



MEASURING THE EFFECT OF KNOWLEDGE MANAGEMENT ON LEARNING ORGANIZATION AND FIRM PERFORMANCE IN MANUFACTURING FIRMS IN KENYA

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Abstract

The benefits of learning organization are well articulated in management literature. Proponents of the learning organization concept suggest that adopting learning organization practices promotes individual, team and organizational learning which in turn contribute to improved firm performance. However, few empirical studies address the processes required to build learning organizations and their potential impact on firm performance. This study sort to contribute to this growing body of knowledge by examining the moderating effect of knowledge management in the relationship between learning organization and performance of manufacturing firms in Kenya. The descriptive survey design was adopted. Data was collected from a cross section of study units. A structured questionnaire based on a five point likert scale was used to collect primary data. Findings of the study did not provide sufficient evidence to support the moderating effect of knowledge management in the relationship between learning organization and firm performance. Lack of support for moderation implies that manufacturing firms are not keen on institutionalizing knowledge management practices given the high levels of competition they face.

Keywords: Learning organization (LO), knowledge management (KM), firm performance (FP)

INTRODUCTION

Rapid change in environment, growth in information technology and increase in competitive pressure have contributed to the general interest in knowledge management (Mahdinezhad et al. 2018). A firm's performance and survival are determined by the speed at which the firm develops knowledge-based competencies (Daud and Yusoff, 2010). Firms competing in the knowledge-based economy can sustain their competitive advantage by developing their own unique knowledge and building their capability to learn faster than their competitors (Grant, 1996b; Prusak, 2001). Knowledge management plays an important supporting function by providing a coordinating mechanism to enhance the conversion of resources into capabilities (Darroch, 2005). Dekoulou and Trivellas (2015) argue that the major source of competitiveness lies in a company's ability to transform into a learning organization, an organization which constantly generates, diffuses and integrates knowledge. Further, the culture of learning organization recognizes that people need to be encouraged to foster knowledge creation, sharing and exploitation (Jain & Moreno, 2015). Firms that are able to manage this process effectively achieve competitive advantage.

Although the relationship between learning organization and firm performance has already been examined in previous studies, the interaction between learning organization (LO) and knowledge management (KM) and its contribution to performance has not been adequately addressed. This study aims at examining the impact of learning organization (LO) on firm performance (FP). The study focuses on the moderating role of KM in the relationship between LO and FP. First, the study intends to establish the influence of LO on FP. Secondly, the study examines the moderating role of KM in the relationship between LO and FP.

The study focuses on the influence of between learning organization (LO) and knowledge management (KM) on performance of large manufacturing firms in Kenya. The structure of Kenya's manufacturing sector comprises micro, small, medium and large industries classified mainly by employment levels and capital investment. As a country, Kenya has recognized the manufacturing sector for its high potential for wealth creation, employment generation and poverty alleviation. Unfortunately, an assessment of Kenya's competitiveness in manufacturing reveals that the country lags behind Tanzania and is only slightly better than Uganda (Manufacturing Survey, 2012). Several factors have been cited by analysts that make Kenya uncompetitive in the continent, the major factor being the cost of doing business with many industry players citing high power tariffs. Learning organization and knowledge management provide opportunities for these firms to achieve sustainable competitive advantage given the competitive environment they operate in. The choice of the two concepts is based on

the fact that business enterprises are increasingly operating in knowledge-based economies where success is largely determined by the quality of information available.

THEORETICAL FOUNDATION

The study falls within the framework provided by RBV. The RBV proposes that the firm's internal resources are the primary predictors of superior performance (Wernerfelt, 1984). Barney (1991) suggests that internal firm resources which are valuable, rare, inimitable and non-substitutable can provide sources of competitive advantage. The major contribution of the RBV is the idea that firms should focus attention on developing internal assets and processes (Grant, 1991). Learning organization comprises characteristics, principles and systems of an organization that learns collectively which leads to increased firm performance. The learning organization concept is seen as a resource-oriented approach that is based on the ability of the organization to turn standard resources that are available to all into competences which are unique and cannot be easily copied by competitors (Karash, 2002). This study proposes that a system of learning practices can lead to increased firm performance.

The RBV of the firm focuses on resources and capabilities within the firm to explain the profit and value of the organization (Wernerfelt, 1984; Barney, 1991; Grant, 1996). Barney (1991) proposes that organizations are heterogeneous entities characterized by their particular and unique resource bases. According to this view, the firm presents an explanation for heterogeneous competition based on the assumption that close competitors differ greatly in their resources and capabilities, which determine their capacity to generate profit (Amit & Shoemaker, 1993). Considering a strategic perspective of RBV of the firm, the organization is a collection of unique competencies and capabilities influencing its evolution and strategic growth options (Dierickx & Cool, 1989; Barney, 1991). The resources are the basis of this theory and thus explain the differences in performance between firms. As a result, firms that possess certain competitive advantages obtain higher returns. This study proposed that the moderation knowledge management in the relationship between learning organization and firm performance is likely to have a strong influence thus lending support to the proposition of RBV.

The knowledge-based view of the firm which emerges as an extension of the resource-based view of the firm proposes that heterogeneous knowledge bases among firms and the ability to create and apply knowledge are the main determinants of performance difference (Decarolis & Deeds, 1999). Amin and Cohendet (2004) argue that knowledge is an established theoretical construct that has been proposed as a heterogeneous resource that firms value in different manifestations as a basis of competitive advantage. An organization's superior performance depends on its ability to defend, capitalize and apply knowledge that it creates

(Cameli & Tishler, 2004) in combination with other resources and competences of the firm such as contextual factors and in agreement with its strategic direction (Prieto & Revilla, 2006). A similar view is shared by Grant (1996) who argues that firms exist because they are better at integrating and applying specialized knowledge than markets do. The current study looks at acquisition, application and sharing knowledge as components of knowledge management and how it can be created and applied within the organizational context.

Knowledge is considered as a strategic resource that does not depreciate in the way traditional economic factors of production do and can generate increasing returns. Knowledge can be distinguished from traditional factors of production (land, labour and entrepreneurship) in that it is governed by the law of increasing returns (Salina & Wan Fadzilah, 2010). Malhorta (2001) submits that in contrast to traditional factors of production that are governed by diminishing returns, every additional unit of knowledge used effectively results in marginal increase in performance. Curado (2008) observes that the nature of most knowledge-based resources is mainly intangible and dynamic, allowing for idiosyncratic development through path dependency and causal ambiguity which cannot be easily imitated hence leading to sustained competitive advantage.

The basic proposition of KBV is that organizations are heterogeneous entities loaded with knowledge (Hoskisson, Eden, Chung & Wright, 2000). This view considers a firm to be 'a distributive knowledge system' composed of knowledge-holding employees and the role of the firm is to coordinate the work of these employees so that they can create value for the firm (Grant, 1996). Further, Wiklund and Shepherd (2003) argue knowledge resources are particularly important to ensure competitive advantage is sustained as these resources are difficult to imitate hence the basis for sustainable differentiation. An organization exists to create, transfer and transform knowledge into competitive advantage.

Learning Organization

According to Senge (1990), a learning organization is an organization with the ability to systematically solve problems, experiment with new approaches, learn from others and transfer knowledge quickly throughout the organization. Cummings and Whorley (2009) suggest that a LO is an organization skilled at creating, acquiring, interpreting, transferring and retaining knowledge for behavior modification. Learning in an environment of change positions people as a source of distinctive competence and provides the source of sustainable competitive advantage (Pedler, Burgoyne and Boydell (1991; Rowden, 2001), a position that is supported by proponents of resource based view (Barney, 1991; Grant, 1991, Karash, 2002). Huber (1991)

and Garvin (1993) linked learning to the use of information in modifying the behavior of the organization to reflect new knowledge and insights.

A central theme of the learning organization literature is that learning is intentional and that the organization through its structures, systems and culture is designed to learn. In this regard, scholars have identified a variety of tools for measuring and diagnosing learning organizations. Pedler et al. (1991) developed the learning organization questionnaire which comprised eleven dimensions: a learning approach to strategy, participative policy making, informing, formative accounting and control, internal exchange, reward flexibility, enabling structures, boundary workers, inter-company learning, a learning climate and self-development opportunities. Garvin (1993) conceptualized learning as comprising the following constructs: systematic problem solving, experimentation with new approaches, learning from organization's own experience and past history, learning from experiences and best practices of others, transferring knowledge quickly and efficiently throughout the organization.. Senge (1994) theoretical framework consists of five disciplines: personal mastery, mental models, shared vision, team learning and systems thinking. The disciplines can be used as valuable guidelines in working towards learning organization status, though the observable characteristics of such organizations are not clearly identified (Yang et al., 2004).

A critical review of the diagnostic tools in terms of scope, depth and validity suggests that the Dimensions of the Learning Organization Questionnaire (DLOQ) developed by Yang et al. (2004) meets the three criteria. This tool consists of seven dimensions: continuous learning, dialogue and inquiry, team learning, embedded systems, empowerment, system connectivity and strategic leadership. The validity of (DLOQ) has been proved through evidence of results obtained which suggest that this tool could be used in future research requiring measurement of learning capability (Basim, Sesen & Korkmazurek, 2007). The model identifies the main dimensions of learning organization in the literature and further integrates these dimensions in a theoretical framework that specifies interdependent relationships. The instrument covers learning at individual, team, organizational and global level. The DLOQ also defines the proposed seven dimensions of learning organization from the perspective of action imperatives and thus has practical implications. The scale provides information which could be used by managers wishing to improve learning capability in their firms.

Knowledge Management

Knowledge management (KM) refers to a range of practices and techniques used by organizations to identify, represent and distribute knowledge, know-how, expertise, intellectual capital and other forms of knowledge for leverage, reuse and transfer of knowledge and learning

across organizations (Landoli and Zollo, 2007). A firm's performance and survival are determined by the speed at which the firm develops knowledge-based competencies (Daud & Wan Yusoff, 2010). Firms competing knowledge-based economy can sustain their competitive advantage by harnessing their own unique knowledge and building their capability to learn faster than competitors (Grant, 1996b; Prusak, 2001). The type of knowledge needed by a firm must be tailored towards its own unique peculiarities (Daud & Wan Yusoff, 2010).

Knowledge management is an increasingly critical component of sustainable competitive advantage and provides long-term benefits for organizations. However, Li-An Ho (2008) and Kuo (2011) postulate that insufficient organizational structure and inappropriate diffusion processes have decreased the value of knowledge management and led to employee disappointment. Establishing a systematic organizational structure and fostering an organizational culture which promotes active information sharing should be the focus of all modern organizations (Wickramasinghe, 2007). Marshall, Prusak and Shpilberg (1996) argue that appropriate Human Resource Management (HRM) strategies can influence employees' beliefs and values which consequently affect organizational culture. Kuo (2011) suggests that HRM has significant influence on organizational knowledge repository and management.

Literature on knowledge management proposes various dimensions of the concept. Zack (1999) suggested four elements which include knowledge acquisition, refinement, storage and retrieval as well as presentation. Tiwana (2002) equated knowledge management to creating, packaging, assembling, reusing and revalidating knowledge. Alavi and Leidner (2001) postulate that the ability to create, store, retrieve, transfer and apply knowledge are considered the core attributes of implementing knowledge management in organizations. In line with the aforementioned operational definitions, knowledge management can be classified into three main categories: knowledge acquisition, knowledge sharing and knowledge application. These three elements are adopted in the current research. Knowledge acquisition is related to the capabilities of acquiring, integrating, storing, sharing and applying knowledge which is crucial in building and sustaining competitive advantage of the firm (Anh, Baughn, Hang & Neupert, 2006). Knowledge application refers to an organization's timely response to technological change, by utilizing the knowledge and technology generated into new products and services (Song, Bij & Weggeman, 2005). Knowledge sharing is attributed to a social interaction culture involving the exchange of employee knowledge, experience and skills within the organization (Lin, 2007).

Firm Performance

Firm performance refers to the extent to which an organization is able to meet its objectives and mission. Torrington, Hall and Taylor (2008) attribute organizational performance to bottom financial performance, doing better than competitors, maximum organization effectiveness and achieving specific organization objectives. Mitchell (2002) argues that organizational performance is affected by three factors namely: organization motivation to achieve performance objectives, influence and impact of the external environment and organization capacity to achieve desired performance. Measurement of performance is an essential indicator of the effectiveness of the firm. Firm performance needs to be assessed to highlight strengths and improvement opportunities and reduce gaps (Khadra & Rawabdeh, 2006).

Performance measurement incorporates quantitative (objective) as well as qualitative (subjective) measures. Quantitative measures focus on end results such as sales turnover and return on investment while qualitative measures focus on the process by which end results are achieved such as product or service quality, customer satisfaction, employee satisfaction and commitment (Venkatraman & Ramannujam, 1986). Ahmed, Lim and Zairi (1999) suggest that effective measurement systems are those which are balanced, integrated and designed to highlight critical inputs, outputs and process variables. In addition, a valued measurement system incorporates financial and operational measures such a balanced scorecard approach (Hitt, 1996). The BSC provides a framework for selecting multiple performance indicators that supplement traditional financial measures with qualitative measures such as customer perspective, internal business process and learning and growth. This study focused on perceptual measures of financial performance and non-financial measures such as customer perspective, internal business operations and learning and growth.

Learning Organization and Firm performance

The concept of learning organization (LO) and its potential impact on firm performance (FP) has generated growing research interest over the past two decades (Siddique, 2018). Previous studies indicate a positive relationship between an organization's learning culture and performance using a variety of outcome measures such as financial performance, innovation, competitiveness and customer satisfaction (Watkins & Dirani, 2013; Zgrzywa-Ziemark, 2015). A number of studies conducted outside USA (Kuo, 2011; Zandi & Sulaiman, 2015, Ambula, 2015) report a strong relationship between learning organization and performance outcomes. Other scholars have confirmed a positive impact on job satisfaction and individual performance (Dekoulou & trivellas, 2014), innovation and employee engagement (Park et al, 2014).

Most studies are based on Watkins and Marsick (1993) dimensions namely: continuous learning, dialogue and inquiry, team learning, embedded systems, system connections, empowerment and leadership. A study by Akhtar et al. (2012) observed that only two dimensions of learning organization had positive impact on organization performance (OP), dialogue and inquiry and system connections. Dialogue and inquiry promotes thinking collectively and communication which contributes positively to organization performance (Jyothibabu, Farooq & Pradhan, 2010). Similarly, systems connections had a similar impact on OP as employees were found to be well-versed internally and externally with their surrounding environments and were able to establish a link between the two. Thus, the following hypothesis is proposed for investigation

H₁: There is a positive relationship between learning organization and firm performance

Learning Organization, Knowledge Management and Firm Performance

Recent research demonstrates the importance of supportive human resource (HR) practices, leadership commitment and benchmarking to advance KM and organizational learning and optimize their performance impact (Rowland & Hall, 2014). Institutional factors such as organization culture, horizontal organization structure, strategic planning, KM and supportive leadership advance the LO concept (Daft, 2016). Siddique (2018) underscores the importance of these conditions in building a genuine LO, culture but emphasizes the need for employees to engage in new and challenging workplace learning initiatives. These resources are likely to contribute to the development and implementation of LO orientation and also strengthen the performance outcomes of LO (Siddique, 2018). The researcher further argues that while LO is expected to have a direct positive impact on FP, this impact is likely to motivate employees to acquire new knowledge and skills to achieve challenging performance targets (Mello, 2015; Daft, 2016).

Previous research indicates moderating variables such as learning environment, leadership and customer responsiveness that can impede or enhance the impact of LO on firm performance (Song et al. 2011; Zgrzywa-Ziemark, 2015). Li-An Ho (2008) examined the link between learning and knowledge management and their impact on 21 Technological Companies in Taiwan. The results indicated that learning organization and knowledge management capability have direct and significant influences on firm performance. A similar study by Kuo (2011) among employees in Electronic Industrial and Technological companies in Taiwan revealed that HRM strategies led to better organizational learning, organization innovation and knowledge management which contribute to improved organizational performance. Though no known study to the best knowledge of the researcher indicates that

knowledge management moderates the relationship between learning organization and performance, the researcher can infer from the results of these studies that knowledge management has a moderating effect on the relationship between learning organization and performance. It is hypothesized that knowledge management moderates the relationship between learning organization and firm performance

H₂: Knowledge management moderates the relationship between learning organization and firm performance

METHODOLOGY

A descriptive cross-sectional survey was used and data collected from a cross-section of study units. This design was considered appropriate for collecting data from the sampled population with respect to several variables of the study. The method allows the researcher to analyze, interpret and report findings as they exist without any manipulation and generalize the findings to the target population. The population of the study comprised 108 large manufacturing firms drawn from the directory of Kenya Association of Manufacturers (KAM, 2014). Primary data was collected using a semi-structured questionnaire. In line with previous studies, Gardiner and Leat (2001) and Bontis, Crossan and Hulland (2002) key respondents were employees in managerial positions based on the fact that they possess sufficient knowledge in regard to issues under investigation.

Sampling Design

The sample size for this study was 108 large manufacturing firms. The following formula recommended by Kothari (2006), Cooper and Schindler (2006) and Zikmund et al. (2010) was used to determine the sample size.

$$n = \frac{z^2 pq}{d^2}$$

Where:

n = the desired sample size for target population greater than 10,000

p = the proportion in the target population estimated to have characteristics being measured. This is placed at 90% (0.9).

q = (1-p) i.e. the proportion in the target population estimated not to have characteristics being measured, (1-0.9) = 0.1.

pq = measure of sample dispersion

d = standard error of the proportion. For this study, it is placed at 0.05

$z = 1.96$ i.e 95% confidence level for estimating the interval within which to expect population proportion.

$$n = \frac{z^2 pq}{d^2}$$

$$n = \frac{(1.96)^2 (0.9)(0.1)}{(0.05)^2} = 138$$

$n = 138$ sample size for target population greater than 10,000

Kothari (2006) further suggests a different formula for computing sample size for a population less than 10,000. In the current study, the target population is less than 10,000, therefore, the sample size for this study was determined using the following formula:

$$n_f = \frac{n}{1 + \frac{n}{N}}$$

Where;

n_f = The desired sample size (when the population is less than 10,000).

n = The desired sample size (when the population is more than 10,000).

N = The estimate of the population size (i.e. 511 in the case of the current study).

=138

1+138

511

=108.65639

In Kenya, large manufacturing firms are grouped into twelve key sectors (KAM, 2014). Proportionate sampling was done as shown in Table 1 to determine the desired number of firms from the 12 strata. Sample size for each stratum was computed using the following formula $n = N / \sum N \times 108$.

Where

n = number of firms required from each stratum

N = total number of firms from each stratum

$\sum N$ = population size

Simple random sampling was used to select firms from each stratum to ensure sectoral and geographical representation.

Table 1: Sampling Strata

Manufacturing sector	Number of firms per sector (N)	Selected firms from each sector
Building, Construction and Mining	15	3
Chemical and Allied	60	13
Energy, Electricals and Electronics	32	7
Food and Beverages	133	28
Leather and Footwear	5	1
Metal and Allied	56	12
Motor vehicle and Accessories	22	5
Paper and Board	50	11
Pharmaceutical and Medical Equipment	21	4
Plastics and Rubber	58	12
Textiles and Apparels	37	8
Timber and Furniture	20	4
Total	511	108

Data Collection

Primary data was collected using a semi-structured questionnaire. Instrument validation was achieved through testing for reliability and validity. The questionnaire was tested for reliability through computation of Cronbach's Alpha (α) which ranges from 0 to 1. The Cronbach's Alpha for all the variables was above 0.7 revealing a very high degree of reliability. Learning organization had a score of 0.955, knowledge management 0.910, firm performance 0.860.

RESULTS AND DISCUSSION

The main objective of the study was to establish the moderating effect of knowledge management on the relationship between learning organization and firm performance. The moderating effect is assessed in terms of how the effect of independent variable on dependent variable changes when a moderator is introduced. To establish the moderating effect, the following hypothesis was formulated for testing.

H₁: The influence of learning organization on performance of large manufacturing firms is moderated by knowledge management.

The moderating effect was evaluated using stepwise regression analysis proposed by Baron and Kenny (1986). The first step involved testing the influence of learning organization on financial performance. The second step involved testing the effect of predictor variables (learning organization and knowledge management) on criterion variable (financial performance). In the third step, an interaction term (computed as the product of standardized values for learning organization and knowledge management) was introduced and tested for its significance on

financial performance. Moderation can be established if the effect of interaction in the third step is significant. Separate tests were carried out for financial and non-financial measures of performance. Regression results for financial performance are presented in Table 2.

Table 1: Regression Results for the Moderating Effect of Knowledge Management on the Influence of Learning Organization on Financial Performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.260	.067	.051	.15396					
2	.262	.069	.035	.15524	.069	2.031	2	55	.141
3	.263	.069	.017	.15664	.000	.021	1	54	.886

ANOVA						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.096	1	.096	4.050	.049
	Residual	1.327	56	.024		
	Total	1.423	57			
2	Regression	.098	2	.049	2.031	.141
	Residual	1.325	55	.024		
	Total	1.423	57			
3	Regression	.098	3	.033	1.337	.272
	Residual	1.325	54	.025		
	Total	1.423	57			

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.468	.130		3.603	.001
	Learning Organization	1.712	.851	.260	2.012	.049
2	(Constant)	.452	.143		3.162	.003
	Learning Organization	1.368	1.567	.208	.913	.365
	Knowledge Management	.087	.310	.064	.280	.780
3	(Constant)	.466	.173		2.687	.010
	Learning Organization	1.308	1.567	.198	.835	.408
	Knowledge Management	.083	.314	.061	.265	.792
	Learning Organization * Knowledge Management	-.002	.017	-.022	-.144	.886

Model 1 Predictors (Constant) Learning Organization
Model 2 Predictors: (Constant) Learning Organization, Knowledge Management
Model 3 Predictors: (Constant) Learning Organization, Knowledge Management, Learning Organization * Knowledge Management
Dependent Variable: Financial Performance

Step One: The Influence of Learning Organization on Financial Performance

In step one, financial performance was regressed on learning organization. The results indicate that learning organization accounts for 6.7 percent of variance in financial performance ($R^2 = 0.067$, $P < 0.05$). The overall model was significant ($F = 4.050$, $P < 0.05$). Further, the beta coefficients were statistically significant ($\beta = 1.712$, $t = 2.012$, $P < 0.05$). This implies that that one unit change in learning organization is associated with 1.712 change in financial performance. The results in the first step were significant.

Step Two: The Influence of Learning Organization and knowledge Management on Financial Performance

The introduction of the moderator, knowledge management, significantly improves the influence of learning organization on financial performance. Learning organization and knowledge management explain 6.9 percent of variance in financial performance. The overall model was statistically insignificant ($F = 2.031$, $P > 0.05$). The change in F value ($F \text{ change} = 2.031$) was not significant. Similarly, the beta coefficients were not statistically significant ($\beta = 0.087$, $t = 0.280$, $P > 0.05$). The results in the second step were not significant.

Step Three: The Influence of Learning Organization, Knowledge Management and Interaction Term on Financial Performance.

In step 3, the interaction term was introduced in the model. All the variables, learning organization, knowledge management and the interaction term were entered in the regression model. The results reveal that R^2 remained the same ($R^2 = 0.069$). The R^2 change was zero indicating that the interaction of learning organization* knowledge management did not have a significant influence on financial performance. The overall model indicates that the interaction was not statistically significant ($F = 1.337$, $P > 0.05$). Equally, the change in F value ($F \text{ change} = 0.021$) was not significant. The beta coefficients revealed a decrease in financial performance ($\beta = -0.002$, $t = -0.144$, $P > 0.05$) when the interaction term was included in the regression model. The results did not provide evidence to support the moderation of knowledge management on the relationship between learning organization and financial performance.

Learning Organization, Knowledge Management and Non-financial Performance

To establish the moderating effect of knowledge management on the influence of learning organization on non-financial performance, stepwise regression analysis was used. The first step involved testing the influence of learning organization on non-financial performance. The second step involved testing the influence of learning organization and knowledge management on non-financial performance. The third step focused on creating an interaction term (learning organization* knowledge management) which was included in the model to test for variation in

non-financial performance. Moderation is assumed to take place if the effect of the interaction term in step 3 is significant. Regression results are presented in Table 3.

Table 2 Regression Results for the Moderating Effect of Knowledge Management on the Influence of Learning Organization on Non-Financial Performance

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R ² change	F change	Df 1	Df 2	Sig. F Change
1	.627 ^a	.394	.383	.01474					
2	.642 ^b	.412	.391	.01465	.412	19.582	2	56	.000
3	.646 ^c	.417	.386	.01471	.006	.558	1	55	.458

ANOVA						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1		.008	1	.008	37.010	.000
	Regression	.012	57	.000		
	Residual	.020	58			
	Total					
2		.008	2	.004	19.582	.000
	Regression	.012	56	.000		
	Residual	.020	58			
	Total					
3		.009	3	.003	13.138	.000
	Regression	.012	55	.000		
	Residual	.021	58			
	Total					

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.073	.013		5.671	.000
	Learning Organization	.509	.084	.627	6.084	.000
2	(Constant)	.065	.014		4.536	.000
	Learning Organization	.373	.133	.460	2.806	.007
	Knowledge Management	.037	.028	.214	1.304	.198
3	(Constant)	.059	.017		3.546	.001
	Learning Organization	.406	.141	.501	2.888	.006
	Knowledge Management	.037	.028	.216	1.313	.195
	Learning Organization * Knowledge Management	.001	.002	.088	1.747	.458

Model 1 Predictors (Constant) Learning Organization
Model 2 Predictors: (Constant) Learning Organization, Knowledge Management
Model 3 Predictors: (Constant) Learning Organization, Knowledge Management, Learning Organization * Knowledge Management
Dependent Variable: Non-Financial Performance

Step One: The Influence of Learning Organization on Non-Financial Performance

In step one, non-financial performance was regressed on learning organization. The results are presented in model one. The results reveal that 39.4 percent of variance in non-financial performance was explained by learning organization ($R^2 = 0.394$, $P < 0.05$). This implies that 60.6 percent of variation in non-financial performance was not explained due to other factors not captured in the model. The overall model was statistically significant ($F = 37.010$, $P < 0.05$). Further, the beta coefficients of the model were statistically significant ($\beta = 0.509$, $t = 6.084$, $P < 0.05$). Specifically, one unit change in learning organization is associated with 0.509 change in non-financial performance

Step Two: The Influence of Learning Organization and Knowledge Management on Non-Financial Performance

In step two, the introduction of the moderator, knowledge management, significantly improves the influence of learning organization on non-financial performance. Learning organization and knowledge management explained 41.2 percent of variance in non-financial performance ($R^2 = 0.412$, $P < 0.05$). R^2 changes from 0.394 in step one to 0.412 in step two (R^2 change = 0.018) suggesting that learning organization and knowledge management have a marginal effect on non-financial performance. The regression model was statistically significant ($F = 19.582$, $P < 0.05$). The change in F ratio (F change = 19.582) at $p < 0.05$ was statistically significant. The beta coefficients indicate that learning organization ($\beta = 0.373$, $t = 2.806$, $P < 0.007$) had a significant contribution while knowledge management was not significant ($\beta = 0.037$, $t = 1.304$, $P > 0.05$).

Step Three: The Influence of Learning Organization, Knowledge Management and Interaction Term on Non-Financial Performance

In step 3, the interaction term was introduced in the model. All the variables, learning organization, knowledge management and the interaction term were entered in the regression model. Results indicate that the interaction term accounts for 41.7 percent of variance in non-financial performance ($R^2 = 0.417$, $P < 0.05$). R^2 changes from 0.412 in step two to 0.417 in step three (R^2 change = 0.005). The overall model remained statistically significant ($F = 13.138$, $P < 0.05$).

The change in F ratio (F change = 0.558) at $P < 0.05$ was not statistically significant. The interaction of learning organization and knowledge management on non-financial performance was not statistically significant ($\beta = 0.001$, $t = 0.747$, $P > 0.05$). The third condition in testing for moderation was not met hence the hypothesis was not supported.

SUMMARY

Results of the study indicate that 6.9 percent of variance in financial performance was explained by learning organization and knowledge management. The overall model ($F=2.031$, $P>0.05$) was not significant. The beta coefficients for learning organization ($\beta=1.368$, $t=0.913$, $P>0.05$) and knowledge management ($\beta=0.087$, $t=0.280$, $P>0.05$) were not statistically significant. Further, the interaction of learning organization and knowledge management on financial performance ($\beta= -0.022$, $t=-0.144$, $P>0.05$) was not significant. The findings did not support the moderating effect of knowledge management on the relationship between learning organization and financial performance

The findings of the study revealed that 39.4 percent of variance in non-financial performance was explained by learning organization. The overall model ($F=37.010$, $P<0.05$) and the beta coefficient ($\beta=0.509$, $t=6.084$, $P<0.05$) were statistically significant. In step two, the introduction of the moderator, knowledge management, significantly improved the influence of learning organization on non-financial performance. 41.2 percent of variance in non-financial performance was explained by learning organization and knowledge management. The beta coefficients indicate that learning organization ($\beta=0.373$, $t=2.806$, $P<0.05$) had a significant contribution while knowledge management was not significant ($\beta=0.037$, $t=1.304$, $P>0.05$). In the third step, the interaction of learning organization and knowledge management on non-financial performance was not significant ($\beta=0.001$, $t=0.747$, $P>0.05$).

The third condition in testing for moderation was not met hence the hypothesis was not supported. Lack of support for moderation implies that manufacturing firms are not keen on institutionalizing knowledge management practices given the high levels of competition they face.

The findings of the study support previous empirical research. Kagiri (2008) revealed a strong and significant relationship between knowledge management strategy, organization competence and firm competitiveness. Li-An Ho (2008) examined the link between learning and knowledge management and established that the two variables had a significant influence on organizational performance. A similar study by Kuo (2011) revealed that HRM strategies lead to better organizational learning, innovation and knowledge management capability which contribute to improved organizational performance.

LIMITATIONS OF THE STUDY

The study had a number of limitations with respect to methodological issues that need to be considered when interpreting results. The ratings of the study variables was done by different managers. The HR manager responded to questions on learning organization, knowledge

management, the finance manager on financial performance and production manager on non-financial performance. Though the respondents are thought to give objective responses, they could have their own perceptions which could lead to misleading responses. It therefore becomes difficult to tell whether the perceptions reflect the organization or personal views.

The study variables were measured on a five-point likert scale ranging from 1= not at all to 5= very large extent. One of the major limitations of this scale is its inability to measure true attitudes of respondents. Respondents tend to portray themselves in a more socially favourable light rather than being honest, hence may avoid extreme response categories.

The study utilized a cross sectional survey design. Cross sectional studies do not measure causal effects on the observed relationships between study variables and therefore may not give actual relationships that exist between learning organization, knowledge management and performance of manufacturing firms in Kenya.

Another limitation was the use of self-administered questionnaires. Self-administered questionnaires present a challenge to the business researcher because respondents may not understand the questions and therefore give incorrect responses. The results may not estimate the true relationship between study variables.

Finally, the study relied on perceptual measures of financial performance since it was difficult to obtain objective measures. Lack of secondary data fails to provide a true picture of firm performance. The perceptual measures may bias the estimated relationship between learning organization and firm performance

Despite the limitations discussed above, the quality of the study was not compromised. The study was designed in a highly scientific manner based on extensive literature review. A conceptual model was developed and hypotheses tested using statistical techniques. These limitations, therefore, do not have adverse effects on the findings of the study. Overall, the results have made a significant contribution to the existing body of knowledge in human resource management.

SCOPE FOR FUTURE RESEARCH

The study focused on the moderating effect of knowledge management on the relationship between learning organization and firm performance. The influence of learning organization on performance could be affected by other factors. Future research could consider: strategy, structure, innovation, technology, environment and leadership as possible influencers in the relationship. The study serves as a reference point for those who wish to study the relationship between learning organization and performance. The researchers could use any of these factors as mediators or moderators to determine if they can obtain similar results.

This study used cross-sectional survey design. Cross sectional studies do not determine the causal relationships between variables. Future studies could use longitudinal study to provide a better understanding of the influence of learning organization on firm performance. A longitudinal survey is likely to provide causal effects of variables.

The results of this study were self-reporting. This assumed that the responses were objective and were actually given by the target group. However, it was difficult to tell whether the respondents presented their own views or those of the organization. Future studies should use multiple sources of data such as employees, management, customers, distributors and primary sources discussed earlier.

CONCLUSION

The study sought to establish the moderating effect of knowledge management in the relationship between learning organization and firm performance. To achieve this objective, a conceptual model was developed based on extensive literature review and hypothesis formulated for testing. Simple linear regression analysis was used to determine the influence of learning organization on firm performance. Stepwise regression analysis was performed to assess the moderating effect of knowledge management. Separate tests were performed for financial and non-financial measures of performance.

First, the relationship between learning organization and knowledge management was tested with financial performance as the dependent variable. The results revealed a statistically significant relationship between learning organization and financial performance. The moderating effect of knowledge management in the relationship between learning organization and financial performance was not supported. The interaction of learning organization and knowledge management did not have a significant influence on financial performance. The results could probably be attributed to conceptual difficulties, methodological and measurement issues prevalent in social sciences.

The second tests of hypotheses involved the relationship between the study variables and non-financial performance. The study established a strong and positive relationship between learning organization and non-financial performance. Equally, the moderating effect of knowledge management in the relationship between learning organization and non-financial performance was not supported. Notably, learning organization and knowledge management had a strong explanatory power on non-financial performance. The results further suggest that manufacturing firms can achieve superior performance through the alignment of learning organization and knowledge management.

The results of this study provide a number of policy and practical implications for manufacturing firms in Kenya. Policy makers recognize the importance of the sector for long-term economic development. The second Medium Term plan (MTP II) of vision 2030 pays special attention to the sector with the aim of increasing its contribution to GDP and foreign exchange earnings. The results of the study will assist policy makers in making informed decisions to adopt knowledge management practices for sustained superior performance.

Knowledge management accounted for 37.7 percent variance in non-financial performance though it had no moderating effect in the relationship between learning organization and firm performance. This implies that managers of manufacturing firms should continuously improve their knowledge management practices in order to achieve superior performance. Manufacturing firms need to focus on knowledge management as a key driver of performance in the industry.

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