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INFLUENCE OF KNOWLEDGE SHARING ON SUSTAINABILITY OF SUGAR COMPANIES IN KENYA

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ABSTRACT

Sugar companies in Kenya like many other firms in the world have used Knowledge Management Practices (KMPs) since 1959, to transform knowledge to enhance their performance and sustainability but have realized dismaying results as their performance consistently decline with some companies sinking under heavy debt burden. Most companies downsize on their workforce as others get shortlisted for privatization for being on the verge of collapse at a time when domestic demand for sugar remains high, causing rising sugar imports from 4000 tons in 1984 to 249,336 tons in 2001. Studies have been conducted on KMPs' with focus to corporate performance but none has fully considered the influence of knowledge sharing on organizational sustainability particular in sugar companies in Kenya. The objective of the study was to establish the influence of Knowledge sharing on sustainability of sugar companies in Kenya. The study used null hypothesis in testing the objective; 'Knowledge sharing has no significant influence on sustainability of sugar companies in Kenya'. A sample population of 250 respondents from all the five operational state owned sugar companies' managerial staff was studied using descriptive survey. The outcome of this study is expected to cause a paradigm in improving management, performance to cause sustainability of sugar companies and adds stock of invaluable literature materials for reference by scholars. The study reveals from its descriptive statistics on table 4.12 that Knowledge sharing has a mean score =3.55 and standard deviation = 0.46 indicate that it has influence on sustainability. Inferential statistics in Table 4.14 also reveal that Knowledge sharing registers $r=-.292$ and a p-value of .000 at 95% confidence interval, accounted only for 8.5% ($R^2=.085$) of variation level of sustainability. The ANOVA showed $F [(1, 248) = 23.055, p<0.05]$ confirming that it is a weak predictor of sustainability of sugar companies in Kenya. On the basis of the test, the study rejects the null hypothesis that 'knowledge sharing has no significant influence on sustainability of sugar companies in Kenya' and concludes that the companies should encourage knowledge sharing culture and experience based promotion policies. Culture of knowledge sharing amongst the sugar companies by encouraging inter-company benchmarking both locally and abroad and the companies to implement knowledge sharing strategies like experience through group based promotion systems is recommended.

Keywords: Knowledge management practices, Sustainability

INTRODUCTION

Effective Knowledge Management Practices (KMPs) such as knowledge creation, sharing, acquisition and application are fundamental to organizations' performance and sustainability across the world. America and the rest of the world changed dramatically by the end of the 20th century by succumbing to the demands of knowledge era and that with the dawn of industrialization their growth depended on the new knowledge economy- the level of knowledge sharing (PPI, 2008). It is one major factor in addition to ecological factors (Wagner, 2005) and organizations' culture that influence firms' competitive advantage and sustainability. In developed and developing countries such as Italy, Pakistan and Malaysia, the study. of KM conducted amongst multinational and pharmaceutical companies indicated that it had relationship with improved performance (Rizwan and Mohamud, 2012). Other isolated studies such as Susan & Kasim (2010) on significant role of KMPs' on organizational performance revealed that that the processes are important determinants of organizational performance. Mills & Smith (2011) also in examining the effect of KM Processes (structures and acquisition) in their study also revealed direct relationship to organizational performance. Studies done in Norway by Dingsoryr (2002) also revealed that KM practices are capable of influencing performance and growth. Knowledge management should therefore help corporate management to cut down on organization layers, increase flexibility of enterprise and contribute to sharing infrastructure (Huosong Xia, Kuanqu, Du and Shuquin, Cui, 2003). Gold et al. (2001) found that KMPs from the

perspectives of organizational capability are vital drivers to organizational effectiveness, while Lee and Choi, (2000) examined correlation between KMPs (sharing) and organizational creativity and concluded that sharing is significant predictors for organizational innovation which is a basis for organizational growth and performance.

Regional perspective

America and the rest of the world changed dramatically by the end of the 20th century by succumbing to the demands of knowledge era and that with the dawn of industrialisation their growth depended on the new knowledge

economy- the level of knowledge sharing (PPI, 2008). It is one major factor in addition to ecological factors (Wagner, 2005) and organizations' culture that influence firms' competitive advantage and sustainability. In developed and developing countries such as Italy, Pakistan and Malaysia, the study of KM conducted amongst multinational and pharmaceutical companies indicated that it had relationship with improved performance (Rizwan and Mohamad, 2012). Other isolated studies such as Susan & Kasim (2010) on significant role of KMPs' on organizational performance revealed that that the processes are important determinants of organizational performance. Mills & Smith (2011) in examining the effect of KM Processes (structures and acquisition) in their study also revealed direct relationship to organizational performance. Studies done in Norway by Dingsoryr (2002) revealed that KM practices influence performance and growth. Knowledge management should therefore help corporate management to cut down on organization layers, increase flexibility of enterprise and contribute to sharing infrastructure (Huosong Xia, Kuanqu, Du and Shuquin, Cui, 2003).

Regional perspective

In Nigeria, IFAD (2007) pointed out that KM became one of the key deliverables for corporate actions that enhanced organizations dramatic transformations in agriculture and industry, and served as a means of alleviating poverty amongst the poor Rural Nigerians. This means that Knowledge enables man to develop flexible behaviour in understanding and adjusting to the world around him as well as transforming it to suit his needs and that it is capable of helping humans become subjects rather than objects of change (Scaruffi, 2003). According to Prusack & Leissers, (2010) and Ahmed *et al* (2002) adoption of prudent KM based competencies in firms human capital should lead to companies' efficient utilization of resources, reduction of wastages, improved competitive edge, wider market share, profitability which are elements of growth and sustainability. In Mesopotamia, Egypt, India and China KMP (knowledge acquisition) enabled people to improve their ecosystems, adapted to it and diminished its impact on their civilization (Jean, 2010). Knowledge sharing which this study focuses is significant in addressing challenges and impacting on growth and sustainability of companies.

The study area - Sugar Companies in Kenya

The study was conducted in the state owned sugar companies which includes Mumias (1922), Muhoroni (1966), Chemelil (1968) in Kisumu, Mumias (1973), Nzoia (1978) in Western Kenya and Sony (1979) in South Nyanza were established through Sessional Paper no. 10 of 1965 to accelerate economic development, address regional imbalance, creating job opportunities, promote indigenous entrepreneurship (growth of subsidiary industries) and foreign investment (Odek et al., 2003). The companies spread across western Kenya, and Nyanza in areas that share common favorable characteristics laying on altitude 1600m above the sea level, hot climate with temperature range of between 21^oc -27^oc with reliable rainfall pattern of at least 1270 mm per a year and rich geological landscape of deep well drained alkaline soil with Ph. of 4.8 – 8.5 that supports cane farming. Other privately owned companies includes West Kenya (Kabras) in 1981, Butali (2004), So in in Kericho (2006), Transmara (2007, Sukari industries Ltd (2009) and Kibos Allied Industries. In 1966, the government provided financial and technical support to the sugar industry to facilitate realization of objectives. Despite the support, the companies continue to perform poorly and worsened as local demands outstripped production causing sugar import figures to rise from 4000 tonnes in 1984 to 249,336 tonnes in 2001, from COMESA region and other sugar producing countries such as Brazil, UK and Mexico (KSB, 2007). Companies' poor performance subjected them to sharp focus of discussion in Kenya Parliament (Wanyande, 2010) since decline in productivity shattered the country's' dreams for self-sufficiency, job creation and sustainability as some firms such as Miwani and Muhoroni went into receivership.

Statement of the Problem

Knowledge is considered the heart of global economy (Carbaugh, 2007) and efficient Knowledge Management Practices (KMPs') especially Knowledge sharing by firms' is significant for their sustainability in the world (Acier, 2006). For over six decades since its introduction in management in 1959 (Drucker, 1959; Kellogg, 1986) Sugar companies have shared knowledge resources in individuals and group in their quest to enhance their performance and sustainability, but have realized dismaying results. The companies continue to perform poorly with Muhoroni being put under partial receivership in 2010 and Miwani in full receivership. The companies' poor performance brought them under sharp focus of discussion in Kenya Parliament (Wanyande, 2010) and made them shortlisted for privatisation. The country's situation worsens with 200,000 metric tonnes deficit persisting as local demands continue to outstrip production causing sugar import figures to rise from 4000 tonnes in 1984 to 249,336 tonnes in 2001 from COMESA region and non-COMESA sugar producing countries such as Brazil, UK, Mauritius and Mexico (Odek, 2003; KSB, 2007). To date, the companies have failed to raise adequate buffer for both its home consumption and export or embarked on growth strategies but instead are downsizing on their workforce in the

industry, sagged in debt burdens and ailed by financial constraints (KSB, 2005; KSB, 2010). The country continues to witness underperformance in sugar production with a remarkable loss of foreign exchange on increased sugar imports, loss of employment to workers and reduction of industrialization initiatives that may leverage growth and sustainability of sugar industry. While studies conducted in Italy, Pakistan and Malaysia amongst multinational and pharmaceutical companies indicate that KMPs' had relationship with improved performance (Rizwan & Mohamud, 2012), others done in Norway by Dingsoryr (2002) also reveal that KMPs' is capable of influencing performance and growth. The question of sustainability thus remains unanswered as these studies did not however reveal that KMPs'(sharing) could also lead to organizational sustainability. In particular, these studies were on multinational and pharmaceutical corporations and little research seem to have been done in sugar companies in Kenya focusing on the relationship between Knowledge sharing and organizational sustainability.

It is on the basis of the forgoing claims that this study is purposed to explore the influence of Knowledge sharing on Sustainability of Sugar companies in Kenya using descriptive survey. The specific objective of the study was to establish the influence of Knowledge sharing on sustainability of sugar companies in Kenya. The research hypothesis was knowledge sharing has no statistical significant influence on sustainability of sugar industries in Kenya. The significance of the study is that the county governments may embrace suggestions by the study and allocate funds to develop human capital resources in the sugar companies to achieve the goals that led to their initiation in 1966 and the economy's sustained growth in sugar production. The report of this study is expected to increase stock of invaluable literature for reference by scholars who will endeavour to research in related area. It is also envisaged that study will equip Management of sugar companies with supportive knowledge management based practices and learning cultures that may be adopted besides tangible capital resources to foster partnership for enhanced performance, growth and sustainability.

LITERATURE REVIEW

Resource Based Theory

This theory originates from organizational economics and is associated with Schumpeter (1934) and Penrose (1958). It states that a firm's competitive advantage is dependent on cumulative efforts of its resources and capabilities. This was partly supported by Scarborough & Carter, (2000) who purported that credibility of the theory is based on the fact that it looks at KMPs' as an attempt to create and exploit organizations' knowledge resources for success in realizing its social, economic and environmental (benefits) sustainability. Venkatraman & Tanriverdi, (2004) also support the theoretical assertion that resources have capacity of bringing organizational performance and competitive advantage but are not sufficient in its self in the absence of knowledge capabilities. The theory is relevant to the study because it suggests that capability of an organization which lies in its knowledge resource base is fundamental in bringing performance without which sustainability may not be achieved. It implies therefore that an organization should focus its attention at improving the knowledge resources by enhancing the mechanisms of knowledge creation, sharing, conversion and application to achieve competitiveness and sustainable growth.

Human Capital Theory

Human capital means knowledge, skills and capability of individual employees that permits their provisions of solution to customers (Tapsell, 1998). The theory was coined by an American economist, Theodore W. Schultz in 1960. The theory was reviewed in the study of intellectual capital by the Economics Institute of Washington DC, that broadens its worth beyond an institution or a firm to the nations that "the economic value of the nations depends more on employees skills, knowledge and business problem aptitude than it does upon the market value of the firms commercial output" (Di Steffano and Kalbaugh, 1999). It states that an institutional growth is dependent on an aggregate knowledge and skills in its workforce. It is relevant to this study because it points out that for an institution to grow and sustain its structures, wealth and people, it must invest heavily in its human capital and continue to improve on it by sound KMPs' practices. Grant (1991) also argues from resource based point of view that the source of a firm's competitive advantage lies in its human capital and their knowledge and not how it positions itself in the market. Schultz and Grant's perspectives are unrealistic because the firms' aggregate knowledge assets and its position in the market are complementary and vital to its performance, economic, ecological and social sustainability.

Intellectual Capital theory

According to Dzinkowski (2000) Intellectual Capital Theory (ICT) describes a stock of capital knowledge based equity which a company possesses that may be end result of Knowledge transformation process or knowledge itself that is capable of transforming into intellectual property of the firm. Intellectual capital thus may be broken down

into three areas, human capital, structural capital and customer capital. Human capital is comprised of knowhow, competence, skills and capability of human members of the firm. Structural capital is comprised of the capability that is developed to meet market requirements such as patents and trademarks, process improvements methodologies to improve effectiveness and profitability of the firm while Customer capital on the other hand includes communication between external and internal entities of the organization such as customer loyalty, good will and stakeholder's relationships. According to Edvison & Malome (1997), the above three variable capital components correlate to deliver value to customers making organizations to cut competitive edge and built value platform that makes it sustainable.

The value platform may be illustrated as follows:

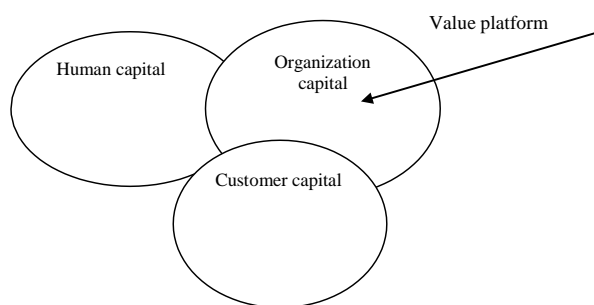


Figure 1: Value Platform Model
Edvison and Malome (1997).

Value platform articulates that the intersection of the three capitals creates value that is fundamental to corporate sustainability. From the forgoing theory, it is worth noting that the benefits of investing in KMPs' are intuitive and should be authentic to proactive managers that are attempting to compete in the 21st century and beyond since it brings benefits to individuals, organizations and Community of practice as follows: For individual Employees, KMPs' helps workers enhance their job performance, saving of time through better decision making and problem solving, enable individual workers build a sense of community bond within the organization. Knowledge acquisition helps to keep employees professionally relevant and up to date and provide employees with challenges and opportunities. Ovaska et al (2009) asserts that for Community of Practice, the sharing of companies' knowledge assets serves as a foundation for collaboration which is significant in developing professional skills, promoting peer to peer mentoring through knowledge strategy, facilitates effective networking, collaboration and development of a corporate culture.

According to KPMG (2000) Organizations, embracing appropriate KMPs' helps to drive strategies that enhance problem solving diffuses desirable corporate culture and best practices and improves knowledge that is embedded in product or services. KMPs' Knowledge creation, sharing, application and conversion may help organizations in innovation, improving customer service and commercialisation of new products. Knowledge sharing facilitates cross fertilization of ideas and increases efficiency in application which leads to innovation. The theory is also relevant in that provides insight that knowledge sharing in particular is key KMPs' besides conversion and application that may improves an organizations' responses to market challenges (KPMG, 2000; Taminian et al., 2009), the attainment of customer capital that makes it to remain competitive and drives it towards sustainable growth. The relevance of ICT lies in its recognition to sum of firms' knowledge which is a key factor in production. The theory also considers Customer capital which is an important element of performance and sustainability. Capturing Customer capital also involves reaching the community through corporate social responsibility which also contributes to social sustainability. Therefore, for an organization to achieve sustainability, it has also to direct its KMPs' towards society through social responsibilities and improving its environment controls. According to Edvison and Malome (1997), if a firm which does not have efficient KMPs' will not position itself to the market, will lack competitiveness, and compromise its survivability.

Conceptual Framework

Figure 2 is a conceptual framework that shows the relationship between Knowledge sharing as independent variable and sustainability of sugar companies is dependent variable under the moderation of government policy.

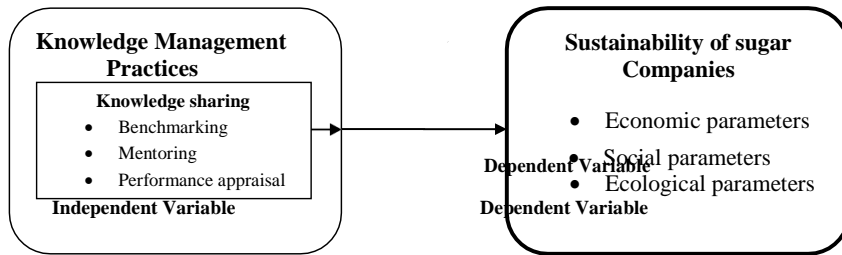


Figure 2: Conceptual Framework

Empirical Review

Knowledge Sharing and Sustainability of sugar companies in Kenya

Knowledge sharing is a process of distributing explicit and implicit knowledge amongst employees within an organization (Bose, 2004; Tiwana, 2003). It involves information sharing or using qualified performance data. Knowledge sharing may take form of benchmarking which provides an opportunity to blend tacit and explicit knowledge possibly through socialization processes to produce innovative outcome (Nonaka & Takeuchi, 1995). This practice thus helps organizations in transferring knowledge resources by identifying relevant information and disseminating it so that learning takes place. According to Foucault (1980) and Leonard (1999) the new Knowledge based economy places great significance on knowledge diffusion and use of information as well as its creation. It is an organization Knowledge capacity in terms of skills, intelligence and expertise that give an organization its peculiarity, competitive performance and sustainability. Knowledge sharing is key in enhancing innovation and capability of firms (Saenz et al., 2009) the reason Stein & Riddestrale (2001); Winter & Sculanski (2002) argued that Knowledge Management is worthless if adequate processes of diffusion are not structured in place.

Teece (2001) and Schampeter (1934) also added to the argument that in an economy where creative destruction and new combinations predominate, it is the judicious integrations of knowledge creation and effective diffusion that stimulates business performance and its economic growth. Benchmarking on the other hand is an important way of Knowledge sharing. Swart & Kinnie, (2003) indicates that firms perform well when they share knowledge with others, form network to provide integrated quality products that enable them to gain large market share and profitability. It is the process of comparing performance of what the employees are doing in one organization with the colleagues in a competing firm. Well disseminated knowledge by an organization creates intellectual capital base. Knowledge is sourced from many areas; explicit knowledge from socialisation (Brainstorming, e-learning, community of practice and informal meetings); internalization sources (documents, reports, seminars and trainings and meetings) and externalization (Workshops, seminars and trainings and informal visits) while Tacit knowledge may be sources from externalization, socialisation and internalization, Takeuchi (1995), and He & Li, (2010).

Taminiau and De-launge (2009) also claim that the most important route to innovation is informal knowledge sharing because it has operational benefits which helps people to direct labour savings and reduce staff turnover. It also increases employees' job satisfaction and effectiveness and promotes process benefits which help to increase Productivity. Fowler & O'Gorman, (2005) suggest that mentoring is also a knowledge sharing mechanism and it involves providing emotional guidance, coaching and role modelling cultures friendship which in effect improves employees' motivation, work relationship, commitment and job performance.

Performance appraisal has also emerged as an important knowledge sharing methodology, IRIS Employment Trend (2003) indicates that it focuses on empowering, motivating and rewarding employees best practices. It helps organisations to correct mismatch in performance and this gives an organization competitive and sustainable advantage. Knowledge diffusion may also be enhanced by interaction between social capital and organization capital (Armstrong, 2006). Sharing involves orienting information to fit culture and skills which are specific to

organizational requirements; for this is fundamental to improved performance and sustainability. According to Huosong Xia et al., (2003) Knowledge Management especially sharing may significantly help corporate management to cut down on organization layers, increase flexibility of enterprise and contributes to its efficiency. In addition, they pointed out that KM also helps in reducing time wastage required to capture correct information or make decisions, reduce production costs, improves success rate and potentially reduce research and development costs and product development cycle time. Organizations' performance and sustainability depends on its capacity to manage its human capital competencies' (Knowledge) which is possible through varied practices such as mentoring, performance appraisal and bench marking which makes knowledge sharing feasible.

According to Davenport & Prusak, (2000) where a firm has efficient KMP such as adoption, sharing and application there would be competitive advantage as the firm acquire larger market by delivering competitive intelligence to make it withstand competition. Finally, Matzler & Mueller, (2011) argue that effective knowledge sharing can facilitate organization learning and innovation since before combining new knowledge, relevant knowledge must first be acquired and then incorporated into existing knowledge base. Knowledge sharing is critical in creating a firm's competitive advantage.

Sustainability

According to Bruntland Commission of 1987, WCED, (1987) World Bank, (2005), Kuckartz & Wagner, (2010) Sustainability means "meeting the demands of the present society without compromising ability of future generations to satisfy their own needs by responding to current economic and social environmental challenges". The purpose of sustainability is to improve economic environment and social performance of companies (Bos Brouwers, 2010) to enhance their survivability and make them self-supporting. A sustainable company is one that offers product and services that fulfil the societal needs while considering its ecological, social and economic impacts on earth's inhabitants and without compromising the needs of its future generations, (Azapagic & Perdan, 2000; Welford, 2000). DETR, (2000) further argued that sustainability is all about ensuring better quality life for every one now and for generations to come through social progress while meeting people's needs, protecting environment, ensuring prudent use of natural resources and maintaining stable economic growth and empowerment. Roy, (2003) argued that the essence of sustainable development is determined by the people and is attributed to changes of people's attitudes and habits. According to Hennische, (2000) organisational sustainability could be measured using economic, social and ecological parameters the achievement which anchors on firms prudent KMPs and a country's political good will. The bottom line of sustainable development is to develop capacity to help the poor to maintain and improve their natural capital (natural resources) while developing their human capital (human resources) and manmade capital (investment infrastructure, social capital, cultural bases and political systems) that makes society function, (Cellisr & Jean- Louis, 2004). Precisely sustainability issues are focused on making organizations self-reliant in their social, economic and ecological growth and developments.

The study on KM had been conducted in developed countries such as Italy, and Pakistan by Rizwan and Mohamud, (2012) and in Malaysia amongst multinationals Pharmaceutical companies and Microsoft & Hewlett Packard where it established that there was relationship between KM and performance. Similar study had also been done in Norway by Dingsoryr (2002) in medium sized companies where it established that an intranet based KM practices for knowledge cartography and knowledge repository for larger software was significant in influencing performance and growth. Even though Rizwan and Mohamud (2012) studies confirm that there is significant association between KMPs' with performance, it was based on Multinational firms while this study would be based on national context with different operational and structural perspectives.

Doo et al., (2005) also indicated that many firms lack understanding of how to develop KMP and sharing strategies that are capable of driving the firms to innovation and sustainability, a challenge that this study will investigate. These previous studies linked KMPs' influence to firm's economic sustainability but were blatantly silent on whether the same KMPs' could also influence firm's ecological and social sustainability. It implies however that lack of empirical verification of a strong link between KMPs' and organizational performance and sustainability in diversity exist which thus fuel the urgency for this study. Although the previous researchers who obtained empirical support used case studies (Zaim, 2007) and survey indicated positive relationship, their findings could not be generalised to a wider population. Because this study is purposed to be used for general application, census design has been considered appropriate. Furthermore, no previous studies had captured government policies and its moderating effect on KMP and organizational sustainability. Elsewhere in the world, researchers had centred their

interest on relationship between KMPs' and the firms' economic sustainability and very little interest had been put in studies linking KMPs' to corporate sustainability in its diverse perspectives.

METHODOLOGY

Research Design

This study used descriptive survey design to collect data from all the functional state owned sugar companies in Kenya. Design is a scheme or plan that is used to conduct the study to generate answers to research questions, (Noum, 2007; Orodho, 2003). It is a blue print of collecting, measuring and analyzing data (Kothari (2008)). Design is often chosen and used in research process to provide a basis upon which the study is configured and in which all aspects of research are linked to provide meaning (Kothari, 2008; Laurel, 2011). The relevance of research design is to provide direction of what methodology is to be used to collect and analyze data to answer research questions. In the exercise, questionnaires, interview guides were employed to collect, analyze and interpret the state to provide answers to research problems. The choice of descriptive survey for this study was based on its suitability in an extensive study of this kind in terms of its economy of time and cost in research process (Osoo & Onen, 2005).

Population and Sample of Study

This study focused on population of 1200 managerial employees of all the operational state owned sugar companies in Kenya. A target population for the study is what Sekaran & Bougie (2010) defined as the entire group of people, events or things with common observable characteristic that researcher is interested in and wishes to investigate through a sample of 300 respondents. The sample size was arrived at using Yamane (1967) formulae at 95 % level of confidence with 5.0margin of error as given by:

$$n = \frac{N}{1 + N(e)^2}$$

Where: N - population sample; n - sample size; e - level of precision (confidence)

This obtained Sample size translates to 25% of the population, which was considered representative and adequate to minimize the likely error in generalizing findings of the study, since it is over 10% (Saunders et al., 2005). The sample was distributed as shown below (Table 1):

Table 1: Population sample, managerial staff and sample size distribution

| Sugar Companies | Sample Population | Managerial Staff | Sample Size (n) |
|-----------------|-------------------|------------------|-----------------|
| Mumias | 1860 | 300 | 60 |
| Sony | 1700 | 280 | 60 |
| Muhoroni* | 800 | 180 | 60 |
| Nzoia | 1685 | 270 | 60 |
| Chemelil | 795 | 180 | 60 |
| Miwani ** | - | - | - |
| Total | 6840 | 1200 | 300 |

Source: Companies HR Depts., (2016)

* Partial receivership ** Full receivership.

Sampling Technique

The study adopted non probability sampling approach and in particular purposive random sampling technique which made it focus on respondents with reliable experience especially at the company who meets the purposes of the study. This sampling technique has also been chosen because its cost and time saving to use in gathering data (Osoo & Onen, 2005). According to Mugenda & Mugenda (2003) and Kumar (2011) sampling is a process of selecting a few respondents (sample) from a bigger group (sampling population) to become the basis of estimating or predicting the prevalence of unknown piece of information situation or outcome regarding a larger population in the study. It increases researchers' scope and flexibility in coverage in spite of the constraints of time and resources (Khu & Pall, 1993). According to Purposive technique is relevant and popular with experienced studies like this one that required specific information from specific individuals (Kinoti (2009)), the reason choice of these techniques of sampling were made. It is further justified by Onen & Osoo (2005) that random and purposive focus the researcher's attention on the intended respondents and enables him/ her appreciate the economy of time and they often lead to collection of accurate information.

Data collection Instrument

The instruments are means which aided the researcher in data gathering. The study used questionnaires and interview guide to collect data.

Questionnaires

These were using to collect primary or qualitative data. Questionnaires were developed in structured (Open-ended) and semi-structured (Closed- ended) forms. Significantly, the structured questionnaires restricted respondents to hypothetical views. Besides open ended questionnaires, the researcher used Semi structured (closed ended) questionnaires because of their suitability in encouraging clientele responses (Pettit and Frances, 2000). Open and closed ended questionnaires were constructed and administered with the assistance of “collectors” to a sample of respondents who aided in soliciting of primary data, (Orodho, 2003). The choice of questionnaires was based on the fact that they required little time, low cost of training for research assistants to administer and less cost of administration generally (Vinten, 1995).

Interview guide

Interview guide was also self-administered. According to Robison (2002) such interview questions were pre-determined but whose wording could be changed, explanation given for and additional question added or omitted as long as satisfactory responses are achieved. Parallel to what was gathered through questionnaires, the interview questions assisted researcher to provide scholarly focus and built his intellectual ideas. Interview schedule comprised of structured questions were also used to interview 20 managers from the companies. This was in line with Mason (2010) who acknowledges that a sample of between 10-20 respondents is ideal for qualitative interview. Easter by- smith *et al.*, (2002) posited that interview schedule makes it easy to comprehend constructs used by interviewees as a basis for their opinion and beliefs on issues.

Interview guide were appropriate for this study since it enabled he researcher to check against ambiguity and inadequacy in the main instrument (Igwe, 2005). Finally, it also allowed the study to collect in-depth respondents’ feelings and attitudes which could not however been captured by the questionnaire alone. They were also suitable for this study since they were easy to analyze, probed interviewee’s independent views, gave respondents freedom, spontaneity of answers and eased the testing of hypotheses (Vinten, 1995). According to (Onderi and Makori, 2012) these instruments derive their significance also in diversifying responses and reducing clientele’s question fatigue.

Documentary Analysis

The researcher also collected secondary data through the review of past empirical studies in journals, published thesis and companies’ documentaries sources which had to be acknowledged in the reference to avoid blames of plagiarism (Mugenda & Mugenda, 2003). These helped the researcher to relate is findings for purposes f making informed decisions.

Data Collection Procedure

This was the outline or plan in which the intended data were to be collected. Two categories of data, primary and secondary were collected of which primary data were collected through the administration of questionnaires and interview guide. The researcher ensured that administration of research instruments complied with ethical principles requiring keeping the identity of respondents in anonymity and putting to use gathered data to its predetermined academic purpose (Gatara,2010; Hoyle *et al.*, 2002). In particular, the researcher received authorization from all the sugar companies where he was to conduct the study and also research permit from National Commission of Science, Technology and Innovation (NACOSTI). The researcher also ensured that respondents participated freely in the study without coercion and were made free from any physical and mental injuries as their rights and dignity were respected (Hennik *et al.*, 2001). The researcher also ensured that secondary data were collected through the review of past empirical studies in journals, published thesis and companies’ documentary analysis sources which had to be acknowledged in the reference to avoid blames of plagiarism (Mugenda & Mugenda,2003).

The strength of using questionnaires in data collection was based on their convenience and cost effectiveness. The researcher will ensure that administration of research instruments complies with ethical principles requiring keeping the identity of respondents with anonymity and putting to use gathered data to its predetermined academic purpose (Gatara, 2010; Hoyle *et al.*, 2002); and that respondents participate freely in the study without coercion and are made free from any physical and mental injuries as their rights and dignity are respected (Hennik *et al.*, 2001). The researcher will also ensure that secondary data will be collected through the review of past empirical studies in

journals, published thesis and companies' documentary analysis sources which must be acknowledged and witnessed in the reference so as to avoid blames of plagiarism (Mugenda & Mugenda, 2003). The strength of using questionnaires in data collection lies in their convenience and cost effectiveness.

Pilot study

Pilot study made it possible for the researcher to pre-test the instruments to ensure that they were suitable so that they justify the claims on what they were able to measure (Saunders *et al.*, 2008). Piloting also enables the researcher to re-align the instruments to study objectives so that their outcome could answer the research questions. Mugenda and Mugenda (2005) also portend that a pilot study is a small scale preliminary study conducted in order to evaluate feasibility in an attempt to improve upon the study design prior to performance of a full scale one. The result of pilot study gave Cranach's Alpha (α) of .811 of knowledge sharing confirmed that the instruments were reliable and valid for making informed decisions and generalizations. Significantly this study will ensure reliability and validity of the instruments as follows.

Reliability of Research Instruments

According to Kerlinger (1986), reliability is the absence of errors of measurement or the accuracy of measuring instrument. To ensure reliability, the instruments were pilot tested and re-tested (test re-test method) and measure of internal consistency of the items in each sub-scales of the questionnaire were used and these permitted necessary modifications on the instruments. Test-retest reliability refers to the temporal stability of a test from one measurement session to another. The correlation between scores on the identical tests given at different times operationally defines its test-retest reliability (Oso and Onen, 2005). Using the test-retest method where questionnaires were administered to the same group at two time intervals of a period of one month, correlation between scores were computed using Pearson's Product Moment formula.

$$r = \frac{N \sum xy - (\sum x)(\sum y)}{\sqrt{\{N \sum x^2 - (\sum x)^2\} \{N \sum y^2 - (\sum y)^2\}}}$$

Where: N is number of respondents; x is test 1; y is test 2 and \sum is summation.

The correlation value which was computed between the scores at the two different times gave r-coefficient value 0.811 which according to Orodho (2008) and Field (2009) is considered high enough to authenticate the instruments' reliability and suitability.

Internal Consistence of the Items

Internal consistency concerns the reliability of the test components; For a test to be internally consistent, estimates of reliability were based on the average inter-correlations among all the single items within a test (Kumar, 2011). To ensure this, Cronbach's alpha (α) using SPSS coefficient was computed as indicated in Table 2.

Table 2 Internal Consistence: Cronbach's Alpha Results for the Questionnaire

| Scale | No. Items | Cronbach's Alpha | Cronbach's Alpha Based on Standardized Items |
|-----------------------------------|-----------|------------------|--|
| Knowledge sharing | 8 | .811 | .766 |
| Sustainability of Sugar Companies | 5 | .730 | .643 |

Source: Author (2016)

Table 3.2 shows that the consistency for the subscale in the questionnaire was adequate enough for the study. The subscale showing knowledge sharing which consisted of 8 items had the Cronbach's Alpha (α) =0.811 which according to Orodho (2008) was >0.7 is adequate measuring internal consistency.

Validity of Research instruments

This is the extent to which the instruments are expected to measure the content, probe issues and produce results they are expected to generate. To justify validity of the instruments the researcher re-examined the questionnaires and removed ambiguities so that questions were realigned to the objectives of the study. This study applied Content Validity Index (CVI) formula to measure validity of the instruments.

$$CVI = \frac{NrV}{TniQ}$$

Where; NrV - Number of questions rated as relevant.
TniQ - Total number of the items in the questionnaire.

Using Content Validity Index (CVI) formula the numbers of questions rated as relevant were divided by the total number of items in the questionnaire and this gave a CVI of .811. Since the CVI was (above) > 0.7 which is the acceptable minimal threshold adequate validity according to Hair *et al.*, (1998), it was concluded that the instruments were of adequate validity levels.

Data Processing and Analysis

This study used both quantitative and qualitative approaches involving both descriptive and inferential statistics in analyzing data. These involved the philosophical orientation that identified linkages between independent (IV) and the dependent variables (DV) which accordingly entailed interpretation of data and formulation of explanations of facts using inductive reasoning (Cooper & Schindler, 2003; Kothari, 2008). Based on coherence theory, hypotheses were only to be true to the extent in which the statement was coherent with other statements or systems of statements (Hunt, 2003).

Therefore, Pearson's Coefficient correlation technique was used in the analysis due to its ability to test the hypotheses on the nature of influence of independent variable on dependent variable (Cooper & Schindler, 2003; Kothari, 2008). The primary data that were collected were coded to ease the analysis (Mugenda & Mugenda, 2003). Finally, the intervening variables were also regressed on independent variables to determine their effects on them (Aiken & West, 1991). The regression Analysis was used due to its ability to test the nature of influence of independent variable on dependent variable (Cooper & Schindler, 2003; Kothari, 2008). The following regression model was thus developed and adopted to regress dependent variables against the independent variables, (Baron & Kenny, 1986) to determine their influence on dependent variable and hence make prediction on the future of the companies sustainability in Kenya. The following model was used to analyses the variables;

Model 1:

It is a regression of the dependent variable and the independent variables
 $P_j = a + \beta_1 X_{ij} + e$ (1)

Where: P = Organizational Sustainability j
 X = KMPs' measured by (KA_j; KS_j KApp_j and IC_j) in which
 KA_j = Knowledge acquisition j
 KS_j = Knowledge sharing j
 KApp_j = Knowledge application j
 IC_j = KMPs' implementation
 i and j represent the variables and organizations respectively
 e = error term
 β_1 = regression co-efficient.

RESULTS AND DISCUSSION

Questionnaire response rate (QRR) of 83 % was registered. This was considered high enough to guarantee reliability since it was well above 50% (Baibbe, 2002). This is presented in Table 3 below.

Table 3: Summary of Rate of Response

| Respondents | Questionnaires administered | Questionnaires returned | Return rate (%) |
|-------------|-----------------------------|-------------------------|-----------------|
| 1200 | 300 | 250 | 83.3 |

Source: Survey data (2016)

Out of 300 questionnaires administered to the employees 250 of them were returned for data analysis, which translates to 83.3% response rate. According to Oso and Onen (2011) an acceptable response rate for survey questionnaires administered personally by the researcher is achieved when the questionnaire return rate is at least 80%. A lower response rate may pose threat to content validity.

Respondents' Gender Distribution

The gender of the respondents was summarized, as in Table 4. Table 4 indicates that 250 respondents involved in the study were comprised of 230 (92%) males and 20 (8.0%) females. This implies that there is poor gender representation in the appointments since it does not reflect affirmative action rule which require at least 30% female representation in a public organization.

Table 4: Respondents by gender

| Gender | Frequency | Percentage |
|--------|-----------|------------|
| Male | 230 | 92.0 |
| Female | 20 | 8.0 |
| Total | 250 | 100.0 |

Source: Survey data (2016)

Respondents by Age

Table 5 shows the age distribution of the managerial employees of the state owned sugar companies in Kenya as represented by the ones who were sampled for the survey. It is evident from Table 4.6 that a significant proportion, 113 (45.2%), of the employees of the state owned sugar companies in Kenya are in the age group of 35-45. Only 5 (2.0%) and 75 (30.0%) were aged above 56 years and under 35 years, respectively. This implies that majority of the managerial employees are people who are still youthful are amenable to implementation of knowledge management practices that are geared towards achievement of sustainability in the sugar companies.

Table 5: Distribution of Age of the Respondents

| Age (Years) | Frequency | F (%) | Cumulative % |
|-------------|-----------|-------|--------------|
| 24-34 | 75 | 30.0 | 30.0 |
| 35-45 | 113 | 45.2 | 75.2 |
| 46-56 | 57 | 22.8 | 98.0 |
| > 56 | 5 | 2.0 | 100.0 |
| Total | 250 | 100.0 | |

Source: Survey data (2016)

Respondents Work Experience

Table 6 shows the distribution of the managerial employees work experience in terms of years. The findings of the study revealed that majority of the managerial staff of the state owned sugar companies are of adequate work experience, as reflected by a proportion 105 (42%) of the employees who took part in the survey who had 12-17 years of work experience. This means that many of the employees were capable of effectively implementing improvements and strategies achieving the companies' sustainability. Similarly, some 5 (3%) of its workforce had served for over 17 years and were able to provide the requisite technical orientation and induction to the newly (0-5 years) recruited staff constituting 63(25.2%) of the managerial staff.

Table 6: Respondents by work experience in the company

| Years | Frequency | F (%) | Cumulative % |
|-----------|-----------|-------|--------------|
| 0-5 | 63 | 25.2 | 25.2 |
| 6-11 | 75 | 30.0 | 55.2 |
| 12-17 | 105 | 42.0 | 97.2 |
| >17 years | 7 | 2.8 | 100.0 |
| Total | 250 | 100.0 | |

Source: Survey data (2016)

Respondents' Marital Status

The marital status of the managerial employees the operational state owned sugar companies who sampled for the study was shown in Figure 3.

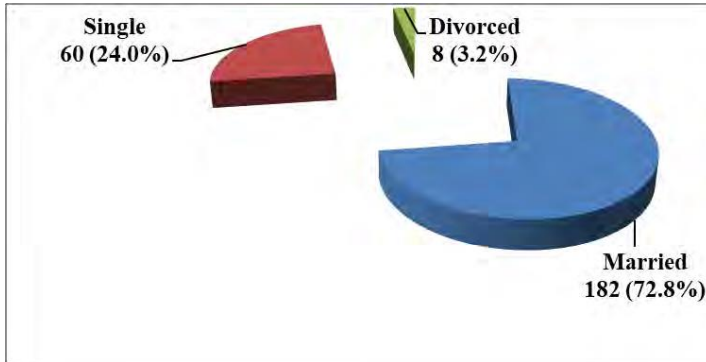


Figure 3: Respondents marital status

The data revealed that many 182 (72.8%) of the managerial employees in the sugar companies were married implying that many of the managerial staff were responsible and able to demonstrate commitment to the strategic goals of the organizations. Only 60 (24%) and 8 (3%), who were single and divorced respectively, could suffer job-family role conflicts and psychological stress.

Respondents' Academic Qualification

The summary of respondents' academic qualifications was summarized in Figure 2. This information was considered vital for this study because academic qualification is prerequisite quality of employees in regard to their capability of implementing KMPs'.

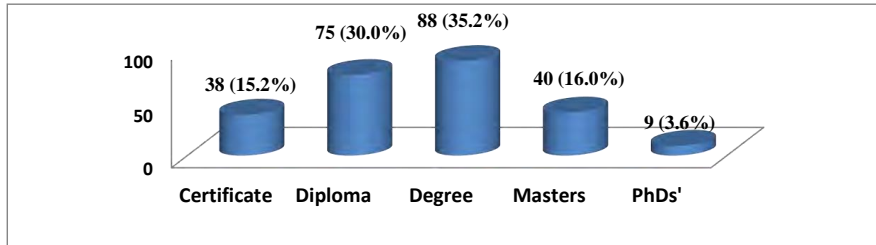


Figure 4: Distribution of respondents by qualifications academic

Figure 4 indicates that the sampled managerial employees of the state owned sugar companies were comprised of nearly a fifth 49 (19.6%) who were holders of Masters or PhDs' degrees. Those who held bachelor degrees were 88 translating to 35.2% of management team and 75 (30 %) held Diploma in academic qualifications. This finding implies that most of the employees had adequate managerial qualification for effective supervisory roles to steer the industry towards effective performance and sustainability. However, it emerged that 38 (15.2%) of the employees only had certificate academic qualifications. The implication of this finding is that the companies ought to develop skills and competencies of their junior managerial staff in sugar technology through scholarship and internship training in world leading sugar producing countries such as Brazil, South Africa and Mauritius.

Level of Sustainability of Sugar Companies in Kenya

The study investigated the level of sustainability in sugar industries in Kenya. This was necessary because it was the dependent variable. The managerial employees were presented with Five-Itemed-Likert-scaled questionnaire whose constructs were based on the indicators of sustainability. The respondents were to rate their level of agreement on the statements from strongly agree to strongly disagree. The indicators of sustainability explored included; improved

growth of the industry, product diversification, institutional infrastructure development, withstanding competition and expansion of product market. The findings are presented and discussed from Table 7.

Table 7: Sustainability of sugar companies (n=250)

| Item statement | SA | A | N | D | SD | Mean | Std.Dev. |
|---|---------------|----------------|---------------|---------------|---------------|-------------|-------------|
| There has been improved growth of this company over the years as reflected in its ability to assist the community maintain and improve their natural resources. | 37 (14.8%) | 123 (49.2%) | 50 (20.0%) | 14 (5.6%) | 26 (10.4%) | 3.24 | 0.65 |
| Our company has registered expansion of product market in the recent years. | 44 (17.6%) | 106 (42.4%) | 32(12.8 %) | 38 (15.2%) | 30 (12.0%) | 3.92 | 0.95 |
| This company has made tremendous infrastructure development. | 93 (37.2%) | 71 (28.4%) | (2.4%) | 60 (24.0%) | 20 (8.0%) | 3.41 | 1.26 |
| Product diversification signifying growth of this company. | 58 (23.2%) | 100 (40.0%) | 22 (8.8%) | 25 (10.0%) | 45 (18.0%) | 3.74 | 1.12 |
| The company has made efforts to withstand competition resulting from liberalised market | 61(24.4 %) | 89(35.6 %) | 34(13.6 %) | 41(16.4 %) | 25(10.0 %) | 2.87 | 1.08 |
| Total Average Mean | | | | | | 3.43 | 0.85 |

Key: SA-Strongly Agree, A-Agree, N-Neutral, D-Disagree and SD-Strongly Disagree
Source: Survey data (2016).

From the findings of the study, it is evident that the sugar companies in Kenya are moderately (mean=3.37; standard deviation=0.83) sustainable, with the managerial employees whose views were taken rating indicators of sustainability between 2.87 to 3.92, as shown in Table 7. It emerged that nearly two thirds 160 (64.0%) of the respondents accepted that there has been improved growth of their company over the years, which they argue was reflected in their company's ability to assist the community in maintaining and improving their natural resources.

This finding of the study concurs with DELTA (2000) who had argued that sustainability is all about guaranteeing quality life through social progress while meeting people's needs, protecting environment, ensuring prudent use of natural resources and maintaining stable economic growth and empowerment. Similarly, 150 (60.0%) of respondents affirmed that their company had registered expansion of product market in the recent years. In addition to expansion of product markets, the findings established that there has been product diversification in the sugar companies signifying growth of the companies, as indicated by 158 (63.2%) of the employees who took part in the survey. Only 40 (16.0%) of the respondent did not believe that their company had registered any significant improvement. However, it was established that many of the sugar companies have made efforts to withstand competition resulting from liberalized market. This was confirmed by 150 (60.0%) of the managerial employees who believed that many of the sugar companies have tried to counter the effects of liberation of the sugar market.

These findings are supported by Lu, Wang, Tung & Lin (2010) who believe that firms facing stiff competition ought to increase their value creation processes to attain competitive advantage. On the contrary, some respondents believed that their company had not acquired adequate level of sustainability. For example, whereas majority of the respondents believe their company enjoy product diversification which signifying growth of the company, 70 (28.0%) of the managers who took part in the survey rejected the assertion that their company enjoy product diversification. On the same note, 69 (26.4%) of the respondents said their company had not made enough efforts to withstand competition occasioned by the liberalization in the sugar industry. In fact, 68 (27.2%) respondents alluded that their company had not registered any expansion of product market in the recent years.

The influence of Knowledge Sharing on Sustainability of Sugar Companies in Kenya

The second objective of the study was to establish the influence of Knowledge sharing on sustainability of sugar companies in Kenya. This objective was addressed by use of eight-itemed Likert scaled questionnaire, which was used to explore the views of the respondents on knowledge sharing and its influence on sustainability. The views of the respondents were summarized in Table 8 showing descriptive statistics.

Table 8: Descriptive statistics: knowledge sharing on organizational sustainability (n=250)

| Item | SA | A | N | D | SD | Mean | Std. Dev |
|--------------------|-----------|------------|-----------|-----------|-----------|------|----------|
| Ks1 | 37(14.8%) | 203(81.2%) | 0 (0.0%) | 4 (1.6%) | 6 (2.4%) | 4.04 | 0.65 |
| Ks2 | 14(5.6%) | 166(66.4%) | 2(0.8%) | 68(27.2%) | 0(0.0%) | 3.50 | 0.95 |
| Ks3 | 93(37.2%) | 71(28.4%) | 6(2.4%) | 60(24.0%) | 20(8.0%) | 3.63 | 1.39 |
| Ks4 | 50(20.0%) | 160(64.0%) | 2(0.8%) | 25(10.0%) | 13(5.2%) | 3.84 | 1.02 |
| Ks5 | 41(16.4%) | 146(58.4%) | 24(9.6%) | 20(8.0%) | 19(7.6%) | 3.68 | 1.08 |
| Ks6 | 88(35.2%) | 79(31.6%) | 5(2.0%) | 55(22.0%) | 23(9.2%) | 3.62 | 1.39 |
| Ks7 | 23(9.2%) | 165(66.0%) | 16(6.4%) | 24(9.6%) | 22(8.8%) | 3.57 | 1.07 |
| Ks8 | 26(10.4%) | 22(8.8%) | 87(34.8%) | 30(12.0%) | 85(34.0%) | 2.50 | 1.32 |
| Total Average Mean | | | | | | 3.55 | 0.46 |

Key: SA-Strongly Agree, A-Agree, N-Neutral, D-Disagree and SD-Strongly Disagree

Source: Survey data (2016).

From the analysis of the respondents' views the study established that knowledge sharing as an aspect of Knowledge Management Practices has considerable influence on sustainability of sugar companies in Kenya, as was indicated by the respondents' overall agreement mean of 3.55 with a standard deviation of 0.46. Specifically, the study confirms that the companies share their endowed knowledge through its public open day education, benchmarking programs and performance appraisal of its staff.

It emerged that most companies' public open day education fora and benchmarking programs has positive influence on their sustainability. This was confirmed by a significant majority of 240 (96.0%) of the managerial employees who took part in the survey. This implies that through the company's public open education days it improves its public image with consequent expansion in product market. Furthermore, benchmarking of company's staff with foreign firms was established to have positive effect on sustainability, as indicated by 180 (72.0%) of the respondents. They believe that sharing knowledge with foreign based firms not only brings cultural re-orientation that leads to institutional growth and development but also enhances environmental control. On the same note, the findings also reveal that many 164 (65.6%) of the respondents concur that performance appraisal as well as new staff induction leads to innovation and reduced staff mobility.

The findings suggest that increased knowledge sharing through performance appraisal and efficient staff induction not only leads to innovation but also reduces staff turnover in the sugar companies. This finding is in accord with that of Saenz *et al.*, (2009) which had shown that knowledge sharing is vital in enhancing innovation and capability of firms. This confirms human capital theory which acknowledges that institutional growth is dependent on aggregate knowledge and skills in workforce which may be attributed to knowledge sharing.

Equally, these findings support De-lounge (2009) who had indicated that the route to innovation is informal knowledge sharing since its through which way the operational costs and staff turnover are reduced to help organization in increase employees' satisfaction and the firms' productivity. Bench marking as a knowledge sharing methodology is important in influencing company's sustainability. Although, many 87 (34.8%) of the respondents were undecided on the importance of bench marking, 48 (19.2%) of them observed that benchmarking with foreign firms has brought cultural re-orientation that has led to institutional development of their company.

Similarly, the findings of the study confirm that knowledge sharing has led to product diversification leading to the growth of the companies, a point supported by 187 (74.8%) of the managerial employees who took part in the study. On the same note, sharing knowledge with foreign based firms and immediate social environment was proved to enhance environmental control and to fulfil social responsibility obligations of the companies. This supports Swart & Kennie (2003) who established that 'a firm is able to perform well when they share knowledge with others and form network that makes them provide integrated quality products thus gaining large market share and profitability'; which are fundamental drivers for organizational sustainability. These findings oscillate with the views of the study participants who were interviewed by the researcher. For example, some respondents commented:

"I agree that our company's open day's education has created good public relations with other stakeholders but I am not very sure if this has really translated to direct economic benefit to the company. I do not think open days has any positive influence on sustainability in economic sense".
Respondent number 7

This implies that the respondent believed that open day in a company is only useful for creating public relations and image of building but not sustainability.

“Benchmarking is very powerful knowledge sharing practice because most of my colleagues who have been taken to foreign firms have come back with relevant skills and knowledge towards their areas of operations”.

Respondent number 5

This statement means that the respondent holds that benchmarking is very important knowledge sharing practice and that their company has taken it seriously. The respondent confirms that a number of their colleagues who have been taken for bench mark with other foreign firms have brought with them relevant skills and knowledge to the company worth the desired innovation, operational efficiency and growth of the companies.

“Last year a number of our staff in the waste management department were taken to South Africa to learn new methods of waste management, we having started seeing that their ideas are working towards enhancement of environmental control”.

Respondent number 1

It is evident from the statement that waste management improved as a result of bench marking exercises. This finding is in support to the study conducted by Huosong Xia, Kuanqu, Cui, Du & Shuquin (2003), which had pointed out that KMPs’ help in reducing time wastage required to capture correct information or make decisions, reduce production costs, improve waste management, potentially reduce research and development costs and product development cycle time. Similarly, the respondents confirm that firms have gone into innovation as a way of managing waste products Burgess by using them in manufacturing Brickets (charcoal) and chipboards, for example the tenth respondent submitted as follows:

“That Last year a number of our staff taken to South Africa to learn new methods of waste management, in Brazil and Mauritius, on return proposed the ideas that Burgess could be used to manufacture charcoal and chipboards to generate additional profits to help in both ecological and economic sustainability of the companies”.

Respondent number 10

Inferential statistics: Hypothesis Testing –Objective 2:

H₀₂: Knowledge sharing has no statistical significant influence on sustainability of sugar companies in Kenya.

To investigate whether there was any statistical significant influence of knowledge sharing on sustainability of sugar companies in Kenya, the null hypothesis was tested. This was done use of Pearson Product Moment Correlation Coefficient analysis, using the scores computed from frequency of responses. The p-value was set at .05, where the null hypothesis was rejected when the p-value was less than .05 but it was accepted when the p-value obtained was greater than 0.05 (Table 9).

Table 9: Influence of knowledge sharing and sustainability

| | Sustainability |
|-------------------------------------|----------------|
| Pearson Correlation | .292** |
| Implementation of Knowledge Sharing | .000 |
| N | 250 |

**correlation is significant at the .05 level (2-tailed)

The finding of the study shows that there was statistically significant positive correlation ($r=.292$, $n=250$, $p<.05$) between knowledge sharing and sustainability of sugar companies; and increase in implementation of knowledge sharing results into increase in sustainability of sugar companies and vice-versa. Based on the agreement the test rejects the null hypothesis; *“there is no significant influence of implementation of knowledge sharing on sustainability of sugar companies”*, and concluded that implementation of Knowledge sharing has positive influence on sustainability of sugar companies. However, it was weak.

To further illustrate this relationship, a scatter plot was generated as shown in Figure 5. The scatter plot reveals that there was some positive correlation between knowledge sharing and sustainability of sugar companies. This is because the coordinate points were scattered around tend line (TL) forming almost a visible pattern showing that the

two data sets were agreeing. However, to estimate the level of influence of implementation of knowledge sharing on sustainability, a coefficient of determination was computed by use of regression analysis as shown in Table 10.

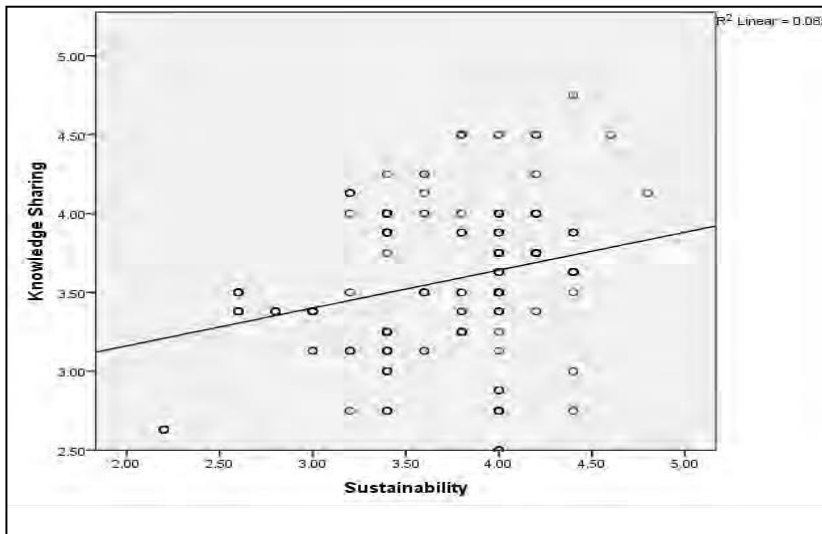


Figure 5: Influence of knowledge sharing on sustainability

Table 10: Model summary on regression analysis of influence knowledge sharing on sustainability

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-------------------|----------|-------------------|----------------------------|
| 1 | .292 ^a | .085 | .081 | .53417 |

a. Predictors: (Constant), Knowledge Sharing.

The model shows that implementation of knowledge sharing accounted for 8.5% ($R^2 = .085$) of the variation in levels of sustainability of sugar companies in Kenya. However, to determine whether knowledge sharing was a significant predictor of sustainability of sugar companies, Analysis of Variance (ANOVA) was computed as shown in Table 11. From Table 11, it is evident that knowledge sharing was a significant predictor of sustainability of sugar companies [$F(1, 248) = 23.055, p < .05$]. This further confirms that knowledge sharing significantly influence sustainability. From the results it was clear that implementation of knowledge sharing explains a considerable amount of the variance in the level of sustainability of sugar companies.

Table 11: Influence of knowledge sharing on sustainability

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|-------|------------|----------------|-----|-------------|--------|-------------------|
| 1 | Regression | 6.578 | 1 | 6.578 | 23.055 | .000 ^b |
| | Residual | 70.764 | 248 | .285 | | |
| | Total | 77.342 | 249 | | | |

a. Dependent Variable: Sustainability

b. Predictors: (Constant), Knowledge Sharing

SUMMARY

This study involved a sample $n=250$ (83.3 %) of respondents from all the operational state owned sugar companies. It examined influence of Knowledge sharing and its influence on sustainability. This study found out that managerial staffs in all the sugar companies in Kenya have good academic and experiential qualifications to guarantee knowledge sharing. The study adopted both descriptive and inferential statistics in analyzing quantitative and

qualitative data. In particular, the study used Pearson Correlation Coefficient, multiple regression and descriptive statistics in analyzing varied data. The study used null hypotheses to test the influence of KMPs' and in the analysis, 2-tailed test (ANOVA) was employed that gave 0.00 significance (p-value) at 95% confidence interval which was used to reject (failing to accept) the null hypotheses. Similarly, in establishing the influence of *Knowledge Sharing* on Sustainability, knowledge sharing measurements computed in a regression analysis table revealed that knowledge sharing indicators such as companies' open day public education, staff benchmarking and staff appraisals computed in a regression analysis Table 10 and 11 revealed a weak positive statistical significance at $r = 0.292$ and $[F(1,248) = 23.055, p < .05]$ respectively. Implying that increased Knowledge sharing activities may influence companies' performance, growth and sustainability on which premise the study rejected (failed to accept) null hypotheses that Knowledge Sharing has no correlation to sustainability of sugar companies in Kenya.

CONCLUSION

This study found out that knowledge sharing registers positive significant contribution to sustainability of sugar companies in Kenya. This study thus concludes that the sugar companies should encourage knowledge sharing culture and experience based promotion policies.

RECOMMENDATIONS

The government should create culture of knowledge sharing amongst the sugar companies by encouraging inter-company benchmarking and with other companies abroad. Sugar companies to implement strategic KMPs that permit knowledge sharing such as encouraging group discovery and innovation by building of collaborative culture. The companies' staff should be motivated to freely share their knowledge and experiences without reservations due to fear of loss of superiority and power by implementing fair promotional practices. The sugar companies should develop unique reward schemes that motivate employees towards effective knowledge sharing. The study recommends further research on institutional based factors that influence relationship between Knowledge sharing and sustainability of sugar companies in Kenya

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