KNOWLEDGE AUDIT PRACTICES AND PERFORMANCE OF PUBLIC RESEARCH INSTITUTIONS IN KENYA

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ABSTRACT

In the dynamically changing environment, knowledge is becoming the most important resource for organization performance, even surpassing other resources such as land and capital. Therefore, the ability to retain organisational knowledge is the key characteristic of sustainable improvement in organisation performance. On the contrary, publicly funded research institutions in Kenya, lose experts' knowledge from retiring employees. Knowledge management in publicly funded research institutions in Kenya seems to be a major challenge contributing to poor service delivery and gaps in work performance. Therefore, this study sought to fill the gap by establishing the influence of knowledge audit practices on performance of publicly funded research institutions in Kenya basing on the knowledge-Based View theory. The study used stratified random approaches to sample 135 respondents out of 6,799 employees in the 12 publicly funded research institutions in Kenya. Both qualitative and quantitative primary as well as secondary data was collected to achieve the study objectives. While qualitative data was analysed through thematic methods, quantitative data was analysed using both descriptive statistics (mean scores, percentages and standard deviation) and inferential statistics (Multiple Regression Analysis) through the Statistical Package for Social Sciences (SPSS) version 24.0.

The findings indicated that Knowledge audit practices have a positive significant effect on organizational performance which led to the recommendation of the need for organizations to ensure that they have an effective knowledge audit practice in place that can be used to identify, assess, and improve their knowledge assets. To do this, organizations should develop a knowledge audit framework that includes the definition of knowledge assets, and the processes and tools used to identify, assess, and improve them. They should also leverage technology to capture, store, and share knowledge assets in a secure and structured manner.

Key Words: *Knowledge Audit Practices, Performance of Public Research Institutions, Kenya*

BACKGROUND OF THE STUDY

In recent years, organizations transact in a disruptive and volatile environment caused by intense foreign competitors, rapid technological change, shorter product life-cycles, and customers increasingly demanding more customized products (Sherehiy & Karwowski, 2014). This led to the realization that there is a need for an agile workforce in the organization. Workforce agility results in quality improvement, better customer service, learning curve acceleration, and economy of scope and depth, among other things (Sohrabi, Asar & Hozoori, 2014). Ramona and Alexandra (2019) name fast organizational knowledge creation as a competency in an agile workforce. Similarly, Ahammad *et al.* (2016) recognize the ability to continually create, adapt, distribute and apply knowledge and are also very critical in turbulent environments.

Ford, Baldwin and Prasad (2018) define knowledge as, valuable, subjective and validated information that has been organised into a model (mental model); used to make sense of our world; typically originates from accumulated experience; incorporates perception, beliefs and values. According to Egeland (2017) due to changing workforce demographics (growth in the number of ageing workers in retiring while there is a reduction in the number of skilled youths to replace them), many organizations are approaching a crisis due to unprecedented ability to retain knowledge. Knowledge loss is the reduction of the capacity for effective action or decision making in a specific organisational context, according to Harvey (2012).

Organisations need to put mechanisms in place to capture, share and apply knowledge so that knowledge creation and innovation can be fostered. Knowledge within organizations resides in different sources such as knowledge bases and employees (Hislop, 2016). Organisations should strive to retain this wealth of knowledge before they lose it (Inkinen, 2016). North and Kumta (2020) posits that when discussing knowledge management, the primary concern is how to tap the brains of employees who are retiring, moving on to new jobs or otherwise leaving the organisation.

However, there is a need for knowledge audit which is the process of gathering, analyzing, and interpreting information regarding an organization's available resources and knowledge. It typically includes an assessment of the organization's knowledge structure, processes, and outcomes. It helps to identify weaknesses in the existing knowledge sources and potential areas for improvement (Dutta & Basu, 2013). Additionally, it helps to identify what kind of knowledge is missing and what new knowledge can be acquired to improve the organization's performance (Rao & Reddy, 2015). By understanding the knowledge that the organization has, as well as what it is lacking, organizations can use knowledge audit to improve their knowledge management strategies and create a more effective knowledge system (Kaklauskas, 2014).

Kenya has 12 publicly funded research institutions with mandates to research various key policy areas such as agriculture, policy, information technology, forestry, industry, marine and crime prevention. However, a Human Resource Audit conducted in Kenya at National and County levels in 2014/15, under the Capacity Assessment and Rationalization of the Public Service (CARPS) Programme revealed that public research institutions are faced with an ageing workforce who retire leaving knowledge vacuum because of the poor knowledge management practices in the organizations. Akoko (2020) also stated that most research firms lack adequate knowledge management practices necessary for retaining sophisticated, tacit knowledge that resides with employees (Given the importance of knowledge audit in this process, this study sought to establish the extent to which it has been implemented and the effect it has on the performance of publicly funded research institutions in Kenya.

STATEMENT OF THE PROBLEM

Although knowledge is becoming the most important resource for driving research institutions performance, many institutions, are continuously losing significant valuable expert knowledge hidden inside the leaving experts without being explicitly codified and retained by the former organization (Mwanzu, Wendo & Kibet, 2021; Mahajan, 2016). Research firms having invested considerably in disseminating valuable knowledge for organisation performance, suffer the immense loss of knowledge after the departure of employees owing to a shortage of appropriate Knowledge Management practices. Most research firms lack adequate knowledge management practices necessary for retaining sophisticated, tacit knowledge that resides with employees (Akoko, 2020; Mohajan, 2016). Akoko (2020) documented that up to 75% of Kenya government-employed researchers leave employment three years after joining the public research institutions. The knowledge loss makes it difficult for these publicly funded research institutions to sustain their past competitive performance levels (Ernst & Young, 2015).

Although there is a wide range of empirical studies on knowledge management (Sousa & Rocha, 2019; Santoro, 2018; Pinky, 2014), literature indicates that knowledge management in the human resource context is a relatively new area and as such the relationship between knowledge management and organisation performance is not conclusive (Egeland, 2017; Thaul, 2014). There is therefore the need to devise practices for knowledge management to deal with the potential knowledge loss and to ensure retention of knowledge of retiring experts for sustainable improvement of organisation performance. However, conceptual research gaps exist in most of the previous studies linking knowledge management to organizational performance which have largely focused on knowledge management considering systems and not human resource aspects (Cabrales & Paniagua, 2018; García-Gutiérrez et al. 2019). This study hence sought to determine the influence of knowledge audit on organizational performance while focusing on the human resource aspect of knowledge audit as opposed to systems.

OBJECTIVE OF THE STUDY

To examine the influence of knowledge audit on the performance of publicly funded research institutions in Kenya.

THEORETICAL LITERATURE REVIEW

The study was anchored on the Knowledge-Based View of the firm which emerged as an extension of the Resource-Based View of the firm proposing that heterogeneous knowledge bases among firms and the ability to create and apply knowledge are the main determinants of performance difference (Decarolis & Deeds, 1999). Pereira and Bamel (2021)

argue that knowledge is an established theoretical construct that has been proposed as a heterogeneous resource that firms' value in different manifestations as a basis of competitive advantage.

An organization's superior performance depends on its ability to defend, capitalize and apply the knowledge that it creates in combination with other resources and competences of the firm such as contextual factors and agreement with its strategic direction (Schutz, Kasser, Blome & Foerstl, 2020). A similar view is shared by Hislop (2016) who argues that firms exist because they are better at integrating and applying specialized knowledge than markets do. The current study looks at acquisition, sharing knowledge, knowledge transfer and knowledge access as components of Knowledge Management practices and how it can be applied within the organizational context. Knowledge is considered as a strategic resource that does not depreciate in the way traditional economic factors of production do and can generate increasing returns. Knowledge can be distinguished from traditional factors of production (land, labour and entrepreneurship) in that it is governed by the law of increasing returns (Zhang, Jiang & Zhang, 2019).

The proponents of KBV such as Grant (1996) and Spender (1996) acknowledge that since knowledge-based resources are difficult to imitate and socially complex, they are among the core capabilities determining sustained competitive advantage and superior corporate performance of firms. According to KBV, knowledge is embedded and carried through multiple entities, including organisational culture and identity, policies, routines, documents, systems, and employees. KBV emphasizes on three components to knowledge management systems that influence firm performance. These are the firm's; ability to produce new knowledge, ability to build on that knowledge, and effectiveness in capturing a high proportion of the subsequent spin-offs (Nikolaou, 2019). The appropriate knowledge is accessed through knowledge sharing capabilities. This provides strong evidence that knowledge generation is a suitable indicator of organisation performance.
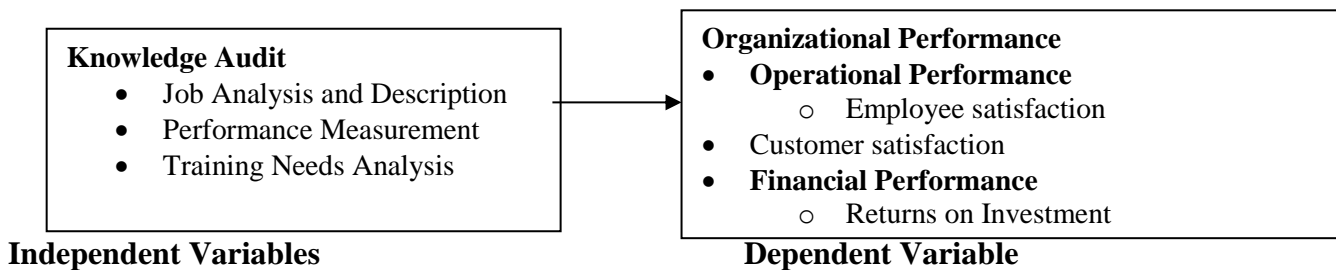
CONCEPTUAL FRAMEWORK

Knowledge Audit	Organizational Performance

• Job Analysis and Description
• Performance Measurement
• Training Needs Analysis
	• **Operational Performance**
	  ○ Employee satisfaction
	• Customer satisfaction
	• **Financial Performance**
	  ○ Returns on Investment

Independent Variables   **Dependent Variable**

Figure 1: Conceptual Framework

EMPIRICAL LITERATURE REVIEW

Knowledge audit can be used to identify areas of expertise and the gaps in knowledge, as well as to assess the effectiveness of knowledge management processes. It is the process of assessing the value of knowledge assets in an organization and determining how to best leverage the information for improved performance. It is a powerful tool for helping firms assess their current knowledge resources and identify areas for improvement (Haupt, Zurmehly & Schaupp, 2015). The first step in a knowledge audit is to determine what types of knowledge assets the firm has, such as intellectual property, customer data, and employee knowledge. Next, the firm assesses the current utilization of these assets and develops strategies for managing them effectively.

Finally, the firm evaluates the performance of its knowledge assets and the resulting organizational performance (Shahmoradi et al. 2015; Ammar, 2020). The results of a knowledge audit can reveal areas of opportunity for improvement and inform decisions about how to allocate resources most effectively. For example, a knowledge audit could reveal that a firm has a wealth of customer data that could be used to better understand customer needs and preferences, leading to improved customer service and satisfaction. Additionally, a knowledge audit could reveal that the firm has underutilized intellectual property, indicating opportunities to create and market new products or services (Roy, Roy & Bouchard, 2016).

The benefits of knowledge audit extend beyond improved organizational performance. By assessing the value of knowledge assets, firms can identify areas of risk and develop strategies for mitigating these risks (Geisler & Wickramasinghe, 2015). Additionally, a knowledge audit can help firms identify areas of duplication and inefficiency, helping to reduce waste and better utilize available resources. Overall, knowledge audit practices are a valuable tool for helping firms to improve their performance and ensure long-term success (Haupt, Zurmehly & Schaupp, 2015). To conduct a knowledge audit, organizations often employ methods such as interviews, surveys, and database searches. Interviews are useful for gathering information about current knowledge resources, research needs, and the organization's ability to acquire new knowledge (Alhawari & Al-Jarrah, 2012). Surveys focus on measuring the organization's actual knowledge levels and understanding its knowledge strengths and weaknesses (Kansou et al. 2022). Database searches are used to assess the organization's existing knowledge, as well as its ability to access new knowledge. The results of these methods can help organizations identify areas of improvement and allow them to develop strategies to acquire new knowledge (Rao & Reddy, 2015). Some of the major practices under knowledge audit are identification of knowledge assets, knowledge mapping and knowledge gap identification.

A study by Al-Ali (2013) investigated the relationship between knowledge audit practices and the performance of firms in the Jordanian manufacturing sector and found that knowledge audit practices had a positive influence on the firms' organizational performance, with firms that routinely audited their knowledge resources performing better than those that did not in terms of competitive advantage. Another study by Ercan Aktas and Zekiye Tuncer (2012) which aimed to examine the effect of knowledge audit on firm performance focusing on the analysis of the current status of knowledge audit in the organization revealed that knowledge audit has a positive influence on firm performance, with increases in market share, product and service quality, customer and supplier relationships, financial results, and organizational learning.

In their study, Obeidat et al (2019), investigated knowledge audit processes in large organizations and established that knowledge audit processes require a high degree of coordination, as well as strong adequate resources and IT capabilities. Furthermore, the knowledge audit process must be tailored to the specific organization, considering its culture, objectives, and processes. Rajan (2019) focused on the concept and practices of knowledge audit in the Indian context and indicated that knowledge audit is a valuable tool for Indian organizations, with potential benefits including the alignment of organizational objectives, the support of the organization's decision-making process, and the promotion of innovation. Additionally, the results suggested that knowledge audit should be tailored to the specific context of each organization, focusing on the individuals, tasks, and processes that are most relevant.

RESEARCH METHODOLOGY

This study adopted a survey research design. It targeted twelve (12) publicly funded research institutes in Kenya classified as either Medical-Biological Sciences Research, Agriculture and Natural Resource Management or Social, economic and industrial sciences Research. A total of 6,799 research personnel where stratified random sampling technique was adopted to sample 135 respondents. The data used in the study was collected using three key methods namely, document analysis, use of questionnaires and interviews (Creswell, 2014). Therefore, since both qualitative and quantitative data was used, the data analysis methods were both qualitative and quantitative. The qualitative data was transcribed and then analyzed through thematic methods. Quantitative data from structured questionnaires on the other hand was analyzed using both descriptive statistics (mean scores and standard deviation) and inferential statistics (Correlation and Regression Analysis). A regression model was used in determination of coefficients of the predictor variable in relation to the dependent variable (organizational performance) as shown.

$$Y = \beta_0 + \beta_1 X_1 + \varepsilon$$

Where Y = Organizational Performance, X_1 = Knowledge Audit, β_0 is the constant term and ε = error term.

RESEARCH FINDINGS AND DISCUSSION

The researcher administered a total of 135 questionnaires to respondents from research institutions focusing on medical-biological sciences research, research institutes focusing on particular crops and natural resources as well as research in the social, economic and industrial sciences. Out of the number, a total of 102 (76%) were correctly responded to and returned. This response rate was adequate since according to Babin (2010), a response rate of 50% is acceptable for analyzing and publishing while 60% is good and above 70% is considered very good.

Descriptive Findings of Knowledge Audit

The respondents rated their level of agreement with statements on knowledge transferring on a scale of 1 to 5 as shown in Table 1. The results indicated that research organizations publicly funded in Kenya, review job requirements to identify knowledge gaps for filling to a high extent (M = 3.63; SD = 1.27), analyze employment trends to identify knowledge gaps for filling to a high extent (M = 3.59; SD = 1.39), compare job responsibilities against requirements to identify knowledge gaps for filling to a high extent (M = 3.57; SD = 1.28), identify new and necessary job skills for filling (M = 3.94; SD = 1.23) and document job performance to identify knowledge gaps for filling to a high extent (M = 3.65 ; SD = 1.47). This implies that as part of its knowledge audit efforts, the organizations adopt job analysis and description to a high extent.

It was also agreed that the research organizations develop performance metrics to align knowledge gaps for filling (M = 3.70; SD = 1.26), set performance goals aimed at identifying knowledge gaps for filling (M = 3.94; SD = 0.77), reward performance so as to encourage performance and development of new skills (M = 3.81 ; SD = 0.81), perform root cause analysis to identify knowledge gaps for filling (M = 5.00; SD = 0.00) and also identify areas of employee improvement (M = 4.79 ; SD = 0.41). In addition, it was indicated that the organizations have monitor employee satisfaction (M = 3.80; SD = 0.76) and also monitor progress towards goals (M = 3.80; SD = 0.76). This implies that as part of its knowledge audit efforts, the organizations adopt performance measurement to a high extent.

Further analysis indicated that the organizations conduct skill gap analysis aimed at establishing areas of improvement in knowledge (M = 3.96 ; SD = 0.72), monitors and measures training results (M = 4.25 ; SD = 0.70) as well as continuously reviewing their training needs assessment models (M = 4.19 ; SD = 0.075) but least tailor their training programs based on the knowledge gaps that need filling as part of its knowledge audit practices (M = 2.94 ; SD = 1.47). This implies that as part of its knowledge audit efforts, the organizations adopt training needs analysis to a high extent. Basically, public research institutions which are funded by the government need to employ various knowledge audit practices as it helps organizations to identify areas of strength and weakness within their knowledge resources, and highlights areas of improvement. By understanding where the organization stands in terms of its knowledge resources, it can then devise strategies to enhance organizational performance.

The knowledge audit process also helps organizations to identify and capitalize on their existing knowledge assets. For instance, the audit can identify gaps in the organization's knowledge resources, which can then be filled by acquiring new knowledge or by leveraging existing resources. The audit can also help organizations to identify areas in which their knowledge resources are not being fully utilized, which can then be addressed to improve organizational performance. Knowledge audit also helps organizations to prioritize their learning and development initiatives to ensure that resources are being used in the most effective way possible. Additionally, the audit can enable organizations to benchmark their knowledge resources against those of their competitors, allowing them to make informed decisions about how to improve their own performance.

Given its importance, it can be argued that the fact that the publicly funded research institutions in Kenya have adopted knowledge audit practices to a high extent as indicated by the mean, then they are headed in the right direction. Continuous implementation of the practices is likely to enhance their productivity. The findings are consistent with that of Iyer, Sharp and Brush (2017) who suggested that greater emphasis should be placed on human resource practices to enhance knowledge audit through practices such as job analysis, performance measurement and training needs analysis.

Table 1: Descriptive Findings of Knowledge Audit

Statement	Mean	SD
As part of its knowledge audit efforts, the organization continuously:		
Job Analysis and Description		
Reviews job requirements to identify knowledge gaps for filling	3.63	1.27
Analyses employment trends to identify knowledge gaps for filling	3.59	1.39
Compares job responsibilities against requirements to identify knowledge gaps for filling	3.57	1.28
Identifies new and necessary job skills for filling	3.94	1.23
Documents job performance to identify knowledge gaps for filling	3.65	1.47
Performance Measurement		
Develops performance metrics to align knowledge gaps for filling	3.70	1.26
Sets performance goals aimed at identifying knowledge gaps for filling	3.94	0.77
Rewards performance so as to encourage performance and development of new skills	3.81	0.81
Performs root cause analysis to identify knowledge gaps for filling	5.00	0.00

Statement	Mean	SD
As part of its knowledge audit efforts, the organization continuously:		
Job Analysis and Description		
Identifies areas of employee improvement	4.79	0.41
Monitors employee satisfaction	3.80	0.76
Monitors progress towards goals	3.80	0.76
Training Needs Analysis		
Conducts skill gap analysis aimed at establishing areas of improvement in knowledge	3.96	0.72
Monitors and measures training results	4.25	0.70
Continuously reviews its training needs assessment models	4.19	0.75
The organization continuously tailors its training programs based on the knowledge gaps that need filling as part of its knowledge audit practices	2.94	1.47
Average	**3.91**	**0.94**

Key: Very Low Extent = 1 – 1.4: Low Extent = 1.5 – 2.4: Moderate Extent = 2.5 – 3.4: High Extent = 3.5 – 4.4: Very High Extent = 4.5 – 5.4, M = Mean, SD = Standard Deviation

The study also sought to obtain in-depth analysis of the knowledge audit practices in the organizations through KII questions. In the KII, the respondents were asked to discuss the effectiveness of knowledge audit as a knowledge management practice in their organization. The summarized responses presented in Table 2 indicate that the respondents stated that knowledge audit improved employee satisfaction: Retaining knowledge within an organization can lead to increased employee satisfaction, as individuals feel their expertise is valued and they are able to share their knowledge with others. It also increases productivity: When knowledge is retained and shared, it helps to reduce the time spent on completing tasks and helps employees to work quickly and efficiently.

The respondents also argued that knowledge audit decreases training costs: When knowledge is retained, it can be used to train new employees, reducing the need for costly external training and orientation programs. It also improves decision-making: Retaining knowledge enables employees to make decisions more quickly and accurately, as they are able to access the relevant information when needed. Lastly, it enhances innovation: Retaining knowledge within an organization can lead to greater innovation, as employees are able to draw on the experience and expertise of their colleagues to develop new ideas and solutions. This confirms the descriptive findings described above.

Table 2: Summary of Key Themes of Knowledge Audit Practices

Question	Summary of Main Themes
How effective do you think knowledge audit is in enhancing knowledge management?	Majority of the respondents indicated that knowledge audit improves employee satisfaction, decreases training costs, enhances innovation in their organizations.

Organizational Performance

The organizational performance of the publicly funded research firms in terms of non-financial measures (customer satisfaction index and employee satisfaction index both out of 10) and returns on investment was established through document analysis guide. The results in Figure 2 indicate that on a scale of 1 to 10, the research organizations averaged an index of 7.31 in the year 2016 which then increased steadily to 7.35 in the years 2017 and 2018 before a further increase to 7.67 in the year 2020. This implied an improvement in the ranking to demonstrate that the customers rated the services from publicly funded research institutions as better. Generally, these values are above 70% to imply a good ranking from the customers on their satisfaction rate.
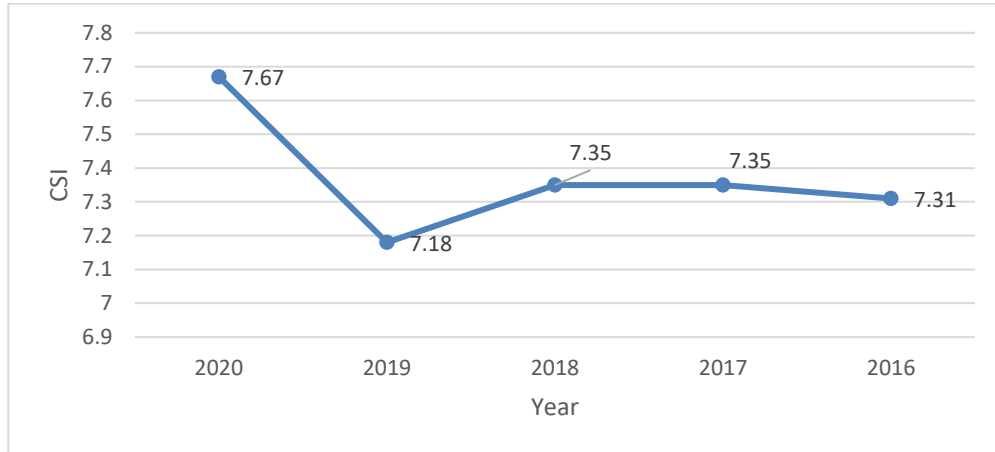

Figure 2: Average Customer Satisfaction Index Trends (2016 – 2020)

The employee satisfaction index was also established and presented in Figure 3 as trends. The results show that on a scale of 1 to 10, the research organizations averaged an index of 7.82 in the year 2016 which decreased to 7.65 in the year 2019 perhaps due to the transition to a new government. However, the index increased to and improved to 8.12 in the year 2020. These values are above 70% to imply a good ranking from the employees.
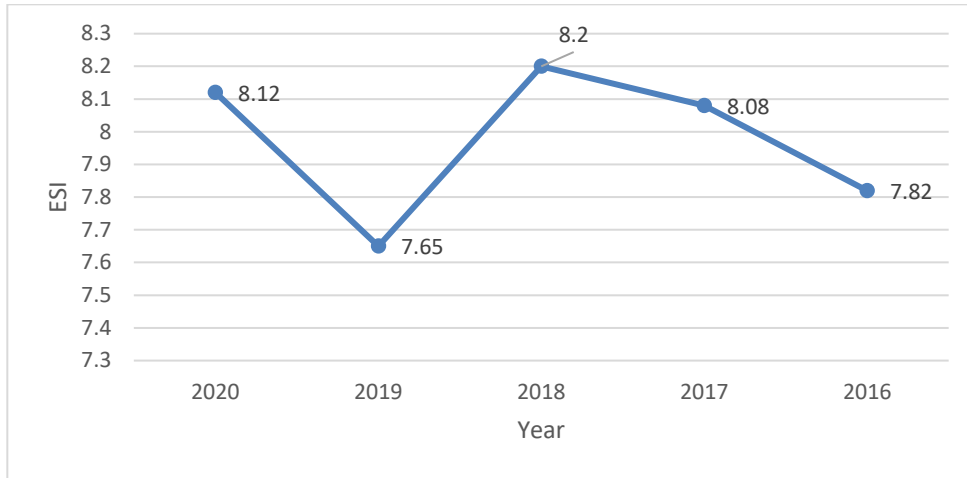
Figure 3: Average Employee satisfaction Index Trends (2016 – 2020)

Figure 4 also shows the percentage number of organizations falling in various ranges of ROI. It was established that majority of the organizations had a ROI averaging between 5% and 9% for the last 5 years which is a good positive ratio as recommended by Chalutz Ben-Gal (2019). Those below the low performance zone of less than 5% were a third the number of firms.
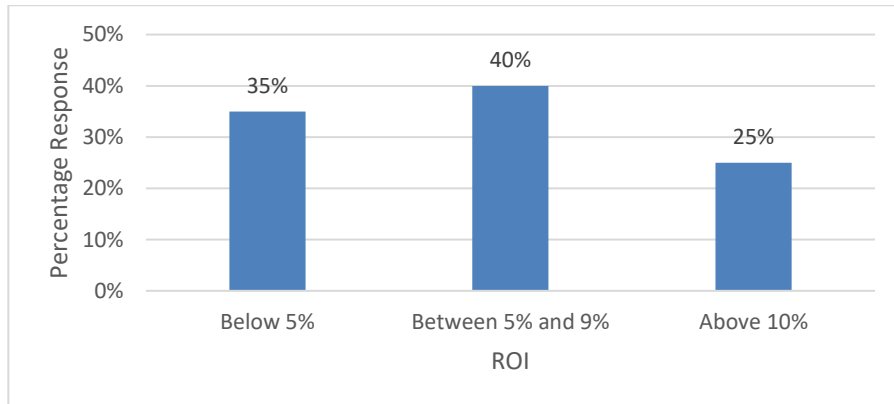

Figure 4: Average ROI

Regression Analysis of Knowledge Audit and Organizational Performance

To test the influence of knowledge audit on overall organizational performance of publicly funded research firms in Kenya, the study adopted a multiple regression model and the findings are indicated in Table 2.

Table 2: Regression Analysis of Knowledge Audit and Overall Performance

Model Summary					
R	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**		
.974	0.948	0.946	0.54514		
ANOVA					
	Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
Regression	531.508	3	177.169	596.169	.000
Residual	29.124	98	0.297		
Total	560.632	101			
	Unstandardized Coefficients		**Standardized Coefficients**		
	B	**Std. Error**	**Beta**	**t**	**Sig.**
(Constant)	-1.653	0.851		-1.942	0.055
Job analysis and description	1.734	0.064	0.881	27.119	0.000
Performance Measurement	0.343	0.087	0.13	3.941	0.000
Training Needs Assessment	0.291	0.18	0.038	1.616	0.109
Dependent Variable: Overall organizational Performance					
Predictors: (Constant), job analysis and description, performance measurement and training needs analysis					

The regression results in Table 2 demonstrate that indicated that knowledge audit indicators (job analysis and description, performance measurement and training needs analysis) account for up to 94.8% of the variation in performance of publicly funded research institutions in Kenya (R-square = 0.948). This shows that the three-knowledge audit indicators have a significant contribution to performance of publicly funded research institutions in Kenya. ANOVA was used to establish the model fitness of the regression model linking knowledge audit (job analysis and description, performance measurement and training needs analysis) to performance of publicly funded research institutions in Kenya. The results showed that the regression model was significant and a good fit (Sig < 0.05). This therefore implies that the model was a good predictor of performance based on knowledge audit indicators (job analysis and description, performance measurement and training needs analysis).

The model coefficients indicated that all the three knowledge audit indicators (job analysis and description, performance measurement and training needs analysis) positively influence employee satisfaction performance of publicly funded research institutions in Kenya (β = 1.734; 0.343; 0.292) respectively. However, only job analysis and description as well as performance measurement had a significant influence on performance (P-value < 0.05). This implies that an improvement in these variables was associated with a significant improvement in performance of the organizations. Knowledge Audit helps to identify the resources available to an organization and how they are used, as well as any gaps that exist. It can also be used to assess the use of technology in knowledge management and to determine how well the knowledge is being shared and utilized. By conducting a knowledge audit, organizations can identify areas where they can improve their knowledge management practices and enhance the performance of their organization.

By improving the effectiveness of their knowledge management practices, organizations can achieve a number of benefits. These benefits include improved efficiency, improved collaboration, and better decision-making. Improved efficiency can lead to a reduction in operational costs, while improving collaboration can lead to increased innovation and creativity. Additionally, better decision-making can lead to better outcomes for the organization. Ultimately, Knowledge Audits can help organizations to maximize the benefits of their knowledge management practices and improve their overall performance.

CONCLUSIONS

The study concludes that adopting knowledge audit practices such as job analysis and description, performance measurement and training needs analysis is associated with helping organizations to identify areas of improvement and to develop strategies to ensure that knowledge is effectively managed and utilized. It then leads to improved efficiency, improved collaboration, and better decision-making.

RECOMMENDATIONS

Based on the findings, the study recommends the management of the public research firms to invest in creating a knowledge sharing culture: Encourage employees to share their knowledge and ideas with each other. Allow employees to mentor each other and share their experiences and lessons learned. The management should also establish collaborative networks: Encourage employees to form collaborative networks to share information and ideas.

AUTHOR CONTRIBUTIONS

Under the supervision of both Prof. Maurice Sakwa and Dr. Alice Simiyu, university lecturers in the school of Business at JKUAT university, Kenya, Viona Muleke, wrote the concept paper, proposal and thesis as well as the article. Under their guidance, she collected and analyzed data as reflected in the work. Therefore, any grammatical errors are solely hers.

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CONFLICT OF INTEREST DECLARATION

Viona Muleke declares that there are no conflicts of interest regarding the publication of this Manuscript. In addition, the ethical issues; including plagiarism, informed consent, misconduct, data fabrication and (or) falsification, double publication and (or) submission, redundancy has been completely observed by the authors.

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