

Influence of Strategic Knowledge Management Practices on Organizational Innovation in Large Scale Manufacturing Firms in Nakuru County, Kenya

Naisiae Gladys Nkararo¹, Dr. James Gitari²

¹MBA (Strategic) Student, ²Senior lecturer, ^{1,2} Jomo Kenyatta University of Agriculture and Technology, Thika, Kenya

Abstract: This study sought to examine the influence of strategic knowledge management practices on organizational innovation in large scale manufacturing firms in Nakuru County Kenya. The study adopted the Resource Based view theory, Organizational Learning Theory, Competency based view theory and Unified model of dynamic knowledge creation. The study employed a descriptive research design with a quantitative approach. The target population for this study was 75 staff from the 15 large scale manufacturing firms licensed by county government of Nakuru and that operated in the period 2017. The study employed a purposive sampling method to select 75 staff comprising General Manager, human resource development, production and operations, marketing, research and development managers from each of the 15 large scale manufacturing firms. Primary data for this study was collected using structured questionnaires which were filled by the respondents. Collected data was analysed using both descriptive and inferential statistics with the aid of SPSS Version 22. Mean, minimum, maximum and standard deviations were used as measures of central tendencies and dispersion respectively. Multi regression analysis was used to establish the influence between strategic knowledge management practices and organizational innovation. The findings of the study showed that knowledge transfer, knowledge application and knowledge management policy had a statistically significant positive influence on organizational innovation. However, knowledge generation and knowledge organization did not show statistically significant influence on organizational innovation even though their influence was positive.

Keywords: Strategic knowledge, Management practises, Innovation and Manufacturing firms.

I. INTRODUCTION

The twenty-first century is undoubtedly the century of knowledge. The everyday usage of available advanced information, business and internet technologies in business activities confirm that this is not only a phrase from the literature, but the reality (Nawab, Nazir, Zahid & Fawad, 2015). Alternatively, globalization has brought about many modern trends, and companies have the task to adopt them as quickly, easily and painlessly as they can in order to survive in the competitive market (Chen & Huang, 2009). It has been observed that the vital strategic resource today is the knowledge of individual on organization; hence by realizing the major value of intellectual resources, companies have begun to manage rationally and improve them. The importance of knowledge management as a concept of organizational knowledge, aimed at effective application of knowledge to make quality decisions (Huang & Li, 2009). Intellectual resources, and the first place knowledge, contribute to the company as a revenue contribution of products and services, preserve and increase the reputation, through the reduction of operating costs, create barriers to entry of potential competitors, by increasing customer loyalty and create innovation (Hau, Kim, Lee & Kim, 2013). The success of organizations largely depends on

continual investment in learning and acquiring new knowledge that creates new businesses and improve existing performances. In that processes, the balanced scorecard as a strategic managerial tool provides the enormous help.

Organizations need to capture and use knowledge to improve performance hence the future must embrace strategic knowledge management practices. Strategic KM practices means the process of acquiring, storing, understanding, sharing, implementing knowledge, and these actions are taken in the organizational learning process with regard to the culture and strategies of the organizations Kiessling, Richey, Meng and Dabic (2009). On the other hand, Bhatti and Qureshi (2007) stated that strategic KM means efforts to explore the tacit and explicit knowledge of individuals, groups, and organizations and to convert this treasure into organizational assets so that individuals and managers can use it in various levels of decision making. KM is a systematic and integrated management strategy that develops transfers, transmits, stores, and implements knowledge so that it can improve efficiency and effectiveness of the organization's manpower (Dahiya, Gupta & Jain, 2012). The relevant theory that helps significantly towards realizing the important role of knowledge management is the knowledge-based theory. This theory supposes that knowledge management practices such as knowledge acquisition, knowledge storage, knowledge creation, knowledge sharing and knowledge implementation play a critical role in achieving high level productivity, financial and human resource performance and finally improving sustainable competitive advantage (Soderberg & Holden, 2002).

Knowledge Management (KM) may be defined as the explicit and systematic management of vital knowledge and its associated processes of creation, organization, diffusion, use and exploitation (Prusak & Matson, 2006). Karadsheh (2009) on the other hand defined knowledge management as a structured process with activities to capture, discover, create, filter, evaluate, store, share and apply knowledge from individuals to advance business processes and meet organizations objectives and goals. According to Pillania (2005), knowledge management is defined as a systematic, organized, explicit and deliberate ongoing process of creating, disseminating, applying, renewing and updating the knowledge for achieving organizational objectives. Knowledge management can be tactical (operational) or strategic (Zack, 2009). Tactical KM refers to the knowledge workers use in their daily work on a continuous basis (Filius, de Jong & Roelofs, 2000) to execute strategy (Zack, 2009). On the other hand, strategic KM relates to the processes and infrastructures firms employ to acquire, create and share knowledge for formulating strategy and making strategic decisions (Zack, 2009) thus linking KM strategy to business strategy (Filius, de Jong & Roelofs, 2000). Strategic knowledge management relates to the procedure and substructure firms employ to obtain, create and share knowledge for developing strategy and making strategic decisions (Zack, 2009), thus linking knowledge management strategy to business strategy. A firm's knowledge strategy describes the approach an organization has on its knowledge resources and abilities to the rational necessity of its strategy, thus reducing the knowledge gap existence between what a company must know to carry out its strategy and what it does know (Zack, 2009). A similar definition is provided by Bierly and Daly (2008), who argues that the set of strategic choices addressing knowledge creation in an organization including firm's knowledge management strategy, which furnishes the firm with guidelines for creating competitive benefit. Both definitions are cognizant of the convenience of clearly managing knowledge with a clear knowledge strategy.

Study by Salojrvi, Furu and Sveiby (2005) suggested that the whole organization must share a common knowledge management direction because knowledge management is central to their capacity to grow and compete. An essential element is the balance firms should observe between examination and utilization (March, 2008), for instance between the creation, finding or getting of knowledge and its purification, reutilize or a focus on efficiency in knowledge resource management. Hansen, Nohria and Tierney (1999) symbolism of knowledge strategies differentiates between personalization and codification of knowledge. This classification is based on the distinction between tacit and clear knowledge, and the distinct use of IT (Martini & Pellegrini, 2005). In the codification strategy knowledge is extracted from the person who developed it, made independent of that person, and reutilized for various purposes, while the personalization strategy focuses on conversation between individuals. Innovation refers to the process of knowledge change to economic growth and social development. It includes a set of scientific, technologic, organizational, financial and commercial activities. Innovation means: to introduce new services, to improve the performance of available products, to develop a new market, to improve the quality of raw materials and equipment and to change organizational and industrial structures of the societies. It has influence on the economic growth of each society (Sallies, 2012). The innovative efforts include the search for, the discovery, experimentation, and development of new technologies, new products and or services, new production processes; and new organizational structures (Borghini, 2005).

Literature (Daft, 2006; Damanpour & Evan, 2004) describes innovation in terms of its nature, as an element, a new structure or administrative system, a policy, a new plan or program, a new production process, a product or service new to

the company, which has been acquired or generated internally. Different strategies necessitate different nature of activities in each innovation type. There exists three pairs of organizational innovation which have gained attention in the preceding research, they are administrative and technical, product and process, and radical and incremental, (Gopalakrishnan S. & Damanpour F., 2007). Additionally, Damanpour and Evan, (2004) - elucidate that the distinction between administrative and technical innovations is mostly important for studies in organizational innovation because it mirrors a more general distinction between social structure and technology, and the two innovation types can represent changes brought in a wide range of tasks within organizations.

Statement of the Problem:

Competition in the manufacturing industry is stiff and is highly changing with the passing of time. Manufacturing firms must find a way to stay on top of competition through innovation by developing new products, new processes, and new markets for products as well as synchronizing the organization structure. New product and market based innovations are aimed at increasing the revenues of the manufacturing firms while administrative and processed based innovations are aimed at ensuring efficiency and better running of the manufacturing firm. To achieve innovation performance, a manufacturing firm must identify strategies to assist them. One of the key drivers of innovation is strategic knowledge management. Strategic knowledge management aims at generating and disseminating relevant knowledge to be utilized and applied in organizational innovation. A number of studies have been done globally on the effect of strategic knowledge management practices on organizational innovation. Study by Veiseh, Jamehdarpour and Kamari (2014) showed that there is a relationship between innovation predictions and knowledge management. On the other hand, Karimi, Soltani and Kheiri (2014) stated that there is no significant correlation between knowledge management components and innovation. Study by Kombo, K'Obonyo and Ogutu (2015) held that knowledge strategy has a positive and significant effect on innovation activities of the firms. Most studies done in Kenya have not considered the selected strategic knowledge management practices that are of concern to this current study. No study has ever been done in Kenya that covers manufacturing firms in Nakuru County to the best of the researcher's knowledge; the current study therefore examined the influence of strategic knowledge management practices on organizational innovation in large scale manufacturing firms in Nakuru County, Kenya.

Objective of the Study:

To establish the influence of strategic knowledge management practices on organizational innovation in large scale manufacturing firms in Nakuru County, Kenya.

Research Hypotheses:

In conducting the study the following hypothesis were tested

Ho₁: Knowledge Management policy has no significant influence on organizational innovation in manufacturing firms in Nakuru County, Kenya.

Ho₂: Knowledge generation has no significant influence on organizational innovation in manufacturing firms in Nakuru County, Kenya.

Ho₃: Knowledge organization has no significant influence on organizational innovation in manufacturing firms in Nakuru County, Kenya.

Ho₄: Knowledge transfer has no significant influence on organizational innovation in manufacturing firms in Nakuru County, Kenya.

Ho₅: knowledge application has no significant influence on organizational innovation in manufacturing firms in Nakuru County, Kenya.

II. LITERATURE REVIEW

Theoretical Review:

Resource Based View Theory: The theoretical foundation of RBV dates back to the year 1950 when Penrose's viewed organization as a pool of resources and articulation of the same by Penrose, 1995. The RBV consider the resources of a firm as being a fundamental predictor of a firm's competitive advantage and performance. Whereas resources can be categorized in different ways, for instance tangible and intangible, tangible resources facilitate execution of business

process while the intangible resources are the ones that might result in competitive advantage by allowing organizations to incorporate unique and valuable practices (Ray, Barney & Muhanna, 2004). As noted by Barney (1991), RBV is based on two assumptions of resources being heterogeneously distributed across organizations and the non-transferability of productive resources from one organization to another without incurring cost. Thus, given the two assumptions, RBV holds that only an intangible resource that is valuable, rare, hard to imitate and without strategically equivalent substitutes is critical in sustaining a firm's competitiveness (Barney, 1991). Within projects, RBV is critical in that project management practices are based on tangible and intangible resources (Fernie, *et al.*, 2003). For instance, resources that are tangible include the use of codified methodologies, templates, tools and techniques that are readily available across the discipline (Crawford, *et al.*, 2006; Jugdev & Mathur, 2006). On the other hand, intangible resources include leadership, teamwork, knowledge etc. that might contribute towards competitive advantage (Killen, *et al.*, 2012; Jugdev & Mathur, 2006). Thus, given leadership, knowledge and teamwork are valuable, rare, and imperfectly imitable resources, these resources are expected to have an effect on organizational innovation performance. In terms of applicability, RBV is criticized due to lack of consensus in the uses of various definitional terms such as capabilities, assets, resources and competences. In addition, RBV is criticized on the basis of whether it can be tested due to lack of methodology to measure intangible resources (Barney, *et al.*, 2011). Resource based theory view is relevant for the current research on influence of strategic knowledge management practises on organizational innovation since knowledge can be a unique resource that must be managed efficiently and effectively to contribute to organizational innovation of the manufacturing firms in Nakuru Kenya.

Unified model of dynamic knowledge creation: Unified dynamic knowledge creation model best discourses the study. Organizational knowledge creation requires continuous work and leadership to maintain and improve organizational knowledge assets (Nonaka *et al.*, 2000). With this model, knowledge sharing and transfer must occur through knowledge creation at the foundation of an organization's success and with that, (Nonaka, 1994). Knowledge creation occurs as the interaction between tacit and explicit knowledge churns through the SECI model (Nonaka, 1994; Nonaka *et al.*, 2000). This theory is the most suitable framework for this study since it addressed knowledge creation as it works with organizational changes in a dynamic environment (Von Krogh *et al.*, 2012). It is also provided support for organizational growth and hence an appropriate theoretical framework since it recognized various types of knowledge sharing.

Mental, virtual, or physical space aspect where knowledge creation ensues from information interpretation addressed the location in support of knowledge sharing enhances the theoretical place where knowledge creation occurred (Nonaka *et al.*, 2000; Von Krogh *et al.*, 2012). Theoretical place where knowledge creation and sharing occurs are four types which fall into two categories: media and type of interaction (Nonaka *et al.*, 2000). Nonaka *et al.* (2000) categorized the media into visual, exercising and systemizing theoretical place of knowledge creation, and face-to-face, originating and dialoguing theoretical place of knowledge creation. Nonaka *et al.* (2000) also divided the individual exchanges involving the exercising and originating and the mutual interactions involving dialoguing and systemizing theoretical places of knowledge creation and sharing. This theoretical framework support employee-wide knowledge sharing and the gap created in the line of knowledge due to employee exit and the firm performance and execution in business planning did not account for this as strategic plan (Von Krogh *et al.*, 2012). Leadership guided the knowledge creation cycle and supported innovation, which in turn encouraged more innovation and innovative practices (Nonaka *et al.*, 2000). Organization's capability to sustain a competitive advantage is supported by knowledge creation, which advances itself to a positive firm performance relationship through knowledge management and innovation (Nonaka *et al.*, 2000). Knowledge creation within learning organizations strengthens knowledge sharing.

Empirical Review:

Knowledge generation: Knowledge Generation are processes oriented toward obtaining knowledge which can be described by many other terms such as acquire, seek, create, capture, and collaborate, all with a common objective. The ability to generate knowledge is, however, partly based on an organization's absorptive capacity for innovation (Gold, Malhotra, & Segars, 2001). Study by Maroofi, Nayebi and Dehghani (2013) noted that Knowledge Management as a significant mechanism to increase innovation and incorporated in performance. In addition, both codification and personalization strategies have a positive influence on financial results. Study by Hegazy and Ghorab (2014) assessed the influence of knowledge management processes on organizational business processes' and employees' benefits at an academic institution. Knowledge discovery was positively associated with business processes' effectiveness, and employees' learning, adaptability, and satisfaction, whereas knowledge capture was positively associated with business processes' efficiency, effectiveness, and business innovation; and employees' learning. Study by Akram, Siddiqui, Nawaz,

Ghauri and Cheema, (2011) sought to examine and elaborate the linkage between knowledge management process and innovation process to dig out the important relationships and flows of activities. The researchers found that different components of Knowledge Management as Knowledge activities, Knowledge types, transformation of knowledge and technology have a significant positive effect in bringing innovation through transformation of knowledge into knowledge assets in organizations. Other studies conclude that a company that is able to effectively develop the acquisition of knowledge and consider it a crucial task can achieve organizational benefits both in innovation and in operating results (Hassan, & Shaukat, 2014).

Knowledge Transfer: Knowledge transfer is defined as a business process that requires collective knowledge, skills and expertise, and dissemination of knowledge across the organizational units (Chen & Huang, 2009; Lin & Lee, 2005). Knowledge sharing also involves the exchange of employee knowledge, experiences, and skills throughout the organizational and the whole organization in order to establish new routines and mental models (Lin, 2007). Study by (Lin, 2007), sought to examine the influence of individual factors, organizational factors and technology factors on knowledge sharing processes and whether more leads to superior firm innovation capability. The results also indicated that employee willingness to both donate and collect knowledge enable the firm to improve innovation capability. Another study was carried out by (Hanif, Hanif, Kamran, Khan, & Yunfei, 2016), The study examined how Chinese and Pakistani SMEs use HR Generic Strategies specifically about the mediating role of affective management that influences ‘knowledge sharing’ and ‘innovation performance’. The study also explored the level to which employees sharing knowledge within Organizations has positive and significant influence to the Organization’s innovation performance. Eskandarzadeh, Ebrahimpour and Hasanzadeh (2015) sought to evaluate the effect of Knowledge Management on Innovative Function at Mehre Eghtesad Bank by reviewing the concepts of knowledge management and Strategic innovation. The results showed that knowledge management affects positively the strategic innovation.

Knowledge application: knowledge application is related with the actual use of the existing knowledge (Gold *et al.*, 2001), and creating values for organizations, making knowledge more active and relevant is important (Bhatt, 2001). Lin and Lee (2005) describe knowledge application as a process through which business is more effective in storage and retrieval mechanisms enabling a firm to access knowledge easily. Johns (2014) sought to determine the extent of application of knowledge management as a competitive strategy among aviation training institutions in Nairobi. The study concludes that Knowledge is a fundamental factor in the creation of competitive advantages. The study also recommends that knowledge management systems should be provided to ensure greater access to knowledge and equally important is that users’ need to be enabled to use the knowledge once it is accessed and to subsequently share it with others. Gómez and Manzanares, (2004) investigates, from the knowledge-based view of the firm, whether there are groups of firms with homogeneous behaviors, as regards to knowledge management strategies (KMS) and tries to identify their influence on innovation management and firm performance. The results showed significant relationships between the performance of some firms and their efficiency in the transmission and application of existing knowledge. Kombo, K’Obonyo and Ogutu (2015) examined the effect of knowledge strategy on organizational innovation. regression results indicate that knowledge exploration has greater effect on organizational innovation than knowledge exploitation. Hence, higher levels of knowledge strategy results in higher innovative performance in products and processes.

Knowledge management policy: The codification of knowledge enables the use of it to be more efficient, and it’s re-use more effective ensuring more work done and hence reducing communication costs (Hansen, 1999). knowledge management naturally involves the accessibility of manuals and databases documenting firm-specific knowledge primarily about internal management practices and procedures. Czarnitzki and Wastyn (2009) examined the influence of management knowledge on the firm’s innovation performance. The study showed knowledge management techniques as having a positive influence on the innovative performance of a firm. Knowledge management is a broader part of organizational strategy. Study by Greiner, Bohmann and Krcmar (2007) to establish the influence of organizational environment on the selection of knowledge management strategies. The findings in the paper suggest a relationship between the success of knowledge management and the alignment of knowledge management and business strategy. The paper also shows that an organization whose business strategy requires process efficiency should rely primarily on a codification strategy. Mwihia (2008) wanted to ascertain the nature and extent of the relationship between knowledge management strategy and organizational competence. The results of the study showed that there was a very strong and significant relationship between knowledge management strategy and organizational competence and that the two variables in turn had a moderately strong and significant relationship with competitiveness.

Knowledge organization: Stein and Zwass (2005) defined organizing knowledge as the means by which knowledge from past experience and events influence present organization activities. Tan, Teo, Tan and Wei (2007) imitated that organizational knowledge should be organized and stored in a proper way. It includes knowledge in various forms like written documentation, codified human knowledge stored in an expert system, structured information stored in electronic databases, documented organizational procedures and processes and tacit knowledge acquired by individuals or network of individuals. Explicit knowledge should also be stored properly and it resides in unstructured documents in the form of memos, notes, meeting minutes etc. Knowledge storage involves both the soft or hard style recording and retention of both individual and organizational knowledge in a way so as to be easily retrieved. Knowledge storage utilizes technical systems such as modern informational hardware and software and human processes to identify the knowledge in an organization, then to code and index the knowledge for later retrieval (Stein & Zwass, 2005). In the other words, organizing and retrieving organizational knowledge means knowledge storage by providing the ability to retrieve and use the information by the individuals. Hansen et al. (2009) differentiate two different knowledge management strategies. Study by (Nawab, Nazir, Zahid, & Fawad, 2015), focused on the role of middle management in the implementation of knowledge management with the help of KM processes and strategies which eventually leads to innovation. The study concludes that Knowledge organizing contributes in the enhancement of innovation in banking industry .

III. METHODOLOGY

Research Design ,Target Population And Sampling:

The study employed a descriptive survey as its research design to establish the influence of strategic knowledge management practices on organizational innovation in manufacturing firms in Nakuru County. This study was a survey of all large scale manufacturing firms operating in Nakuru County Kenya in 2017. There are 15 large scale manufacturing firms operating in Nakuru County according to KAM. The respondents were the General Manager, human resource development, production and operations, marketing, research and development managers from each of the 15 large scale manufacturing firms operating in Nakuru County. This study targeted the entire large scale manufacturing firms in Nakuru county Kenya. Nakuru County constitutes of only 15 large scale manufacturing firms, a census was done in order to provide a true measure of population. Purposive sampling was used to select respondents that comprised General Manager, human resource development, production and operations, marketing, research and development managers since they are central in knowledge management as well as innovation within the manufacturing firms. This study was a survey of the entire 15 large scale manufacturing firms in Nakuru County, Kenya. This therefore means that all the 15 licensed large scale manufacturing firms were subjected to the study.

Research Instruments and data collection and analysis:

The researcher used a questionnaire as the main data collection instrument to collect data from the respondents. The questionnaires had structured questions inform of Likert scale. The use of questionnaires is justified because they are cost effective and gives adequate time to the respondent to fill in and return to the researcher (Mugenda & Mugenda, 2009). The questionnaire had sections on background data and specific questions on strategic knowledge management practices and organizational innovation. The researcher first obtained introduction letter from the postgraduate school. The researcher then got appointment with the general managers of the 15 manufacturing firms to explain the purpose of the study and get permission to collect data. The researcher then printed questionnaires for eventual distribution to respondents. The questionnaire were administered using a drop and pick later method. A pilot test was conducted to determine the reliability of the research instrument .This was conducted at Unga limited before the actual data collection. The information generated during pilot study was used for testing reliability and validity of research instrument used in the study. To establish validity of instruments, the researcher solicited the opinions of scholars and experts of strategic management. The researcher used the most common measure of internal consistency known as Cronbach Alpha which indicates the extent to which a set of items can be treated as measuring a single latent variable. The recommended value of 0.7 was used as cut off point since a Cronbach Alpha value of less than 0.7 implies that internal consistency among items is weak (Kothari, 2004). Completed questionnaires were scrutinized for completeness and then entered into Statistical Package for Social Scientist version 21 computer packages. After entering data into data editor, data cleaning, editing, coding and arrangement for analysis followed next. Data was then analyzed using the Statistical Package for Social Science (SPSS version 22) software where descriptive and inferential statistics were used. Descriptive statistics in the form of percentages, frequencies, standard deviation, mean, minimum and maximum were employed. Inferential statistics involved bivariate Pearson correlation and multi regression. The statistical model shows the mathematical

relationship between the independent variable strategic knowledge management practices and dependent variable organizational innovation.

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + e \dots \dots \dots (1)$$

Where Y is dependent variable organizational innovation, X₁- X₅: are independent variables , X₁: knowledge generation, X₂: knowledge organization , X₃: knowledge transfer , X₄: knowledge application, X₅: Knowledge management policy, β₁, β₂, β₃, β₄ and β₅: are the coefficients of independent variables, β₀: intercept term and e: stochastic error term.

IV. RESULTS AND DISCUSSIONS

Response Rate and reliability test:

Out of the 75 questionnaires that were issued among the various respondents at the 15 manufacturing firms, 65 were returned and were useable for the study accounting for 87 % response rate. The reliability was measured by calculating internal consistency using Cronbach Alpha. The value of Cronbach’s Alpha was above 0.741 which is above the threshold of 0.7 hence the questionnaire used in the study was reliable enough in measuring the content it measured with high degree of reliability hence the questionnaire could give similar result if used repeatedly in different studies.

Demographic analysis:

Majority (84.6%) of the respondents had worked in the organizations for more than five years indicating that there is low staff turnover by management employees in the organization as most of them have been with the company for many years hence they could employ their long years of tacit knowledge with their respective firms to improve organizational innovation. It is also clear from the results that majority (63.0%) of the respondents were male while 37.5 % were female implying that the organization human resource department has met the one third gender rule stipulated in the constitution and finally the all the organizations had been in operation for more than six years meaning they were well anchored to invest in knowledge management programs to improve the innovativeness.

Knowledge Management Policy:

The study sought to determine the extent to which knowledge management policy was used in the respective companies to improve organizational innovation. These results are as summarized in Table 1

Table 1: Knowledge Management Policy

	SA %	A %	N %	D %	SD %	N	Min	Max	Mean	Std. Dev
KMP1	69	31	0	0	0	65	4	5	4.6923	.46513
KMP2	65	35	0	0	0	65	4	5	4.6923	.46513
KMP3	60	40	0	0	0	65	4	5	4.6923	.46513
KMP4	31	20	29	20	0	65	2	5	3.6154	1.12767
KMP5	20	27	42	11	0	65	2	5	3.5692	.93490
KMP6	9	0	39	41	11	65	1	5	2.5538	1.01598
KMP7	40	20	18	11	11	65	1	5	3.6769	1.38189
KMP8	20	29	20	9	22	65	1	5	3.1692	1.43145

The results in Table 1 indicate ways the 15 manufacturing firms practices strategic knowledge management with respect to existence and preparation of knowledge management policy. The respondents were asked to evaluate different statements about knowledge management policy. The statement that my organization has an effective written knowledge management policy or strategy (KMP1) was supported by all respondents (100%) who strongly agreed or just agreed. The statement that my organization has an effective values system or culture intended to promote knowledge sharing (KMP2) was also supported by all (100%) respondents who either strongly agreed or just agreed. The statement my organization has either policies or programs intended to improve workforce retention (KMP3) was also supported by all respondents. The statement that my organization has policies for protection of valuable knowledge within the organization (KMP4) was supported by 51% of respondents against 49% of respondents who had contrary opinion. Few respondents (47%) supported the statement that the organization knowledge management policy elaborates on knowledge sharing strategies among employees (KMP5). The statement that the policy on knowledge management has adequate strategies for

knowledge generation and storage (KMP6) was supported by the least number of respondents (9%) with the majority having contrary opinion. Majority of respondents (60%) also supported the statement that knowledge management policy of the organization is accessible to all staff in the organization (KMP7). Finally, 49% of the respondents supported the statement that my organization knowledge management policy has strategies for utilization of the knowledge generated (KMP8).

Knowledge Generation:

The researcher also wanted to establish the extent to which knowledge generation was being practiced by the 15 large manufacturing firms in Nakuru Kenya. The respondents were required to rate a number of responses given on Likert scale

Table 2: Knowledge Generation

Knowledge Generation	SA %	A %	N %	D %	SD %	N	Mn	Mx	Mean	Std. Dev
KG1	81	19	0	0	0	65	4	5	4.1846	.39100
KG2	22	31	29	9	9	65	1	5	3.4615	1.19996
KG3	9	71	9	0	11	65	1	5	3.6769	1.03241
KG4	72	28	0	0	0	65	4	5	4.7231	.45096
KG5	28	63	9	0	0	65	3	5	4.1846	.58342
KG6	52	39	0	9	0	65	2	5	4.3385	.88877
KG7	31	31	27	0	11	65	1	5	3.7077	1.22121
KG8	42	49	9	0	0	65	3	5	4.3231	.64001

Table 2 shows the data presentation and analysis of responses about statement on knowledge generation practice in the 15 large scale manufacturing firms in Nakuru County, Kenya. The statement that the organization has processes for acquiring knowledge about our customers (KG1) was supported by all (100%) respondents who either strongly agreed or just agreed with statement. The statement that the organization has processes for generating new knowledge from existing knowledge (KG2) was supported by most respondents (52%) who agreed with the statement. Majority of respondents (80%) were of opinion that the organization has processes for distributing knowledge throughout the organization (KG3).

The statement that the organization has processes for acquiring knowledge about new products/services within our industry (KG4) was supported by all respondents who filled the questionnaires. Majority of respondents (91%) also supported the statement that the organization has processes for transferring organizational knowledge to individuals (KG5). Almost all the respondents (91%) supported the statement that the organization has processes for absorbing knowledge from individuals into the organization (KG6). Finally, the statements that the organization has processes for integrating different sources and types of knowledge (KG7) and that the organization has processes for organizing knowledge (KG8) was supported by 62% and 91% of the respondents respectively. It is evident that knowledge generation is an important practice that is ongoing in all large scale manufacturing firms in Nakuru County as evidenced by majority of respondents who supported different statements on knowledge generation. The mean responses for majority of statements was also four and above (>4), this means that knowledge generation practice was taken seriously in most the organization studied.

Knowledge Application:

The researcher also sought to establish the extent to which knowledge was being applied by the 15 large scale manufacturing firms in Nakuru County, Kenya. The results are presented in table 3

Table 3: Knowledge Application

	SA %	A %	N %	D %	SD %	N	Mn	Mx	Mean	Std. Dev
KA1	40	60	0	0	0	65	4	5	4.4000	.49371
KA2	51	11	20	18	0	65	2	5	3.9385	1.21033
KA3	49	51	0	0	0	65	4	5	4.4923	.50383
KA4	69	9	0	22	0	65	2	5	4.2615	1.22827
KA5	71	0	0	0	29	65	2	5	4.1231	1.37509
KA6	60	40	0	0	0	65	4	5	4.6000	.49371
KA7	69	31	0	0	0	65	4	5	4.6923	.46513
KA8	82	18	0	0	0	65	4	5	4.8154	.39100

Table 3 shows the results of the responses on the statements about knowledge application in the large scale manufacturing firm in Nakuru County, Kenya. Statement that the organization processes for using knowledge in development of new products/services (KA1) was supported by all respondents who either strongly agreed or just agreed. A big chunk of respondents (62%) supported the statement that the organization has processes for using knowledge to solve new problems (KA2). Still all respondents (100%) were of the opinion that the organization uses knowledge to improve efficiency (KA3). The statement that the organization uses knowledge to adjust strategic direction of the firm (KA4) was supported by the entire respondents. Majority of respondents (71%) strongly agreed with the statement that the organization has processes to protect knowledge from inappropriate use inside the organization (KA5). All respondents (100%) were also of the opinion that the organization has processes to protect knowledge from inappropriate use outside the organization (KA6). The statement that the organization has extensive policies and procedures for protecting trade secrets (KA7) was supported by 100% respondents and finally, the statement that the organization values and protects knowledge embedded in individuals was supported by all respondents too.

Knowledge Transfer:

The researcher also established the extent to which Knowledge was being transferred in the organization between staff at the 15 large scale manufacturing firms in Nakuru, Kenya. The results are presented in table 4

Table 4: Knowledge Transfer

	SA %	A %	N %	D %	SD %	N	Mn	Mx	Mean	Std. Dev
KT1	40	60	0	0	0	65	4	5	4.4000	.49371
KT2	58	42	0	0	0	65	4	5	4.5846	.49662
KT3	40	36	11	13	0	65	2	5	4.6000	.49371
KT4	20	70	5	5	0	65	2	5	4.2000	.40311
KT5	60	40	0	0	0	65	4	5	4.6000	.49371
KT6	29	51	9	11	0	65	2	5	4.2923	.45836
KT7	52	38	0	0	0	65	4	5	4.6154	.49029
KT8	60	29	11	0	0	65	3	5	4.6000	.49371
KT9	71	29	0	0	0	65	4	5	4.7077	.45836

The, Table 4 presents results of data analysis about the responses on the statements about knowledge transfer practice in the large scale manufacturing firms in Nakuru County, Kenya. The statement that the organization has a culture of knowledge sharing among employees (KT1) was agreed upon by all respondents (100%). Majority of the respondents (98%) too agreed with the statement that Information system allows and encourages knowledge sharing among staff (KT2). About 76% of the respondents also agreed with the statement that the organization gives motivation to encourage knowledge sharing among staff (KT3). The organization encourages sharing of knowledge and experience with other staff through special topic reports (KT4), this statement was supported by 90% of the respondents who either strongly agreed or just agreed. The statement that the management of the organization share knowledge and experience with other staff through means like journals, diaries etc (KT5) was supported by all respondents (100%) who filled the questionnaires . The statement that the organization knowledge is stored in a way that encourages sharing among staff (KT6) was supported by about 80% of the respondents who filled the questionnaires. All respondents (100%) agreed with the statement that the organization encourages workers to continue their Education by providing funding for work-related courses (KT7). Majority of the respondents (89%) were of the opinion that the organization facilitates the sharing of knowledge and information by accessing directories or expertise locators to find subject-matter experts (KT8). Finally, all respondents (100%) supported the statement that the organization facilitates virtual knowledge-sharing via Communities of Practice or team not located in the same geographical area (KT9). Knowledge sharing practice was generally agreed upon by all respondents in good measure as supported by majority of respondents who supported the statements about knowledge sharing by ether strongly agreeing or just agreeing. This is exemplified further by mean responses of above 3 simplifying that the 15 large scale manufacturing firms are sharing knowledge to a great measure.

Knowledge Organization:

The researcher also wanted to establish the extent to which knowledge was being organized by the large scale manufacturing firms in Nakuru Kenya. The data collected and associated analysis is given in table 5

Table 5: Knowledge Organization

	SA %	A %	N %	D %	SD %	N	Mn	Mx	Mean	Std. Dev
KO1	0	31	60	9	0	65	2	4	3.2154	.59928
KO2	0	69	31	0	0	65	3	4	3.6923	.46513
KO3	11	40	40	9	0	65	2	5	3.5231	.81217
KO4	40	40	11	9	0	65	2	5	2.1692	1.15338
KO5	0	31	20	29	20	65	1	4	2.6154	1.12767
KO6	0	29	51	20	0	65	2	4	3.0923	.70096
KO7	9	31	29	11	20	65	1	5	2.9846	1.26852

The Table 5 shows the results of the responses on the statements about knowledge organization in the large scale manufacturing firm in Nakuru County, Kenya. The statement that the organization has categorized knowledge into tacit and explicit knowledge (KO1) was supported by only 31% of the respondents with the remaining 69% having contrary opinion. Majority of the respondents (69%) who filled the questionnaires were of the opinion that the organization uses computer technology to organize and store knowledge (KO2). The statement that the form of knowledge organization in the organization enables easy sharing of the same (KO3) was agreed upon by about half of the number of respondents (51%). About 80 % of the respondents who filled the questionnaires supported the view that the organization has processes to protect knowledge from inappropriate use outside the organization (KO4). The statement that the management takes the knowledge organization seriously (KO5) was supported by only 31% of respondents with the rest not supporting the statement. Additionally, only 29% of the respondents supported the statement that knowledge is stored both in soft copy and hard copy (KO6) as most knowledge resides in people as tacit knowledge. Finally, only 40% of the respondents supported the statement that knowledge organization format encourages innovation in the organization (KO7) compared with the remaining majority who had contrary opinion. Generally, the low percentage of respondents who supported the statements about knowledge organization was clear indication that knowledge was not well organized in most of the organization.

Organizational Innovation:

The researcher also sought to establish the extent to which the 15 large scale manufacturing firms in Nakuru Kenya were performing in terms of innovation. The data collected and associated analysis is given in table 6

Table 6: Organizational innovation

	SA %	A %	N %	D %	SD %	N	Mn	Mx	Mean	Std. Dev
OI1	40	60	0	0	0	65	4	5	4.4000	.49371
OI2	60	40	0	0	0	65	4	5	4.6000	.49371
OI3	49	51	0	0	0	65	4	5	4.4923	.50383
OI4	63	37	0	0	0	65	4	5	4.6308	.48635
OI5	41	50	9	0	0	65	3	5	4.5231	.81217
OI6	40	49	11	0	0	65	3	5	4.2923	.65486
OI7	51	38	0	0	11	65	1	5	4.1846	1.21053
OI8	48	11	31	10	0	65	2	5	3.9538	1.11005
OI9	33	28	30	9	0	65	2	5	3.8308	.99325
OI10	39	40	0	22	0	65	2	5	3.9538	1.12404
OI11	32	39	18	11	0	65	2	5	3.9231	.97320
OI12	38	42	11	9	0	65	2	5	4.0923	.93078
OI13	54	28	18	0	0	65	3	5	4.3538	.77924
OI14	80	11	9	0	0	65	3	5	4.7077	.63055

Table 6 shows the distribution of responses about the organizational innovation in the 15 large scale manufacturing firms in Kenya. Responses about organizational innovation were grouped into four including product, process, market and administrative innovation as explained in following subsections. The statement that the organization has Enhanced goods quality using knowledge resources (OI1) was supports by all the respondents (100%) who filled the questionnaires. All the respondents (100%) were of the view that the number of new or improved products and services launched to the

market is superior to the average product in the industry (OI2). The entire number of the respondents also supported the statement that the organization uses knowledge management to widen the line of products without increasing costs (OI3). The statement that the organization has been able to continuously improve products due to market research was also supported by all respondents (OI4). Generally, it's evident that most of the organizations studied used knowledge management to improve product innovation as shown by mean responses of above 4 and almost all respondents supporting statements about product innovation.

As shown in table 6, the statement that through the use of knowledge management practices, the organization has prevented duplicate or redundant operations (OI5) was supported by majority of respondents (91%). The study also showed that 89% of the respondents supported the statement that knowledge about new methods of serving customers that are more efficient has been implemented continuously (OI6). Additionally, the statement that the organization has improved operational performance through collaborative efforts of Communities of Practice (OI7) was supported 89% of the respondents who filled the questionnaires. Finally, the statement that Knowledge management has enabled the organization to minimize the cost of production greatly (OI8) was supported by 59% of the respondents who strongly agreed or just agreed with the statement. The results of the study shows that most of the organizations that participated in the study used knowledge generated to improve process innovation.

Table 6 also shows responses about the extent of administrative innovation in the firms studied. The statement that the organization has been able to improve the management structure using external knowledge sources (OI9) was supported by 61% of the respondents. About 79% of the respondents were of the view that the application of knowledge management practices in the organization provides evidence of organizational reform and transformation (OI10). The statement that the organizational structure is flexible and encourages improved performance among the staff (OI11) was supported by 71% of the respondents. The high percentages of respondents who supported statements administrative innovation is a clear indication that strategic knowledge management has also been used to support administrative innovation in the respective firms.

Finally table 6 shows results about responses on market innovation by the large scale manufacturing firms in Nakuru County, Kenya. The statement that the organization has used knowledge about prospective customer needs to expand the existing products into new untapped markets (OI12) was supported by majority of respondents (80%) who agreed with the statement. Additionally, 82% of the respondents who filled questionnaires were of the opinion that the respective organizations had used research knowledge to identify new uses of the current products (OI13). Finally, majority of the respondents (91%) agreed with the statement that the organization uses knowledge management to improve the performance of sales personnel (OI14). It's also evident enough that the organization uses knowledge to improve market innovation as shown by high percentages of respondents who supported statements on market innovation. Mean responses are also above 3.8.

Correlation Analysis:

In this subsection the correlation analysis using the Pearson Product Moment Correlation was made to first determine the degree of multicollinearity between the independent variables and also show the degree of their association with the dependent variable separately and the resulting correlation matrix given in Table 7

Table 7: Bivariate Pearson Correlation Coefficient

		KMP	KG	KA	KT	KO	OI
KMP	Pearson Correlation	1	-.331**	.218	.261*	.259*	.429**
	Sig. (2-tailed)		.007	.081	.036	.037	.000
	N	65	65	65	65	65	65
KG	Pearson Correlation	-.331**	1	.044	.434**	.410**	.382**
	Sig. (2-tailed)	.007		.728	.000	.001	.002
	N	65	65	65	65	65	65
KA	Pearson Correlation	.218	.044	1	.187	.313*	.301*
	Sig. (2-tailed)	.081	.728		.135	.011	.015
	N	65	65	65	65	65	65
KT	Pearson Correlation	.261*	.434**	.187	1	.261*	.696**
	Sig. (2-tailed)	.036	.000	.135		.036	.000

	N	65	65	65	65	65	65
KO	Pearson Correlation	.259*	.410**	.313*	.261*	1	.354**
	Sig. (2-tailed)	.037	.001	.011	.036		.004
	N	65	65	65	65	65	65
OI	Pearson Correlation	.429**	.382**	.301*	.696**	.354**	1
	Sig. (2-tailed)	.000	.002	.015	.000	.004	
	N	65	65	65	65	65	65
**. Correlation is significant at the 0.01 level (2-tailed).							
*. Correlation is significant at the 0.05 level (2-tailed).							

Independent Variables: Knowledge Management Policy (KMP), Knowledge Generation (KG), Knowledge Transfer (KT), Knowledge Organization (KO) and Knowledge Application (KA) and **Dependent variable:** Organizational Innovation (OI). The results in Table 4.9 show the correlation between Strategic Knowledge Management Practices variables and organizational innovation in large scale manufacturing firms in Nakuru county Kenya. Knowledge management policy was moderately positively and significantly correlated with organizational innovation ($r=.429$, $p=0.00$, $\alpha = 0.05$), while knowledge geration was weakly positively and significantly correlated with the organizational innovation ($r= .382$, $p=0.002$, $\alpha = 0.05$). Knowledge application was significant and positively correlated with organizational innovation ($r= .301$, $p= 0.015$, $\alpha = 0.05$) . The correlation between knowledge transfer and organizational innovation was significant and strong positively correlated ($r =.696$, $p=0.000$, $\alpha= 0.05$) and finally knowledge organization was significant and weak positively correlated with organizational innovation ($r = .354$, $p=0.004$, $\alpha=0.015$)

Regression Analysis:

The study used simple OLS Regression analysis that was multiple in natures as there were five independent variables. The independent variables were knowledge management policy, knowledge generation, knowledge application, and knowledge transfer and knowledge organization. The dependent variable was organizational innovation. Multiple regression analysis involved calculation of coefficient of determination (R^2), Analysis of Variances (ANOVA) and regression coefficients

Table 8: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.786 ^a	.619	.586	.15192
a. Predictors: (Constant), knowledge Organization, Knowledge Policy, Knowledge transfer , knowledge Application and knowledge Generation				

In table 8, the overall correlation coefficient (R) between independent variables strategic knowledge management practices and organizational innovation was 0.786. This means that there was a strong positive relationship between strategic knowledge management practices and organizational innovation. Furthermore, it indicates that the model explains only 58.6 % of the variations in organizational innovation in large scale manufacturing firms in Nakuru County as shown by adjusted R^2 of 0.586. Hence 41.7% Variations in organizational innovation is explained by other factors not included in the model.

Table 9: Analysis of Variances

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	2.208	5	.442	19.137	.000 ^b
	Residual	1.362	59	.023		
	Total	3.570	64			
a. Dependent Variable: Organization Innovation, b. Predictors: (Constant), knowledge Organization, Knowledge Policy, Knowledge transfer, knowledge Application, knowledge Generation						

According to table 9, the overall significance of model 1 was 0.0010 with an F value of 19.137. The level of significance was lower than 0.05 and this means that strategic knowledge management practises shows statistically significant influence on organizational innovation in large scale manufacturing firms in Nakuru County, Kenya.

Table 10: Coefficients of Independent Variable

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	1.809	.803		2.254	.028		
	KMP	.085	.024	.325	3.538	.001	.767	1.303
	KG	.023	.056	.041	.415	.680	.659	1.517
	KA	.231	.082	.264	2.825	.006	.741	1.350
	KT	.842	.147	.536	5.728	.000	.738	1.355
	KO	.013	.042	.031	.314	.754	.679	1.473
a. Dependent Variable: Organizational Innovation								

Table 10 further, shows the coefficients of independent variables (knowledge management policy, knowledge generation, knowledge application, and knowledge transfer and knowledge organization) the values of β and values of t . The model was thus estimated as shown in equation (2).

$$OI = 1.809 + .085 KMP + .023 KG + .231KA + .842 KT + .013KO \dots \dots \dots (2)$$

The estimated model equation (2) simplifies the causal effect relationship between strategic knowledge management practices and organizational innovation in large scale manufacturing firms in Nakuru County, Kenya. The value **1.809** is the intercept term of the model showing the level of organizational innovation when the independent variable in the model are held constant at zero. Knowledge generation had a statistically insignificant influence on organizational innovation ($\beta_1 = .023$, $t = .415$, $p = .680$ and $\alpha = 0.05$), the null hypothesis that knowledge generation has no significant influence on organizational innovation was thus accepted. Knowledge organization had statistically insignificant influence on organizational innovation ($\beta_2 = .013$, $t = .314$, $p = .754$ and $\alpha = 0.05$), the null hypothesis that knowledge organization has no significant influence on organizational innovation was thus accepted. Knowledge transfer had a statistically significant influence on organizational innovation ($\beta_3 = .842$, $t = 5.728$, $p = .000$ and $\alpha = 0.05$), null hypothesis that knowledge transfer has no significant influence on organizational innovation was thus rejected. Knowledge application had a statistically significant effect on organizational innovation ($\beta_4 = .231$, $t = 2.825$, $p = .006$ and $\alpha = 0.05$), the null hypothesis that knowledge application has no significant influence on organizational innovation was thus rejected. Finally, Knowledge management policy had a statistically significant influence on organizational innovation ($\beta_5 = .085$, $t = 3.538$, $p = .001$ and $\alpha = 0.05$), the null hypothesis that knowledge management policy has no significant influence on organizational innovation was thus rejected.

V. CONCLUSION

Conclusion:

From the findings of the study, the following conclusions were made: it was concluded that knowledge generation has a positive influence on organizational innovation but the influence is not major. Knowledge organization has a positive influence on organizational innovation; however the influence is not a significant one. Knowledge transfer has a significant influence on organizational innovation in large scale manufacturing firms in Nakuru County, Kenya. The study therefore concludes that knowledge application has a major significant influence on organizational innovation. Finally, knowledge management policy has significant influence on organizational innovation. From the findings of the study and conclusions made, the study makes a number of recommendations. First, the management of large scale manufacturing firms in Nakuru County should invest in knowledge generation activities like product research and involving consultants so as to create valuable knowledge stock which may be codified or tacit. The management boards of large scale manufacturing should invest in management information systems that ensure that codified knowledge generated is organised in a systematic way and stored in a form that makes retrieval easy. The management of large scale manufacturing firms in Nakuru County should come up with programmes for ensuring the sharing of knowledge assets of the firm. The management and decision makers in large scale manufacturing firms should encourage the utilization of knowledge assets to improve organizational innovation. The management of large scale manufacturing firms to develop a detailed knowledge management policy that can serve as a basis for the other strategic knowledge management practises. Future studies should be carried out with more strategic knowledge management practises in addition to the five practises covered in this study. The current study was also a survey of large scale manufacturing firms hence it has limited

application in the manufacturing industry only and superficially large scale manufacturing firms'. Future studies can also go a step further by analysing all manufacturing firms in Nakuru including the large scale, medium scale and small scale to see if findings are comparable.

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