

Influence Of Knowledge Recovery Strategy On Performance Of Public Research Institutions In Kenya

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Abstract

Knowledge can be recovered and retained in an organisation through various strategies that may involve education, training, establishing communities of practice and professional networks, documenting the processes and use of advanced software to capture work processes. Knowledge recovery initiatives should be introduced and implemented to improve knowledge sharing and transfer in publicly funded research institutions in Kenya. The study sought to interrogate the influence of the knowledge recovery strategies adopted by research firms publicly funded in Kenya as well as its influence on performance of publicly funded research institutions in Kenya. The study used a survey design with a target population of 6,799 employees in the 12 publicly funded research institutions in Kenya. The respondents were the researchers, heads of knowledge management and HR managers in the publicly funded research institutions in Kenya. The study obtained a sample size of 135 respondents and the respondents were selected using stratified random sampling technique. Data was collected from primary sources using a structured questionnaire and analyzed through descriptive statistics (mean scores, percentages and standard deviation) and inferential statistics (correlation and regression analysis). The findings indicated that knowledge recovery improves organizational performance in a significant manner. It was recommended that the publicly funded research institutions in Kenya need to review its knowledge recovery initiatives approach. These institutions should implement effective knowledge recovery initiatives to capture and retain all the knowledge possessed by retiring employees. The retained information should be documented.

Key Words: Knowledge Recovery Strategies, Public Research Institutions, Performance, Kenya

Date of Submission: 16-11-2020

Date of Acceptance: 02-12-2020

I. Introduction

Organisations face the risk of losing knowledge in a world of layoffs, retirements, staff turnover, mergers and acquisitions, which could affect their sustained competitive advantage. This situation may be worse in public research institutions in developing countries because of high staff turnover and most of them move to the private sector in search for better-paying jobs (Martins & Meyer, 2012). The theoretical findings in the study by Mohajan, (2016) show that tacit knowledge strategy is appropriate for the organizations and that sharing and transferring of tacit knowledge is essential for the local and global economic development. Due to this agile labour force which leads to loss of important knowledge, organizations should strive to retain this wealth of knowledge before they lose it (Hislop, 2013). Peterson (2012) posits that when discussing knowledge recovery and retention, the primary concern is how to tap the brains of employees who are retiring, moving on to new jobs or otherwise leaving the organisation. Knowledge is lost through retirement and movement of people, but this can be overcome by documenting previous processes and procedures, forming communities of practice and harvesting knowledge.

To recover and retain important information and knowledge has remained the main challenge and strategic goal for organisations (Chigada & Ngulube, 2015; Omutayo, 2015). Knowledge can be recovered and retained in an organisation through various strategies that may involve education, training, establishing communities of practice and professional networks, documenting the processes and use of advanced software to capture work processes (Chigada & Ngulube, 2015). Most of the knowledge in organisations exists as tacit knowledge gained and built-up through years of experience (Peterson, 2012). This knowledge must be captured and stored in the organisations' repositories, such as databases, records, and software. A major issue which normally arises when helpful staff prepares to leave an organization is how to preserve the knowledge amassed by these employees. In general, the growth in the volume of information available and rapid technological progress has forced most people into a state of information overload. This has left organizations scrambling to create systems for acquiring, retaining, and accessing an overwhelming volume of data. Added to this is the demand for highly specialized knowledge that is often difficult to find and retain (Chigada & Ngulube, 2015).

Accordingly, organizational leaders are required to understand and develop knowledge recovery initiatives for increasing knowledge retention (Kim, Lee & Kim, 2013). Implementation of these knowledge

recovery initiatives may considerably produce substantial benefits throughout the government through improved organization performance (Connell, 2013). However, these leaders are struggling with the identification of the appropriate knowledge recovery initiatives for retaining the human capital of their exiting employees to less-experienced young generations (Pollack, 2012). In Kenya, some critical cadres in the publicly funded research institutions in Kenya have been experiencing high staff turnover as the staff leave the Civil Service to take up employment both within and outside the Country. This causes a shortage of staff and compromises service delivery (Wario, 2012). 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 the Service is faced with an ageing workforce. This is where 31% of staff at both the National and County Governments level are aged between 50 and 59 years, while 30% are in the age bracket of 40 to 49 years. Republic of Kenya Human resource planning and Succession management strategy for the public service (February 2017).

Oyefolahan (2012) acknowledges that Knowledge sharing is scarce in public research institutions and staff members find it difficult to share their knowledge with their colleagues. Knowledge recovery initiatives should be introduced and implemented to improve knowledge sharing and transfer in publicly funded research institutions in Kenya. He further states the extent to which users are willing to share using the system has been identified as one of the key factors in determining system effectiveness. Omotayo, (2015) contends that organisational performance will be affected due to loss of expertise, on-job knowledge, client intelligence, internal and external networks and social and networking skills.

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 (Peterson, 2012; Mahajan, 2016). RITs 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 retention strategies. Most RITs lack adequate knowledge retention strategies necessary for retaining sophisticated, tacit knowledge that resides with employees (Durst & Wilhelm, 2012; Mohajan, 2016).

Past studies have shown; (Kimani, 2012) 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 array of empirical studies on KM, the literature indicates that retaining knowledge from older experts in organisations is a relatively new area and as such it is not clear the relationship between knowledge retention and organisation performance (Egeland, 2017). There is therefore the need to devise strategies for knowledge retention to deal with the potential knowledge loss and to ensure retention of knowledge of retiring experts for sustainable improvement of organisation performance. It is against this backdrop that the present study sought to lock the gap by establishing the knowledge recovery strategies for retaining valuable organizational knowledge held by retiring experts.

CONCEPTUAL FRAMEWORK

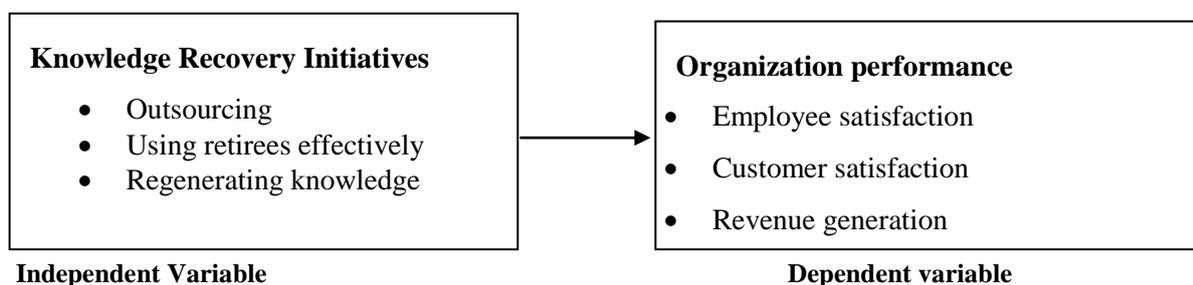


Figure 1: Conceptual framework

Knowledge Recovery Initiatives

The effectiveness of knowledge retention in improving organisation performance is determined by the knowledge recovery initiatives where knowledge manager within the organization seek to establishing standards and administering the appropriate tools and systems for managing knowledge (Pollack, 2012). In the public sector today more and more organisations are outsourcing a large percentage of their services (Swar Moon, Oh & Rhee, 2010), where organisations have begun to forge a shared understanding where the transfer of knowledge now becomes possible (Rai & Tang, 2010). Such intimate relationships provide a fertile platform for knowledge transfer and learning, creating opportunities for organisations to access new knowledge, skills and competencies of the vendors (Valorinta, 2010).

In a research conducted by Jostad and Nowocin (2012) the following knowledge recovery initiatives will be mooted: use of retirees effectively; outsourcing; and regenerating knowledge.

Programmes for Effectively Utilising Retirees

The easiest knowledge recovery tactic to employ when expertise leaves is hiring retirees back as contractors or consultants (DeLong 2004). Retirees have skills needed and know the culture and organisational history. They also have extensive social networks necessary to get their jobs done, even when they are different from those they left. Given the looming shortage of specialised technical and engineering talent in many sectors including the research institutions, bringing retirees back as contractors is going to be a widely used short-term tactic for knowledge recovery in the years ahead. DeLong (2004) continues to say that one of the most consistent findings in his research was the extent to which organisations in some sectors, like chemicals and federal government, have already become dependent on bringing recent retirees back to work on a part-time basis. Using retirees as contractors, however, is a double-edged sword. It helps retain access to irreplaceable expertise, but it can also create a false sense of security that the organisation still controls some specific knowledge.

Outsourcing Lost Capabilities

Outsourcing is the act of transferring some of the organisations recurring internal activities and decision rights to outside providers, as set forth in the contract (Sancheti 2007:12). A study conducted by Sancheti (2007), in relation to outsourcing in India, it used a qualitative research design and data was collected through interviews and questionnaires. The study established that outsourcing concept is generally followed by reputed organisations and well educated individuals in India. Outsourcing industry in India thrives due to offshore projects coming from mainly USA and UK with bulk of its transactions originating from these countries.

In some situations, retaining knowledge adequate to sustain acceptable performance levels is going to prove unrealistic (DeLong 2004). In those cases, looking at new business models may be the only choice executives have. According to DeLong (2004) outsourcing non-core capabilities has been a trend in sections of both the private and public sectors for years. He continues to say that some organisations are going to face another round of outsourcing decisions when it becomes apparent that the loss of substantial expertise in specialised areas is too difficult and costly to replace or sustain.

Regenerating Lost Knowledge

DeLong (2004) argues that management is going to recognise that it has simply lost a critical capacity that it may not recover by rehiring former employees or through outsourcing. He continues to say that sometimes this knowledge loss will occur when top management makes conscious decisions to downsize or relocate offices and, as a result, employees with unique knowledge leave the organisation. More often, knowledge will be irretrievably lost either through poor documentation and storage practices or through the retirement of highly skilled experts who fail to pass on their know-how. Regenerating essential knowledge that organisations can no longer access is a costly and frustrating effort, but in some cases it must be done (DeLong 2004).

DeLong (2004) contends that ultimately, every organisation's approach to knowledge retention will be unique. But, by necessity, it will include some combination of the elements described in his framework for knowledge retention that he developed for the Los Angeles Bureau of Sanitation (Abkian, et al. 2007). He warns that no matter where an organisation starts, it needs to be aware of the dangers of attacking knowledge retention with solutions that are too narrow. The most mistakes that many organisations do, he says, include implementing technology applications alone, thinking that they will solve problems. Effecting long-term knowledge retention in a serious way requires a much more holistic approach.

II. Research Methodology

This study adopted a survey research design. The target population of this study consisted of all the twelve (12) publicly funded research institutes in Kenya whose core mandate is to conduct policy research. The study targeted the Human Resource departments heads, knowledge management managers and researchers who had been in their institutions for two or more years to give information needed for the study. Table 1 indicates a summary of the target population.

Table 1 Target Population

Cluster	Research Institutes	Population
Medical-Biological Sciences Research	2	2679
Agriculture and Natural Resource Management	6	2942
Social, economic and industrial sciences Research	4	1178

Total	12	6799
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To determine the sample size, stratified random sampling technique was adopted. This is where the respondents were stratified based on the type of research institutes. A formula recommended by Kothari (2006), Cooper and Schindler (2006) and Zikmund *et al.* (2010) was used to determine the sample size of 135.

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

Where :

n = the desired sample size for target population greater than 10,000 ; p = the proportion in the target population estimated to have characteristics being measured. This is placed at 90% (0.9) ; q = (1-p) that is, the proportion in the target population estimated not to have characteristics being measured, (1-0.9) = 0.1 ; pq = measure of sample dispersion ; d = standard error of the proportion. For this study, it is placed at 0.05 ; z = 1.96 that is 95% confidence level for estimating the interval within which to expect population proportion. To collect data, structured questionnaires were adopted. The data collected was analyzed through both descriptive statistics (mean scores and standard deviation) and inferential statistics (Correlation and Regression Analysis). The following univariate regression model was used in determination of coefficients of the predictor variable in relation to the dependent variable.

$$Y = \beta_0 + \beta_1 X_1 + \varepsilon \dots\dots\dots (i)$$

Where:

Y = Organizational Performance ; X₁ = Knowledge Recovery Strategy ; ε = Error term

In the model, β₀ = the constant term while the coefficient β_i = 1...4 was used to measure the sensitivity of the dependent variable (Y) to unit change in the predictor variable while ε is the error term which captures the unexplained variations in the model. Results were presented in form of tables, charts and figures.

III. Research Findings And Discussion

The researcher administered a total of 135 questionnaires to respondents from Research institutes focusing on medical-biological sciences research, Research institutes focusing on particular crops and natural resources and Research institutes focusing on 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. This is also consistent with the argument by Williams (2011) who argued that higher responses above 50% are suitable for survey studies. The high response rate is attributed to the data collection procedures that were used in the study. The procedures included use of competent research assistants, pre-notification of respondents and voluntary participation by respondents; drop and pick of questionnaires to allow for ample time to fill; assurance of confidentiality and anonymity and follow up calls to clarify queries from the respondents.

Respondent’s Demographic Characteristics

This section contains study findings on demographic characteristics comprising of organization category, respondent’s level in the organization and work experience. According to Smith (2015), establishing the demographic characteristics of the respondents does not affect the relationship between the variables of the study. It however describes the population under investigation. The results presented in Table 2 indicates that 46% of the respondents came from research institutes focusing on medical-biological sciences research, 42% came from research institutes focusing on particular crops and natural resources while 12% came from research institutes focusing on research in the social, economic and industrial sciences. This demonstrates diversity and less sampling bias.

It was also indicated that the respondents came from varied employment levels ranging from senior management (26%), mid (28%), lower (12%) and majority (34%) were not in management positions. In regard to work experience, the results showed that majority of the respondents, 25%, had a work experience between 16 and 25 years, 30% had a work experience between 11 and 15 years and 41% had a work experience above 16 years. This implies high institutional knowhow in regard to knowledge retention strategies. The respondents had been in the organizations long enough to give information being sort hence high reliability.

Table 2 Demographic Characteristics

Demographic Factor	Category	Percentage
Organization Type	Research institutes focusing on medical-biological sciences research	42%
	Research institutes focusing on particular crops and natural resources	46%
	Research institutes focusing on research in the social, economic and industrial sciences	12%

Level of Employment	Non-management	34%
	Lower management	12%
	Mid-management	28%
	Senior management	26%
Work Experience	3-5 years	14%
	6-10 years	15%
	11-15 years	30%
	16-20 years	25%
	21 years or more	16%

Descriptive Findings of Knowledge Recovery Strategies

The respondents rated their level of agreement with statements on knowledge recovery strategies on a scale of 1 to 5 as shown in Table 3. The results indicated an agreement that research organizations publicly funded in Kenya, require exit interviews for retiring employees and document the results (M = 4.6 ; SD = 0.78), hire former employee to work as a consultant/contractor (M = 4.06 ; SD = 0.73), keep in touch with former employees (e.g through Alumni associations) (M = 4.00 ; SD = 0.81), prefer to engage new and qualified staffs (M = 4.05 ; SD = 0.83) as well as prefer to get services of consultants on technical tasks(M = 4.08 ; SD = 0.86).

The results also indicated that organizations purchase new equipment to make work easier (M = 3.94 ; SD = 0.84), encourage participation in conferences, seminars, exhibitions and fairs (M = 3.55 ; SD = 1.38), prefer to publish their work as well as refers to reputable journals (M = 3.59 ; SD = 1.42), have invested in research and development activities (M = 3.56 ; SD = 1.38), have invested in purchases of programs and licenses to ensure continuous flow of information (M = 3.93 ; SD = 1.31), have invested in continuous staff training programs in pursuit of new knowledge (M = 3.66 ; SD = 1.42), conduct customer interviews from time to time in order to establish areas for improvement (M = 3.66 ; SD = 1.42) and also engage in benchmarking against other similar institutions to seek improvement (M = 4.52 ; SD = 0.50). Generally, it was indicated that the research organizations have implemented knowledge recovery strategies (M = 3.94 ; SD = 1.00). In their study, Corwin (2015) revealed that mentoring is the most important strategy used by organizational leaders to retain tacit knowledge, while capitalizing of lack of structured systems and generational differences.

Table 3Descriptive Findings of Knowledge Recovery Strategy

Statements	Mean	Standard Deviation
The institution requires exit interviews for retiring employees and document the results	4.16	0.78
The institution hires a former employee to work as a consultant/contractor	4.13	0.75
The institution keeps in touch with former employees (e.g through Alumni associations)	4.06	0.73
The organization prefers to engage new and qualified staffs	4.00	0.81
The organization prefers to get services of consultants on technical tasks	4.05	0.83
The organization purchases new equipment to make work easier	4.08	0.86
The organization encourages participation in conferences, seminars, exhibitions and fairs	3.94	0.84
The organization prefers to publish its work as well as refers to reputable journals	3.55	1.38
The organization has invested in research and development activities	3.59	1.42
The organization has invested in purchases of programs and licenses to ensure continuous flow of information	3.56	1.38
The organization has invested in continuous staff training programs in pursuit of new knowledge	3.93	1.31
There is customer interviews conducted from time to time in order to establish areas for improvement	3.66	1.42
The organization engages in benchmarking against other similar institutions to seek improvement	4.52	0.50

Statements	Mean	Standard Deviation
Average	3.94	1.00

Organizational Performance

The organizational performance of the publicly funded research firms in terms of customer satisfaction index and employee satisfaction index (out of 10) was established through document analysis guide. The results in Table 4 indicate that on a scale of 1 to 10, the research organizations average an index of 7.20 in the year 2013, 7.31 in the year 2014, 7.35 in the year 2015 and 2016, 7.18 in the year 2017 and 7.67 in the year 2018. These values are above 70% to imply a good ranking from the customers.

Table 4 Descriptive Findings of Customer Satisfaction Index

	N	Minimum	Maximum	Mean	Std. Deviation
Customer Survey Index 2013	102	2	10	7.20	2.718
Customer Survey Index 2014	102	2	10	7.31	2.692
Customer Survey Index 2015	102	2	10	7.35	2.628
Customer Survey Index 2016	102	2	10	7.35	2.76
Customer Survey Index 2017	102	2	10	7.18	2.719
Customer Survey Index 2018	102	2	10	7.67	2.503

The employee satisfaction index was also established and presented in Table 7. The results in Table 5 indicate that on a scale of 1 to 10, the research organizations average an index of 8.18 in the year 2013, 7.82 in the year 2014, 8.08 in the year 2015, 8.20 in the year 2016, 7.65 in the year 2017 and 8.12 in the year 2018. These values are above 70% to imply a good ranking from the employees.

Table 5 Descriptive Findings of Employee Satisfaction Index

Year	N	Minimum	Maximum	Mean	Std. Deviation
Employee Satisfaction Index 2013	102	2	10	8.18	2.642
Employee Satisfaction Index 2014	102	2	10	7.82	2.55
Employee Satisfaction Index 2015	102	2	10	8.08	2.698
Employee Satisfaction Index 2016	102	2	10	8.20	2.736
Employee Satisfaction Index 2017	102	2	10	7.65	2.586
Employee Satisfaction Index 2018	102	2	10	8.12	2.667

Correlation Analysis

The study used correlation analysis to establish the relationship between the variables under investigation. The results as shown in Table 6 indicate knowledge recovery strategies is positively and significantly associated with organizational performance ($r = .839$, $Sig < 0.05$). This implies that an increase in knowledge recovery strategies is associated with a significant improvement in organizational performance of publicly funded research organizations in Kenya. A study by Ibrahim (2016) indicated that firms which adopted knowledge recovery strategies such as outsourcing had conducted their core project effectively and efficiency.

Table 6 Correlation Matrix

		Knowledge Recovery Strategy	Organizational Performance
Knowledge Recovery Strategy	Pearson Correlation	1	
	Sig. (2-tailed)		
Organizational Performance	Pearson Correlation	.839**	1
	Sig. (2-tailed)	0.000	
	N	102	102

** Correlation is significant at the 0.01 level (2-tailed).

Regression Analysis

A univariate regression model was established to determine the relationship between the two variables. As presented in Table 7, knowledge recovery initiatives explains up to 70.4% of the variation in performance of publicly funded research institutions in Kenya (R-square = 0.704). It was also established that the regression model linking knowledge recovery initiatives to performance was a good fit (Sig < 0.05). In addition, it was revealed that Knowledge Recovery Initiatives has a positive and significant influence on performance of publicly funded research institutions in Kenya ($\beta = 3.643$, P-value < 0.05). This implies that a unit increase in adoption of Knowledge Recovery Initiatives leads to an improvement in publicly funded research institutions in Kenya by 3.643 units.

The results also showed that knowledge recovery strategies is positively and significantly associated with organizational performance ($r = .839$, Sig < 0.05). This implies that an increase in knowledge recovery strategies is associated with a significant improvement in organizational performance of publicly funded research organizations in Kenya. A study by Ibrahim (2016) indicated that firms which adopted knowledge recovery strategies such as outsourcing had conducted their core project effectively and efficiency. A study by Ibrahim (2016) similarly showed that firms which adopted knowledge recovery strategies such as outsourcing had conducted their core project effectively and efficiency.

Table 7 Regression Analysis of Knowledge Recovery Initiatives and Performance

Model Summary					
R	R Square	Adjusted R Square	Std. Error of the Estimate		
.839	0.704	0.701	1.2894		
ANOVA					
	Sum of Squares	df	Mean Square	F	Sig.
Regression	395.664	1	395.664	237.993	.000
Residual	166.25	100	1.663		
Total	561.914	101			
Coefficients					
	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
(Constant)	-6.701	0.941		-7.125	0.000
Knowledge Recovery Initiatives	3.643	0.236	0.839	15.427	0.000
Dependent Variable: Performance					
Predictors: (Constant), Knowledge Recovery Initiatives					

IV. Conclusions

The study conclude that knowledge recovery initiatives has a moderate positive significant influence on performance of publicly funded research institutions in Kenya. This supported by; exit interviews for retiring employees, documenting results, hiring former employee to work as a consultant/contractor, keeping in touch with former employees, recruiting qualified staff, contacting manufacturers and service providers, equipment purchases, participation in conferences, seminars, exhibitions, publications and journal, research and development, staff training, benchmarking against other similar institutions.

V. Recommendations

Publicly funded research institutions in Kenya needs to review its knowledge recovery initiatives approach. These institutions should implement effective knowledge recovery initiatives to capture and retain all the knowledge possessed by retiring employees. The retained information should be documented.

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Influence Of Knowledge Recovery Strategy On Performance Of Public Research Institutions In Kenya

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Viona Muleke, et. al. "Influence Of Knowledge Recovery Strategy On Performance Of Public Research Institutions In Kenya." *IOSR Journal of Business and Management (IOSR-JBM)*, 22(11), 2020, pp. 01-08.