoted companies have concentrated on structure, capital and other broad characteristics of the said companies. In addition, many of these studies employed the use of secondary data. As such, the role of Knowledge management in the performance of publicly qouted companies has not been adequately determined.

Gold, Malhotra and Segars (2001), posit that knowledge management capability enhances organizational effectiveness. Fraihat and Samadi (2017) conducted a conceptual study on knowledge management capabilities and performance of publicly quoted companies and formulated a conceptual framework which proposed that knowledge management could affect the performance of publicly quoted organizations. The extant study improves on the aforementioned conceptual study by carrying out an empirical study on the relationship between knowledge management and performance of organizations publicly quoted at the Nairobi Securities Exchange (NSE).

A study by Maasoumabad and Norouzi (2015) indicate that knowledge management had a direct and significant effect on improved performance in the motor vehicle manufacturing firms listed on the Tehran Stock Exchange. In Kenya, Osano (2006), found that 59% of the publicly quoted companies in the Nairobi Securities Exchange (NSE) had a knowledge management strategy, while most of the others were in the process of adopting one. However over 40% of these companies had a knowledge management strategy by default and were not consciously making use of it. A majority of workers in these companies were not familiar with the concept of knowledge management. Over ten years later, the extant study set out to determine the status of knowledge management of publicly quoted companies in the Nairobi Securities Exchange, particularly focusing on the relationship between knowledge management and organizational performance.

1.2 Research Objective

The objective of the current study was to determine the relationship between knowledge management and organizational performance of publicly quoted companies at the Nairobi Securities Exchange. This gave rise to the following hypothesis.

H_1: There is a relationship between Knowledge management and organizational performance in publicly quoted companies at Nairobi Securities Exchange."

1.3 Methodology

1.3.1 Research Design

This study used a cross sectional survey research design. This research entailed collecting data from the population of study during a period of time and drawing deductions from this data. According to (Cooper and Schindler (2008), a cross-sectional survey is used to collect data from a selected population. This data is used to explain an existing phenomenon through enquiry on the respondent's views, behaviours, attitudes, or ideals. The cross sectional survey was chosen for this study because it involves collecting data at one time from all the firms publicly qouted at the NSE by the end of 2015. The design offered the researcher an opportunity to capture population characteristics and test hypotheses.

1.3.2 Study Population

The extant study's 'population involved all organizations that were listed on the NSE which stood at 61 in number by the end of 2015. Therefore this study applied a census approach. This is because the organizations listed at the NSE were too few to qualify for a sample extraction. According to Bartlett, Kotrlik and Higgins (2001), the minimum suitable population for sampling is 100 elements. The firms listed on the NSE were chosen because they cut across all sectors of the economy namely, agriculture, vehicles and fittings, banking, commercial and services, building and allied, energy and petroleum, insurance, industrial and allied, telecommunication and technology, and growth enterprise market. Cabrita and Bontis (2008) recommended that a suitable population should offer the advantage of comparison of companies within the same industry and across different industries, therefore publicly quoted companies on the NSE are appropriate.

1.3.3 Data Collection

This study made use of both primary and secondary data. Data collection was done through a semi structured questionnaire. To collect primary data from respondents a five point Likert type scale was used. In this scale, 1 represents "not at all"; 2 "to a small extent"; 3"to a moderate extent"; and 5 "to a very large extent". The questionnaires were distributed and responses collected by the researcher. Respondents consisted of an individual manager from each company with an emphasis on Human resource managers and General Managers among others. These managers were chosen as the preferred respondents because they were perceived to have access to the information required for this study. In addition the researcher used secondary data on financial performance from the financial reports of the year ended December 2015. These were readily available from the organizational financial online reports with an exception of a few organizations.

Data analysis involved estimation of both the measurement and structural models, the testing of the hypothesis and determining the models predictive relevance. This was done using structural equation modeling (SEM), particularly the Partial Least Squares structural equation modelling (PLS-SEM). The study employed the SmartPLS software tool, version 3.2.1 for analysis of primary data (Hair, Ringle & Sarstedt, 2013; Hair, Sarstedt, Hopkins & Kuppelwieser, 2014). In congruence with the current study's philosophical paradigm, SEM is appropriate for studies based on positivist epistemological belief (Urbach & Ahlemann, 2010). Descriptive analysis was computed to describe the demographic characteristics of the organizations and the respondents.

2. LITERATURE REVIEW

2.1 Knowledge Management

Blanchard and Thacker (2009) defined knowledge as a systematic framework of realities, ideologies, processes and information attained with time. On the other hand, Noe (2008), defined knowledge as what individuals or teams of employees know, organizational guidelines, procedures, tools, and routines. Davenport and Prusak (2000) hold that knowledge is a mix of practice, standards, firm specific information and skilled perception which provide a basis for evaluation and incorporation of fresh practices and information. O'Dell and Grayson (1998), posit that innovation of products, routines, services, associations, fresh markets and segments all lead to knowledge creation.

The advancement and practice of Knowledge management is incessantly and strongly increasing in organizations. As a consequence of developments in Knowledge Management, the contest in search of sustainable competitive advantage via knowledge continues to intensify at a rapid speed (Hofer-Alfeis, 2003). Knowledge management involves the management of the knowledge base of an organization. Zeleny, Comet and Stoner, (1990) posit that an organization's knowledge base consists of brainware (human experience, skills and acquired knowledge) and hardware which are made up of procedures, technology and other physical objects that incorporate knowledge. In addition it includes groupware which comprises informal processes, rules of thumb, stories and unrecorded codes of behaviour. It also consist of document ware which comprises of all organizational documents contained in the information systems such as databanks, recorded reports, handbooks, patents and formally documented knowledge.

Knowledge management is a basis for using systems and procedures at the personal, group, and organizational levels to facilitate the organization to learn from its existing knowledge and obtain fresh knowledge to generate value for stakeholders. A knowledge management framework integrates individuals, practices and equipment to enhance performance and learning for long term progress (Tantawy-Monsou, 2005). Gupta and Govindarajan (2000) define knowledge management as the practice that enable organizations to unearth, select, systematise, distribute, and transmit crucial information and competence that is essential for problem resolution, dynamic learning, tactical planning and decision making. Organizations which do not apply formal knowledge management practices may fail to capture and reuse good or

best practices, consequently risking repeating previous mistakes. Such organizations are likely to lose what employees learn but never share about suppliers, customers, partners or competitors (Gore lick and Tantawy-Monsou, 2005).

2.2 Organizational Performance

Balta (2008) found organizational performance to be an intricate and multifaceted phenomenon. In agreement with this Richard, Devinney, Yip, and Johnstone (2009) posit that organizational performance comprises three precise parts of organizational results; financial results consisting of return on investments, profits and return on assets; market outcomes in terms of market share and sales; and investor yield in terms of aggregate investor profit and economic value addition. Eisenhardt and Santos (2002), found that most researchers in knowledge management did not study performance, while others merely stated that some knowledge management practices would enhance an organizations competitive advantage and performance. This indicates that more research needs to be done on organizational performance because it is an important indicator of the wellbeing of organizations and iconsequently the wellbeing of an economy.

From a customary standpoint, organizational performance is usually represented as financial performance, however consideration of finances, resources, operations, services, markets and human resources are vital in the determination of the overall bottom line of a company (Dixon, 1999). In an effort to measure performance, such tools as the Balanced Score Card (BSC) and Intellectual Capital (IC) concepts have emerged. These concepts measure both financial and non-financial performance. To measure financial and non-financial aspects of organizational performance, the researcher adopted the use of the BSC proposed by Norton and Kaplan (1996). In the BSC, performance is measured by including financial performance and measures that are not financial which comprise customer perspective, internal business process and organization learning and growth.

2.3 Knowledge Management and Organizational Performance

A number of scholars have done empirical research concerning the relationship between knowledge management and organizational performance. Choi et al. (2008) carried out a study on the effects of knowledge management strategy on organizational performance. Data was collected from 900 large and profitable Korean companies. A survey was conducted resulting into a response rate of 14.6 %. Majority of these organizations (43 %) were in the manufacturing sector. The study resulted in mixed results in that some strategies were found to have a positive correlation with organizational performance while other were negatively correlated to organizational performance. They found that when knowledge is generated and dispersed throughout the organization, it enhances the organization's value by increasing its proficiency to respond to fresh and unfamiliar circumstances. The study was however carried out only among large and profitable organizations making it prone to a bias that could have enabled knowledge management strategies to perform above the norm. The validity of the results may not also be generalizable to organizations globally because the study was limited to large, profitable, Korean organizations.

Yli-Renko, Autio and Sapienza (2001) carried out a study on social capital, knowledge acquisition and knowledge exploitation among fledgling technology based companies in the United Kingdom. A survey was carried out on 936 firms that were between one and ten years old, that were independent, and involved in developing, commercializing or manufacturing innovative technology. 180 returned questionnaires were useable; a response rate of 19.2%. The study revealed that knowledge procurement was positively correlated with several organizational results including innovation in new products, improved technological advancement, and cost reduction in sales. The results may not be generalizable to companies that exist in less dynamic business environments with less technology.

Locally, (Ogendo, 2014) examined knowledge transfer, strategy content, external environment and performance of organizations listed on the NSE. Ogendo found that knowledge transfer has significant effect on performance and strategy content. The study used multiple regression analysis to assess the hypotheses and hierarchical method to test the moderating effect. The study did not include other indicators of knowledge management namely knowledge acquisition, knowledge sharing and knowledge application. Maseki (2012) conducted a study to examine the relationship between knowledge management and performance of commercial banks in Kenya. They used a questionnaire comprising of open ended and closed ended questions to collect primary data. The population comprised of 43 commercial banks operating in Kenya as at 31st December, 2011 in which they used content analysis. The study established that knowledge management led to improvement of product and service quality, increased throughput, inventive capability and undertakings. Competitive capability and positioning in the business environment improved with embracing of knowledge management.

Riungu (2015) examined the effect of knowledge management practices on organizational performance of Kenyan mobile telephone companies. The researcher used open and closed ended questions to gather data. Both descriptive and regression analysis were used to analyze data. The research findings were that knowledge management practices influences organizations by improving employee knowledge, decision making, improving service provision, reducing operation costs and improving competitiveness. Riungu (2015) collected data in only 21 Kenyan mobile telephone companies. This population of study represented a very small sample of only one sector in the Kenyan economy, therefore the results may not be generalizable to other organizations.

3. FINDINGS

3.1 Response Rate

The population of the study entailed all the organizations that were listed on the NSE as at the end of 2015. There were 61 publicly quoted companies as at 2015. In the course of the study the researcher found that one company had been delisted while another had been suspended. The total number of companies surveyed thus reduced to 59. Out of these, 46 respondents returned their filled responses. However only 43 questionnaires were usable, translating into a response rate 73%. This response rate was good based on the fact that Baruch and Holtom (2008) concluded that a 35% response rate is adequate for a cross sectional survey.

3.2 Demographic Analysis

Demographic analysis in the extant research comprises of description of the distribution of the respondents by job title, work experience in current organization, response rate in terms of the industry the organization operates in, the size of the organization and financial performance in terms of Return on Assets.

3.2.1 Distribution of Respondent by Job Title

The target respondents of the current study were managers in the organizations. Most of the respondents turned out to be Human resource managers, General Managers and ICT managers. The respondents were required to indicate their job titles. The job profiles of the respondents is presented in Table 3.1.

Job Title	Frequency	Percent
Human Resource Manager	10	23
General Manager	10	23
ICT Manager	8	19
Business Administration Manager	6	14
Operations Manager	3	7
Finance Manager	3	7
Marketing Manager	2	5
Manager Engineering	1	2
Totals	43	100

Table 3.1: Respondents Job Title
Source: Primary data

3.2.2 Distribution of Respondent by Experience

The respondents had to indicate how long they had worked in their current organization. The responses were grouped into seven major groupings by years of experience as follows; (0 – 10), (11-15), (21-25) (26-30) and (over 30) years. The responses are presented in Table 3.2 below. Over 70 % of the respondents had stayed in their present organization for 10 years and below. This indicated that there was high turnover in the organizations listed in the NSE and that most managerial positions were filled from without the organizations. This is likely to be the case because most managers could not have risen to the managerial positions within the organizations in only ten years and below.

Years	Frequency	Percentages
0 – 10	31	72
11 – 15	5	12
16 – 20	1	2
21 – 25	4	9
26 – 30	2	5
Over 30	0	0
Totals	43	100

Table 3.2: Experience of respondent in Current Organization
Source: Primary data (2018)

3.2.3 Response Rate by Industry

In the NSE, organizations are classified according to industry. Most of the respondents were from the banking sector which achieved 23% of all the responses. This was followed by commercial services which achieved 19 % of the responses. The insurance sector achieved 14%, industrial and allied 12%, motor vehicles and fittings, 7%, agricultural 7% and growth enterprise marketing segment 2%. This information is presented in Table 3.3.

Industry	Frequency	Percentage
Agriculture	3	7
Vehicles and Fittings	3	7
Financial services	10	23
Commercial Services	8	19
building and Allied	2	5
Energy and Petroleum	4	9
Insurance	6	14
Investments	1	2
Industrial	5	12
Telecommunications and Technology	0	0
Growth enterprise Market	1	2
Totals	43	100

Table 3.3: Response Rate by Industry
Source: Primary data (2018)

3.2.4 The Size of the Organization

Respondents were asked to answer a question on the number of employees in their organization. This was aimed at assisting in the determination of the size of the organization. Employee numbers is a crucial the indicator of the size of a company. The different responses were categorized as follows; (0 – 49) employees, (50 - 499), (1000 – 1499), (1500 – 1999) and (2000 plus). 35% of the companies had between 50 and 499 employees, 19% had between 500 and 999 employees, 19% had over 2000 employees, 16% had between 1000 and 1499 employees, 9% had below 50 employees and only 2 5 had between 1500 and 1999 employees. This information is presented in Table 3.4 below. According to OECD (2005), any organization with less than 250 employees is a small and Micro enterprise. While organizations with 250 and above are considered to be large (Ambula 2015). In view of this, the majority of the organizations listed on the NSE are large.

Number of employees	Frequency	Percentage
1 -49	4	9
50- 499	15	35
500 – 999	8	19
1000 – 1499	7	16
1500 – 1999	1	2
2000 plus	8	19
Total	43	100

Table 3.4: Size of the Organization
Source: Primary data (2018)

3.2.5 Frequency of Training

This section was aimed at assessing how often the different organizations carried out training of their employees. The frequency of training was classified into; weekly, monthly, quarterly, after six months, once a year and on needs basis. The responses indicated that 54% of the organizations trained as need arose, 7 % trained on a monthly basis, 5% on weekly basis, 4% trained quarterly, 3% trained once in six

months and 1 % trained once in a year. From this summary, the conclusion is that most organizations in the NSE trained their employees when need arose. This indicated an absence of structured training plans in a majority of the organizations. This could imply that the organizations listed at the NSE, are not very strong on training. This is presented in Table 3.5.

	Frequency	Percentage
Weekly	5	12
Monthly	7	16
Quarterly	4	9
After six months	3	7
Once a year	1	2
On needs basis	23	54
Total	43	100

Table 3.5: Distribution of Respondents by Frequency of Training
Source: Primary data (2018)

3.2.6 Financial Performance (Return on Assets)

This section gives the descriptive reports on secondary data detailing the Return on Assets (ROA). ROA reports were accessed for 40 companies. A summary of the reports indicated that 17.5% of the companies reported a negative ROA percentage. 37.5% of the companies reported between 0.1% and 5% ROA, while 17.5% of the companies reported between >5% and 10% of ROA, 12.5% reported between >10 % and 15% reported ROA of above 15%. This indicates that over 80% of the companies reported a positive return on assets with only 19% reporting a negative return on assets.

According to Investopedia (2017), as a rule of thumb, a ROA of 5% is good. However it differs according to industry. For banks a ROA of 1.5% and above is good. In the farming industry (Kohl, 2009) holds that a ROA of less than 1% is weak, one of between 1-5% is stable while any ROA above 5% is considered to be strong. In view of this, it is notable that for publicly quoted companies on the NSE only 17.5% reported a ROA of less than 1%, 82.5% achieved a ROA of 1% and above. Out of these, 45% reported a ROA of above 5%, which indicates a strong performance. It is worth noting that 15% of these companies achieved a very strong ROA of above 15%. A summary of the ROA report in the NSE is presented in the Table 3.6.

Percentage return on assets	**Number of companies**	**Percent of companies**
1. -%	7	17.5
2. 0 - 5%	15	37.5
3. >5. – 10%	7	17.5
4. >10. -15%	5	12.5
5. Above 15%	6	15
Totals	40	100

Table 3.6 Financial Performance (ROA)
Source: Primary data (2018)

3.3. Measurement Model Evaluation

3.3.1 Measurement Model's Indicator Loadings and Indicator Reliability

In a reflective model, a researcher starts by examining the indicator loadings which is similar to factor analysis. Indicator loadings are also known as outer model loadings or measurement loadings. These are considered to be a form of indicator reliability coefficients for reflective models (Garson, 2016). Data is standardized automatically in SmartPLS, hence the loadings vary from 0 to 1. The closer to 1, the loadings are the more reliable the indicator is. Indicator loadings of 0.7 signify that a construct explains about 50% of the indicator's variance (Henseler et al., 2012). As a rule of thumb an indicator with a loading below 0.7 should be dropped to improve composite reliability (Hair et al., 2014). Any indicator with loadings of less than 0.7 is dropped one at a time and the analysis run each time an indicator is dropped until only those with loadings of 0.7 and above remain. In this study the construct knowledge management originally had 16 indicators, 7 indicators were dropped leaving only 9 indicators which achieved loadings of 0.7 and above. The dependent construct of organizational performance had 18 indicators, 3 were dropped leaving 15.

3.3.2 Measurement Model's Internal Consistency Reliability

Internal consistency reliability was measured using the composite reliability measure which is a less conservative measure as compared to Cronbach's (1951) alpha measure. The Composite reliability measure ought to be 0.7 or higher. Higher levels in terms of composite reliability indicate higher levels of internal consistency (Bagozzi and Yi 1988; Hair et al. 2012). Results of composite reliability in the current study were as follows: knowledge management construct 0.929, organizational performance; 0.961. These exceeded the minimum requirement of a level of 0.7. This indicates high levels of internal consistency reliability for both constructs in the model. In addition to the composite reliability test, the Cronbach's alpha statistical test was also carried out. The Cronbach's alpha coefficient ranges from 0 to 1. The higher the coefficient the more reliable the scale. Similar to the acceptable measure of composite reliability, (Nunnally, 1978) suggested that as a rule of thumb, a reliability coefficient value equal to or above 0.7 is statistically acceptable for a study. In comparison the Cronbach alpha results for knowledge management are 0.914 and organizational performance 0.957. These results are very close to those from the composite reliability tests and indicate high levels of internal consistency reliability. This is presented in table 3.7.

	Cronbach's Alpha	Composite Reliability
Knowledge management	0.914	0.929
Organizational performance	0.957	0.961

Table 3.7 Cronbach Alpha and Composite reliability

Source: Primary Data (2018)

3.3.3. Measurement Model's Convergent Validity

Convergent validity evaluates the level to which a construct converges in its indicators by explaining the indicators variance. Fornell and Larcker (1981) direct that convergent validity is determined by calculating the AVE for all indicators related to each construct. The AVE value is the mean of the squared loadings of all the indicators of a construct. An acceptable AVE value should be equal to or greater than 0.50. This implies that 50% or more of the indicators variance can be explained (Chin, 2010). Table 3.8 presents the AVE values for the extant study. The Fornell and Larcker (1981) criterion established that all the AVE values for the reconfigured reflective constructs were higher than the squared interconstruct correlations. The AVE value for knowledge management is 0.571, while the AVE value for organizational perfor-

mance is 0.625, which exceeds the endorsed threshold value of 0.5. In conclusion therefore, the respecified measurement model has satisfactory convergent validity.

	Average Variance Extracted (AVE)
Knowledge management	0.593
Organizational performance	0.625

Table 3.8: Average Variance Extracted (AVE)

Source: Current Researcher (2018)

3.3.4. Measurement Model's Discriminant Validity

Discriminant validity assesses the level to which an individual construct is empirically dissimilar from the other constructs. This measure is necessary so as to guarantee that a reflective construct has stronger relationships with its own indicators when compared with its relationship with the indicators of other constructs in the SEM model (Hair et al 2014). For this analysis the heterotrait-monotrait (HTMT) ratio measure of discriminant validity was used. In a good model, the heterotrait correlations should be less than the monotrait correlations translating to a HTMT ratio of below 1.0 (Henseler et al. 2015, Teo, Srivastava, & Jiang, 2008, Gold et al., 2001) further agree that if the HTMT ratio measures below 0.9, this establishes discriminant validity amid a given pair of reflective latent constructs. In the current study the pair of latent constructs were found to have a $HTMT_{ratio}$ value of 0.840 therefore indicating discriminant validity between knowledge management and organizational performance.

3.4. Assessment of the Structural Model

Once the measurement model assessment has been completed and the model has been found to be satisfactory, the structural model is examined. The extant measurement model was found to satisfy the validity and reliability requirements. Endorsing the structural model aids the researcher to methodically evaluate the plausibility of the hypotheses in the structural model (Garson, 2016).

3.4.1. Goodness of Fit for the Structural Model

The PLS-SEM model is presumed to have the correct specifications and is therefore tested based on how well it predicts the endogenous constructs. This is done through testing the statistical significance of the path coefficients and measurement of the coefficients of determination (R^2), also known as the predictive power of the exogenous constructs. This is done simultaneously with the evaluation of the R^2 change (f^2 effect size). Before this can be done, analysis has to be carried out to test for potential multicolliniearity between the constructs. In PLS SEM the level of multicollinearity is indicated by the VIF coefficients. A well-fitting model without multicollinearity should have VIF coefficients of less than 5.0 (Sarstedt, Ringle, Smith, & Hair, 2014). In the current model the VIF value was 3.518, which is below 5.0 indicating absence of collinearity.

4. DISCUSSION

4.1 The Hypothesized Relationship between Knowledge Management and Organizational Performance

The hypothesis proposes that there is a relationship between knowledge management and organizational performance of publicly quoted companies in the Nairobi Securities Exchange. The PLS-SEM analysis on this hypothesis gave rise to the following results: $\beta = 0.801$, t =

14.220. P < 0.05. These results indicate a positive and significant path relationship between knowledge management and organizational performance. The predictive power (coefficient of determination) results were, R^2 = 0.641, t =7.130, P < 0.05 and f^2 = 1.786. This indicates that 64.1% of the variance in organizational performance in this model can be explained by knowledge management. According to Garson (2016), an R^2 value of 0.67 indicates substantial predictive power, while 0.33 is moderate and 0.25 weak. Hence a predictive power of 0.641 is moderate. These results specify a positive statistically significant relationship between knowledge management and organizational performance. The f^2 effect size is large. Therefore the hypothesis is confirmed at the significance level of (t >1.96, P≤ 0.05).

This revelation is in line with previous empirical studies such as (Forghani et al., 2017) who found that there was a significant relationship amid knowledge management dimensions and organizational performance in lean manufacturing in Iran. Empirical studies by (Hitt et al. 2001; Bogner et al. 1999) found knowledge to be a very critical intangible asset within which information is embedded. Choi et al. (2008) studied the effect of knowledge management strategy on organizational performance and concluded that some strategies had a positive correlation with organizational performance while others were negatively correlated with organizational performance.

Mills and Smith (2011) report was inconclusive on the knowledge management capability-performance link, they found that not every dimensions of knowledge management capability is significantly correlated with performance. Despite this some of the Scholars seem to have reached a consensus that knowledge management will be the most significant source of competitive advantage for organizations in future (Ferran-Urdaneta, 1999). Practitioners in US and Europe, have reached a consensus that knowledge is crucial for sustainable competitive advantage and greater performance (KPMG Management Consulting, 1998; Price Water House Coopers and World Economic Forum, 1999).

5. CONCLUSION

5.1. Conclusions of the Study

The objective of the extant study was to determine whether there is a relationship between knowledge management and organizational performance. Using SmartPLS 3.2.1 application, PLS SEM analysis was conducted to test the direct relationship between knowledge management and organizational performance. Results indicated that knowledge management had a positive and statistically significant effect on organizational performance of publicly quoted companies at the Nairobi Securities Exchange. Therefore the hypothesis of the study was confirmed. The findings further extend the argument in RBV and KBV where knowledge is a crucial resource with the capability to enhance an organization's competitive advantage (Grant, 1996). The study findings confirm that knowledge management is a very crucial factor that enhances organizational performance. Therefore in order to enhance performance, organizations should purposefully manage knowledge in terms of knowledge acquisition, knowledge sharing and knowledge application.

5.2. The Implication of study

The results of the current study indicate a positive and significant relationship between knowledge management and organizational performance. This revelation is in line with previous empirical studies such as (Forghani et al., 2017) who found that there was a significant relationship amid knowledge management dimensions and organizational performance in lean manufacturing in Iran. Empirical studies by (Hitt et al.2001; Bogner et al. 1999) found knowledge to be a very critical intangible asset within which information is embedded. This is in agreement with the Resource-based theory which was developed in an attempt to explain how organizations attain long lasting competitive advantage. RBV holds that competitive advantage emanate from organizational resources and competences characterized by value and are rare, inimitable and unsubstitutable (Barney, 1991). These constitute an organizations' unique competences (Prahalad and Hamel, 1990)

which hence result into long term competitive advantage.

Scholars have linked dynamic capabilities to organizational knowledge. This being the case, they suggest that dynamic capabilities influence the sustained and long lasting rejuvenation of the organization. These are underpinned by the application of extant knowledge-based competencies and the acquisition of fresh knowledge-based competencies (Gibson and Birkinshaw, 2004). Sarvary (1999) holds that as knowledge is generated and transferred throughout the organization, it has the capability to enhance the organizations value by improving its ability to react to vibrant modifications in the environment. The results of the current study on the relationship between knowledge management and organizational performance support the dynamic capabilities theory which implies that knowledge and consequently knowledge management enhance organizational capabilities resulting into organizational performance.

5.3. Limitations of the Study

Data was collected from one manager from each organization. These managers were drawn from various departments and included Human resource managers, ICT managers, Finance managers, General Managers, and Operation Managers among others. Though the respondents were expected to give objective responses, the fact that they were from different departments may have led to differences in the way they responded to questionnaire items due to differences in their work which could lead to differing perceptions.

The survey consisted of self- reports and may have been affected by social desirability biases, common method variance, and response distortion which occur due to ego defense behaviour. In some cases a respondent may have chosen an answer aimed at giving a good image of the organization and therefore failed to give the correct responses. This may have led to a choice of the mid-scale point, or the choice the respondent perceived as the most desirable in the likert type scale.

The response rate could have been better had all the managers been cooperative. A few companies refused to participate at all while in some others the questionnaire was not returned. The researcher eventually had to give up after numerous attempts to collect the filled questionnaire failed. This led to a lot of waste in terms of the limited time and funds available for data collection. However these companies were very few and the response rate was high. Therefore this did not affect the results of the study adversely as the response rate was high.

This study involved only the publicly quoted companies on the NSE in Kenya. This represents most of the sectors of the Kenyan economy and consists of medium and large organizations of the Kenyan economy. Future research could widen the scope and carry out a study including the East African region.

The moderating construct was operationalized into human capital, IT capability and culture as organizational characteristics. This construct was found to have a negative but statistically insignificant moderating effect on the relationship between knowledge management and organizational performance. This finding was unexpected since the characteristics are considered to be enablers of knowledge management. In an effort to gain in-depth empirical evidence or validation, this study recommends that similar studies are done considering each of the factors in organizational characteristics namely culture, human capital and IT capability individually as moderators in the relationship between knowledge management and organizational performance.

This study used a cross-sectional design. This may have led to the failure of the financial performance measure in terms of reliability. Fu-

ture research could use the longitudinal research design which would improve on the data for financial management. This study employed the use of Return on Assets (ROA) to measure financial performance. Future research could make use of more measures of financial performance as opposed to a single measure.

REFERENCES

Africa Economic Outlook (2015). *Kenya economic survey* 2014. UNDP

Ambula, R. (2015). Learning Organization, Knowledge Management, Employee Outcomes and Performance of Large Manufacturing Firms in Kenya. *Unpublished PhD Thesis*, University of Nairobi.

Bagozzi, R. P., & Yi, Y. (1988). On the evaluation of structural equation models. *Journal of the Academy of Marketing Science*, *16*(1), 74–94.

Balta, M. E. (2008). *The Impact of Business Environment and Boards of Directors on Strategic Decision Making*: *A Case Study of Greek Listed Companies*, (Unpublished PhD Thesis). Brunei Business School.

Barney, J. (1991). Firm Resources and Sustained Competitive Advantage. *Journal of Management*, 17 (1), 99-120.

Bartlett, J.E., Kotrlik, J.W. and Higgins, C.C. (2001) Organizational Research: Determining Appropriate Sample Size in Survey Research. *Information Technology, Learning, and Performance Journal*, 19, 43-50.

Blanchard, P., & Thacker, J. (2009). *Effective training: Systems strategies and practices*. In (4th ed.), Learning, motivation, and performance (p. 58-90). New Jersey: Prentice Hall.

Cabrita, R., & Bontis, N. (2008). Intellectual capital and business performance in Portuguese banking industry. *International Journal of Technology Management*, 43, 212-237.

Chen, C. J., Huang, J. W., & Hsiao, Y. C. (2010). Knowledge management and innovativeness: The role of organizational climate and structure. *International Journal of Manpower*, 31(8), 848-870.

Chin, W. W. (2010). *How to Write Up and report PLS Analyses,* in Handbook of Partial Least Squares, V. E. Vinzi, W. W. Chin, J. Henseler, and H. Wang (eds.), Berlin: Springer-Verlag, 655-690.

Choi, B., Poon, S.K., & Davis, J.G. (2008). Effects of knowledge management strategy on organizational performance: A complementarity theory-based approach. *The International Journal of Management Science*, 36, 235-251.

Cooper, D. R., & Schindler, P.S. (2008). *Business research methods.* 10th Edition, McGraw-Hill Higher Education.

Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika,* 16(3), 297–334.

Davenport, T. & Prusak, L. (2000). *Working Knowledge: How Organizations Manage What They Know*. Harvard Business School Press. Boston: Massachusetts.

Dixon, N. (1999). *The Organizational learning Cycle: How We Can Learn Collectively*. Gower, England.

Eisenhardt, K. M., & Santos, F. M. (2002). *Knowledge-based view: A new theory of strategy?* In Pettigrew, A., Thomas, H. and Whittington, r. (Eds.) Handbook of Strategy and Management, Sage Publications.

Ferran-Urdaneta, C. (1999). *Teams or Communities, Proceedings of the 1999 ACM SIGCPR Conference on Computer Personnel Research*. April 8-10, New Orleans: LA.

Foray, D. (2004). *The economics of knowledge*. MIT Press, Cambridge: Gilford, 1979.

Forghani, M. A., & Tavasoli, A. (2017). Investigating the relationship between knowledge management and organizational performance in lean manufacturing. *International Journal of Management, Accounting and Economics,* 4 (3), 218-226.

Fornell, C., & Larcker, D.F. (1981). Evaluating Structural Equations Models with Unobservable Variables and Measurement Error. *Journal of Marketing Research*, 18(1), 39-50.

Foss, N. J. (2005). *Strategy, economic organization and the knowledge economy, The Coordination of firms and resources,* Oxford University Press, Oxford.

Garson, G. D. (2016). *Partial Least Squares: Regression and Structural Equation Models.* Statistical Associates Publishing, Asheboro USA.

Gibson, C. B., & Birkinshaw, J. (2004). The antecedents, consequences, and mediating role of organizational ambidexterity. *Academy of Management Journal*, 47(2), 209–226.

Gold, A. H., Malhotra, A., & Segars, A.H. (2001). Knowledge management: An organizational capabilities perspective. *Journal of Management Information Systems*. 18 (1), 185-214.

Grant, R. M. (1996). Toward a knowledge-based theory of the firm. *Strategic Management*

Hair, J.F., Hult, G.T.M., Ringle, C.M., Sarstedt, M., 2013. A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM). Sage, Thousand Oaks.

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2014). A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM). Thousand Oaks: Sage.

Hair, J. F., Sarstedt, M., Ringle, C.M., & Mena, J. A. (2012). An assessment of the use of partial least squares structural equation modelling in marketing research. *Journal of the Academy of Marketing Science,* 40(3), 414–433.

Henseler, J., Ringle, C.M. and Sarstedt, M. (2012), *Using partial least squares path modeling in international advertising research: basic concepts and recent issues*, in Okazaki, S. (Ed.), Handbook of Research in International Advertising, Edward Elgar Publishing, Cheltenham, pp. 252-276.

Henseler, J., Ringle, C.M. and Sarstedt, M. (2015), A new criterion for assessing discriminant validity in variance-based structural equation modeling, *Journal of the Academy of Marketing Science*, 43 (1), 115-135.

Hitt, M. A., Bierman, L., Shimizu, K., & Kochhar, R. (2001). Direct and moderating effects of human capital on strategy and performance in professional service firms: A resource-based perspective. *Academy of Management Journal*, 44 (1), 13-28.

KPMG Management Consulting (1998). *The Knowledge Management Research Report,* A survey of 100 European Companies by the Harris Research Center.

Mills, A. M., & Smith, T. A (2011). Knowledge management and organizational performance: a decomposed view, *Journal of Knowledge Management*, 15(1), 56 – 171.

Moffett, S., R. McAdam, & Parkinson, S. (2003). An empirical analysis of knowledge management applications. *Journal of Knowledge Management*, 7 (3), 6-26.

Morton, K. (1995). The irony of service: Charity, projects and social change in service learning. *Michigan Journal of Community Service Learning, 2*, 19-32.

Nairobi Securities Exchange (2014), Annual report and financial statement.

Nairobi Securities Exchange (2015-2017), Investors Handbook,

Noe, R. (2008). *Employee training and development*. New York: McGraw-Hill/Irwin.

Norton, D. & Kaplan, R. (1996). *The Balanced Scorecard: Translating Strategy into Action. MA: Harvard Business School.*

Nunnally, J. C. (1978). *Psychometric theory* (2nd ed). New York, NY: McGraw-Hill.

O'Dell , C., & Grayson, C. J. (1998). If only we knew what we know: The transfer of internal knowledge and best practice. *Journal of Management Studies,* 47 (6), 1154-1191.

OECD. (2005). OECD Science, Technology and Industry Scoreboard 2005. Executive Summary [webdocument]. Available at: http://www.oecd.org/dataoecd/59/52/35465901.pdf.

Pemberton, J. D. & Stonehouse, G. H. (2000). Organizational learning and knowledge assets: An essential partnership. *The Learning Organization*, 7(4), 184–193.

Prahalad, C. K. & Hamel, C. (1990). The core competence of the corporation. *Havard Business Review,* 68 (3), 79-91.

Price Water House Coopers and World Economic Forum (1999). *Inside the Mind of the CEO.* The 1999 Global CEO Survey.

Richard, P. J., Devinney, T. M., Yip, G. S., & Johnstone, G. (2009). Measuring Organizational Performance: Towards Methodological Best practices. *Journal of Management*, 35(3), 718-804.

Sarvary, M. (1999). Knowledge management and competition in the consulting industry. *California Management Review*, 41(2):95–107.

Sherif, K., Hoffman, J., & Thomas, B. (2006). Can technology build organizational social capital? The case of a global IT consulting firm. *Information and Management*, 43, 795–804.

Teo, T. S. H., Srivastava, S. C., & Jiang, L. (2008). Trust and electronic government success: an empirical study. *Journal of Management Information Systems*, 25(3), 99–132

Wenger, E. (1998). *Communities of practice: Learning, meaning, and identity*; Cambridge University Press.

Yli-Renko, H., Autio, E., & Sapienza, H. J. (2001). Social capital, knowledge acquisition, and knowledge exploitation in young, technology-based firms. *Strategic Management Journal*, 22, 587-613.

Zeleny. M., Comet, R. J., & Stoner, J. A. F. (1990). Moving from the age of specialization to the era of integration. *Human System Management*. 9, 153- 17.