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The Strategic JOURNAL of Business & Change MANAGEMENT
ISSN: 2312-9492 www.strategicjournals.com

Vol. 7, Iss. 4, pp 375 – 388. October 16, 2020. www.strategicjournals.com, ©Strategic Journals

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Accepted: October 15, 2020

ABSTRACT

In order for organizations to thrive, remain relevant and maintain a competitive edge, there is need to leverage the potential of these virtual communities. This is possible if these organizations have effective Virtual Communities of Practice to share their knowledge and expertise within their virtual communities. The study aimed at assessing the influence of organizational structure and technical infrastructure on knowledge sharing in VCoP. From a target population of 7000 staff of Kenya Revenue Authority, a stratified sample of 94 respondents was surveyed using descriptive research design. Primary data was collected from the respondents by use of a questionnaire. Descriptive and inferential statistics were used to analyze data. Both organizational structure and technical infrastructure had a significant relationship with knowledge sharing in Virtual Communities of Practice at Kenya Revenue Authority. Organizational structure had the greatest effect on knowledge sharing in Virtual Communities of Practice in KRA. It was recommended that the Authority puts in place strategies and implement initiatives to support knowledge sharing in virtual communities. Further, modern technologies and supportive structure as an enabler of virtual knowledge sharing backed up by continuous training on the emerging technological issues as well as address the knowledge gap among the employees.

Key words: *Knowledge Sharing, Organizational Structure, Technical Infrastructure*

CITATION: Punyua, S., & Senaji, T. A. (2020). Assessment of factors influencing knowledge sharing in virtual communities of practice at Kenya Revenue Authority. *The Strategic Journal of Business & Change Management*, 7(4), 375 – 388.

INTRODUCTION

Knowledge is widely considered an essential commodity to organizations, resulting in competitive advantage (Kukko, 2013, Nonaka & Takeuchi, 1995). Knowledge management (KM) provides a means to align organizational goals with knowledge, leading to growth and further competitive advantages (Amayah, 2013; Howell & Annan Singh, 2013; Nonaka & Takeuchi, 1995). Therefore, creating a conducive environment to share knowledge freely among members is vital to the success of any organizations.

With the globalization characterized by rapid development of information technologies and the emergence of online service providers, there is increased participation in virtual communities (VCs) that enable knowledge sharing without necessarily one on one meeting, there is a hitch in managing supply of knowledge for managers of online communities and this remains below expectations. Zhang and Zhang (2016) argued that hoarding knowledge is prevalent among community members because people think their knowledge is too valuable and important to share. Thus, to identify the factors that support or hinder knowledge sharing online is quite important and necessary for practice.

The ability of organizations and individuals within them to share knowledge with each other, particularly organizational knowledge, is identified as one of the contributing factors to organizational competitiveness. This is because it allows them to discuss and deliberate on topics, which can encourage the generation of new knowledge (Fernie, 2003). With the development of information technology and the prevalence of internet, the ways through which people communicate and obtain information are more and more diverse.

Virtual Communities (VCs) enable knowledge sharing (KS) among geographically dispersed people possible, overcoming the limitations of the traditional face-to-face meeting. This special advantage makes VCs become an important channel of KS for different users. While VCs are increasingly pervasive, whether individuals participate and share knowledge is largely their own choice. A virtual community provides a platform for its users dispersing at different places to share information and knowledge, common interests, goals, or practice. This phenomenon activates the researchers' curiosity of how members of staff of the Kenya Revenue Authority (KRA) share knowledge and motivation of sharing this knowledge within their respective VCoP (Grabher & Ibert, 2017).

Knowledge is a combination of data, information, facts, description and skills learnt through experience and practice. Knowledge in this study encompasses tacit and explicit knowledge that employees learn by combining practical understanding of workplace routines, experiences and insights that contribute to individual and collective action. This study adopted the definition by Manaf, Armstrong, Lawton and Harvey (2018) who defines knowledge sharing as the exchange of knowledge between and among individuals, teams, departments and organizations. Knowledge sharing is a process of communication between two or more parties involved in provision and acquisition of knowledge, it refers to an individual transferring what he or she has learned to other group members (Chang & Chuang, 2011). This is when an individual is willing to assist as well as to learn from others in the development of new knowledge, new competencies, and new expertise.

Knowledge sharing enables employees to explore their minds and experiences to produce and share knowledge to enhance revenue mobilization. Knowledge sharing in a team enhances the team's capability. Frost (2012) identifies Knowledge Sharing as the most process of Knowledge Management (KM) since most of KM initiatives depend on it. Knowledge sharing involves a push and pull process, where knowledge pull involves the knowledge worker actively seeking to put knowledge sources for instance from an expert, while knowledge push is when knowledge is pushed

onto the users. Luarn and Hsieh (2014) indicated that virtual community users are more willing to express personal opinions and thoughts under anonymous conditions.

When individuals within a project or department share knowledge, it would be considered simple knowledge sharing. However, when new knowledge is generated in the form of some routines or procedures, and delivered to another department, it would be called as knowledge exchange. One challenge is to retain virtual members and encourage them to contribute to the knowledge base (Lai and Chen, 2014). Therefore, determining how to facilitate virtual users' knowledge contribution and sharing to increase the supply of community knowledge is a significant factor in the growth of a community (Qian et. al., 2015). The process of knowledge sharing is important to an organization as it paves way towards the customer satisfaction, cost reduction, excellence in business operations, achieving, and sustaining competitive advantage.

Statement of the Problem

As organizations get used to and continue adopting VCs as a channel to share knowledge, understanding the factors that can either support or hinder members of such virtual communities of practice to share their knowledge is critical, minimal research on this have been done so far. The purpose of this study therefore is to explore the antecedents that influence knowledge sharing in VCoPs.

While there are studies on knowledge sharing, very little attention have been given to strategic technology-based knowledge sharing specifically in virtual communities. From (Ondari-Okemwa, & Smith, 2009; Cheruiyot et al., 2012; Mosoti & Masheka, 2010), there is lack of strategies and policies targeting knowledge sharing within virtual communities as key to improve employee productivity and competitive advantage, this is due to the lack of a clear understanding of the factors that influence knowledge sharing in virtual communities.

Further, there has been a growing interest in examining the factors that support or hinder one's knowledge-sharing behavior in the VCs (Sheng & Sun, 2016). KRA has in the recent past been faced with challenges concerning knowledge loss. In most cases, these experts leave without sharing their knowledge and leave behind young staff who are new in the field of tax administration. Among the challenges is the dispersion of branches, which are located in all the 47 counties of Kenya, making it hard to share their knowledge physically, in this regard the concept of sharing this knowledge virtually, becomes of great essence. These low levels of knowledge sharing has led to low productivity and failure to meet revenue targets (KRA Transformation Book 2019)

Although members with high sense community attachment usually have higher intrinsic motivation to be accepted by other members in VCs and to be involved in knowledge sharing (Lau, 2018), the factors that influence knowledge sharing in virtual communities has not been fully addressed. To fill the gap and know more about the antecedents of knowledge sharing in VCoPs, the study sought to assess the effect of organizational structure, and technical infrastructure, on knowledge sharing in VCoPs. This study empirically sought to verify that knowledge sharing can emerge from online communities and if the concept of VCoPs can be used to guide knowledge sharing and knowledge creation in online environments. Consequently, this study had two objectives:

- To examine the influence of Organizational Structure on knowledge sharing in VCoPs
- To assess the influence of Technical infrastructure to knowledge sharing in VCoPs

LITERATURE REVIEW

Technology Acceptance Model

Technology Acceptance Model (TAM) is a greatly applied model of technology user acceptance. TAM identifies that two specific components; perceived usefulness and perceived ease of use determine the individual behavioral intention toward the use of technology. Noting that knowledge is created

through interaction among individuals, the tacit often subjective intuitions of individual employees and making those insights available for testing and use by the company as a whole.

A research by Joo, Park and Lim, (2018) states that, knowledge sharing can be regarded a channel to attain status and network centrality in organizations. This implies that those with lower social network centrality are likely to have higher extrinsic motivation to share knowledge to gain higher status and position in the social network while those with higher social network centrality may lose the motivation to continue sharing knowledge. Joo, Park and Lim, (2018) further holds that the key to knowledge creation is personal commitment and employees sense of identity with the enterprise and its mission. After knowledge generation, knowledge sharing creates the ability to exchange relevant ideas, knowledge, experiences and information. In KRA, sharing knowledge within virtual groups helps in improving work processes and overall organizational performance as use of technology will make knowledge sharing easier especially among staff located in the many Tax Service Stations (TSOs). This virtual social networking will create more motivation to continue sharing knowledge.

Social Exchange Theory

Social Exchange Theory (SET) is a model that tries to understand organizational behavior. Wu and Lin (2006) in a study about knowledge sharing in virtual communities based on this theory found that three factors have indirect effect on knowledge sharing including, mutual communication and understanding, factors including, mutual influence, commitment, and conflict have direct effect on knowledge sharing. According to the antecedent of SET, it is a theory that describes the rational behavior of the individual to perceive the possibility of rewards that they are gained from the social exchange.

In another research, Aliakbar, Yusoff and Mahmood, (2012) in a survey to find about motivational knowledge sharing factors in online environment reported that the extent to which information may be exchanged in an online environment depends on the degree to which actors are integrated with other actors. Therefore, this means that when developing online knowledge sharing, there is need to pay more attention and help to build trust-based relationship between employees. Recent to the study, Cry and Choo, (2010) revised the original concepts of SET and found that SET depended on belief of individual propensity to share and individual's social value orientation. This refers to the individual preferences to share their knowledge.

This therefore means that, the SET has regarded to the benefits and reduce costs that incurred when an individual exchange with others. There are four major types of rewards namely; Money, Social approval, Self- esteem or respect and compliances. Different staffs prefer or appreciate a different type of reward to share their knowledge.

The Kenya Revenue Authority may decide on which reward mechanism works for its employees. The sharing of knowledge within groups helps in improving work process and improve overall organizational performance. Rewards need not be necessarily tangible since individuals may engage in an interaction with the expectation of future reciprocity whereby all exchanges operate under the assumption that people who grant the be valuable resources received rewards in turn as payment for value received.

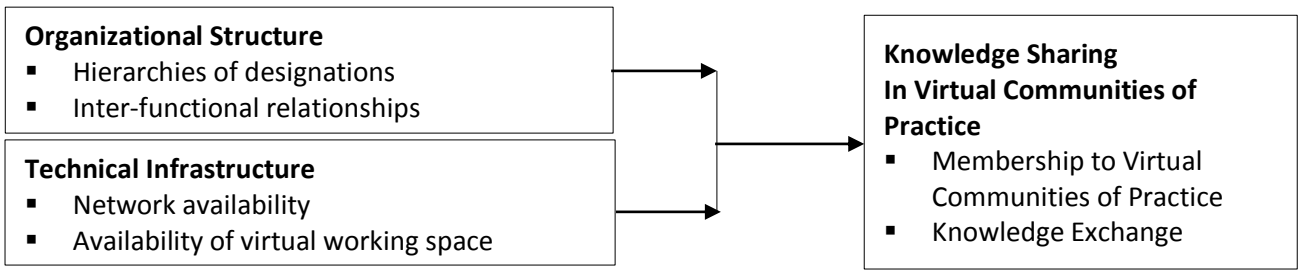

Figure 1: Conceptual Framework

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Organizational Structure

Organizational structure is defined as the way people and jobs in an organization are arranged so that the work of the organization can be performed. Organizational structure facilitates and accelerates decision-making. Organizational structure includes such constructs as hierarchies of designations or reporting lines and inter-functional relationships and communication amongst them in their efforts to share knowledge.

Despite limited research on the influence of organizational structure on KS, several scholars have emphasized the importance of the organizational structure for effective KS. The hierarchical structure that marks many government organizations limits KS activities and communication between employees or between employees and supervisors and it is suggested that organizational structures should be designed to promote flexibility as a means of encouraging sharing and collaboration within and across organizational boundaries and supply chains. It further explores the impact of formalization, defined as the degree to which organizational activities are manifested in written documents regarding procedures, job descriptions, regulations, and policy manuals on employee KS activities.

Technical Infrastructure

Information technology (IT) can facilitate collaborative work and enable the knowledge-transfer process (Chung, Byrd, Lewis and Ford (2005). Software and hardware used in knowledge sharing technically facilitate the creation, storage and dissemination of relevant knowledge. However, such technologies are inherently limited in their ability to transfer knowledge that is tacit in nature (de Vasconcelos, Kimble, Carreteiro & Rocha, 2017). Researchers argue that the technical infrastructure is highly dependent on the value of the content it holds Basten and Haamann (2018) and the relationships it can foster. In the context of virtual communities, information quality has been shown to indirectly affect participation in virtual communities of practice.

Lindner and Wald (2011) believe that besides technical infrastructure being a key factor of knowledge management, it has in most cases been underestimated even in previous research. According to Toro and Joshi (2013) and Quadri (2012), good ICT infrastructure is an inevitable precondition for any successful knowledge management practice in an organization. Efficient infrastructure is of paramount importance in creating, sharing and applying knowledge in organization and therefore being an enabler and a perfect solution to knowledge sharing (Bataweel & Alsuraihi, 2018).

Knowledge Sharing in Virtual Communities of Practice

Knowledge sharing as the exchange of knowledge among individuals, teams, departments and organizations (Manaf, 2012). Organizations that manage both their internal and external knowledge are said to be more innovative and better performers (Andreeva and Kianto, 2011). Knowledge sharing increases productivity, improve the work processes, and create new business opportunities while helping them meet their organizational objectives (Chien and Tsai, 2012). The aim of knowledge sharing is to enhance organizational knowledge through shared vision and utilization of experiences.

Organizational Structure and Knowledge Sharing in Virtual Communities of Practice

A centralized structure reinforces past behaviors whereas a more decentralized structure allows shifts in beliefs and actions. For the purposes of study, organizational structure was approached in line to its influence on knowledge sharing in virtual communities. Studies have established that individuals, technology, organization culture and structure are possible barriers to knowledge sharing (Mosoti and Masheka, 2010). This study sought to establish how organizational structure influences knowledge sharing. Organizations with a centralized, bureaucratic management style can stifle the creation of new knowledge, whereas

flexible, decentralized organizational structure encourages knowledge sharing, particularly of knowledge that is tacit in nature (knowledge that resides in the heads of knower). Thus in order to be successful in knowledge transfer, firms must be organized to be highly flexible and responsive (Chung, Luo & Wagner, 2006). Organizations with a flatter, less hierarchical structure may benefit from increased levels of knowledge sharing.

Despite the limited research on the influence of organizational structure on knowledge sharing in virtual communities, several authors have pointed out the importance of the organizational structure for effective knowledge sharing. Many government organizations have tall hierarchies, which in most cases limits knowledge sharing activities and communication amongst colleagues or between staff and their supervisors. These structures ought to be flexible enough to allow for casual collaboration within and across organizational departmental bounders. This study examines how organizational centralization influences knowledge-sharing activities within virtual communities of practice.

Technical Infrastructure and Knowledge Sharing in Virtual Communities of Practice

Information communication technology has been proven to increase knowledge transfer among people; this is by extending their reach beyond formal communication lines and engagements (Kowitlawakul et. al, 2015). For example, computer networks, electronic bulletin boards, and discussion groups facilitate contact among members of staff in an organization. According to (Ponnamma Divakaran and Nørskov,2016) knowledge-mapping technologies allow organizations to track sources of internal and external knowledge that help individuals locate specific types of information this also includes Internet based network systems, groupware systems, intranets, databases (DB), Electronic Data Management Systems (EDMS), and Knowledge Management Information Systems (KMIS).

Liu and Rau (2014), in examining employee's knowledge sharing behavior in virtual communities indicates that designing and implementing a knowledge management system that addresses user needs is one of the most important factor to consider influence knowledge sharing in virtual communities the benefit of the system. In this regard, this study also explores the influence of end-user information systems on employees' knowledge sharing capabilities (Zhang *et al*., 2016).

METHODOLOGY

The study adopted descriptive research design. The population of interest for this study was KRA employees based at the headquarters. KRA's total population was Seven thousand, (7,000). For the purposes of this study, the focus was on the staff based at the Authority's head office, which has approximately one thousand four hundred and seventy-three (1,473) employees. In determining the sample size, the researcher adopted the Nassiuma (2000) formula using the formula, the sample size of this study therefore was 94 staff

The researcher disseminated the semi-structured questionnaires physically to collect data and visited a representative number of respondents. The data was collected using structured questionnaire where primary data was collected covering both the dependent and independent variables. The questionnaire contained both structured and unstructured questions. The use of questionnaires was easier to analyze, administer, and economical in terms of time and money (Kothari & Gaurav, 2014).

The study adopted the internal consistency reliability method where Cronbach' alpha was calculate to establish the reliability index of the instruments, the pre-test questionnaires were administered to 10% of the sample population. The aspects pre-tested included question content, wording, sequence, form and layout, question difficulty and instructions. The validity of the research instruments was supported and confirmed

by seeking the opinions of the experts in Knowledge Management within KRA.

Data analysis comprised of organizing, analyzing and summarizing data to be collected. The collected data was analyzed using quantitative data analysis methods. Descriptive analysis such as frequencies and percentages was used to present quantitative data in form of tables and graphs. Data from questionnaire was coded and entered into the computer using Statistical Package for Social Science (SPSS Version 25.0) for analysis. It gave means, standard deviations, correlations and frequency distribution of each independent and dependent variable. The mean, median, percentage, mode and standard deviation were the most commonly used descriptive statistics.

We used multiple regression analysis to establish relationship between the dependent (Knowledge Sharing in virtual communities of practice) and independent variables (Sense of community, motivation to share knowledge, Technical infrastructure and organizational structure).

RESULTS

Out of the total distributed 94 questionnaires, 81 were returned. This translated to 86.1% response rate, which was acceptable for the study.

Description of Factors Influencing Knowledge Sharing

The study sought to determine the factors influencing knowledge sharing in Virtual Communities of Practice at the Kenya Revenue Authority.

Organizational Structure

The first specific objective of this study was to examine the influence of organization structure on knowledge sharing in VCoPs. The respondents were asked to comment on statements regarding the influence of organizational structure on knowledge sharing in virtual community of practice. The responses were rated on a Likert scale and the results presented in Table 1 below. It was rated on a 5 point Likert scale ranging from; 1 = strongly disagree to 5 = strongly agree. The scores of 'strongly disagree' and 'disagree' were taken to represent a statement not agreed upon, equivalent to mean score of 0 to 2.5. The score of 'moderately agree' was taken to represent a statement agreed upon, equivalent to a mean score of 2.6 to 3.4. The score of 'agree' and 'strongly agree' were taken to represent a statement highly agreed upon equivalent to a mean score of 3.5 to 5.

Table 1: Organizational structure

Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Std. Deviation
KRA has a lean organization structure that supports fast decision making	26.5%	30.9%	27.9%	8.8%	5.9%	2.65	1.231
I easily interact with my colleagues from other functions within KRA	1.50%	4.40%	39.70%	50.00%	4.40%	2.54	0.723
The leadership supports and encourages virtual knowledge sharing	2.90%	2.90%	33.80%	33.80%	26.5%	4.01	0.975
I don't feel intimidated to seek and share knowledge with my superiors	5.90%	4.40%	5.90%	41.20%	42.6%	5.00	1.095
At KRA, mistakes and failures are tolerated as learning opportunities	5.90%	1.50%	10.30%	39.70%	42.6%	4.12	1.058
Average						**4.13**	**1.016**

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Results in Table 1 indicated that majority of the respondents (57.4%) disagreed on the statement that KRA has a lean organization structure that supports fast decision-making. This meant that then structure does not support free knowledge sharing. 82.3% who are a majority of the respondents agreed on the statement that at KRA, mistakes and failures are tolerated as learning opportunities. The average mean of all the statements indicated that majority of the respondents agreed on the statement that organizational structure influences knowledge sharing in virtual community of practice.

Technical Infrastructure

The second specific objective was to examine the influence of technical infrastructure on knowledge sharing in VCoP. The participants were requested to specify their level of agreement on various statements relating to technical infrastructure.

Table 2: Technical Infrastructure

Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	Std. Dev
KRA has put in place necessary technology to support knowledge sharing	0.00%	0.0%	0.00%	44.40%	55.60%	4.56	0.499
All staff have access to the online knowledge sharing platforms	0.00%	0.0%	0.00%	51.90%	48.10%	4.48	0.502
Staff are sufficiently provided with tools of work to facilitate virtual knowledge sharing	0.00%	2.3%	3.80%	46.60%	47.40%	4.39	0.672
The online knowledge sharing platform supports my knowledge sharing	1.50%	1.5%	1.50%	42.90%	52.60%	4.44	0.742
I find it easy to access/ navigate through the knowledge sharing platform	0.0s0%	0.0%	0.00%	48.90%	51.10%	4.51	0.502
The content shared on online platforms is relevant and makes work easy	0.00%	0.0%	0.00%	52.60%	47.40%	4.47	0.501
Sharing knowledge within our group helps in improving work process and improve overall organizational performance	0.80%	1.5%	3.00%	49.60%	45.10%	4.37	0.691
The level of limits imposed on users by the existing ICT policies (Restrictiveness) supports knowledge sharing	0.00%	0.0%	0.00%	49.60%	50.40%	4.5	0.502
The online knowledge-sharing platform allows for creation of our groups for our own convenience.	0.00%	0.0%	0.00%	48.90%	51.10%	4.51	0.502
Average						**4.47**	**0.568**

The result in Table 2 indicated that majority of the respondent (55.6%) agreed with the statement that KRA has put in place necessary technological to support knowledge sharing. However, there were variations on the responses as shown by a standard deviation of 0.499. Further, the results revealed that majority of the respondent agreed with the statement that all staff have access to the online knowledge sharing platforms. The result revealed that majority of the respondent (4.39) agreed with

the statement that staff were sufficiently provided with tools of work to facilitate virtual knowledge sharing. The responses were varied as shown by a standard deviation of 0.672.

Result further showed that majority of the respondent agreed with the statement that the online knowledge-sharing platform supports my knowledge sharing. The responses were varied as shown by a standard deviation of 0.742. The result further revealed that majority of the respondent (M = 4.51, SD = 0.74) agreed with the statement that "I find it easy to access/ navigate through the knowledge-sharing platform. Responses were varied as shown by a standard deviation of 0.502. The result further revealed that majority of the respondent (M = 4.47, SD = 0.50) agreed with the statement that the content shared on online platforms is relevant and makes work easy.

From the responses, it was evident that majority of the respondent agreed with the statement that Sharing knowledge within our group helps in improving work process and improve overall organizational performance. However, responses were varied as shown by a standard deviation of 0.691. The result revealed that majority of the respondent (4.5) agreed with the statement that the level of limits imposed on users by the existing ICT policies (Restrictiveness) supports knowledge sharing. The responses were varied as shown by a standard deviation of 0.502. The result revealed that majority of the respondent (4.51) agreed with the statement that the online knowledge-sharing platform allows for creation of our groups for our own convenience. The responses were varied as shown by a standard deviation of 0.502. The average response for the statements on technical infrastructure was 4.47.

Knowledge Sharing

The respondents were asked to indicate their levels of agreement on statements regarding knowledge sharing. The analysis of the responses received were presented in Table 3.

Table 3: Knowledge Sharing

Statements	Mean	Std. Deviation
I am aware of the Knowledge sharing platform to use	4.14	0.818
I am aware of the mechanisms of virtual knowledge sharing in KRA	3.87	0.783
I find it easy to share my knowledge virtually	3.86	0.955
I seek /share knowledge with other members in my work place	3.98	0.802
I have various workgroups to join in KRA	3.82	1.029
I am aware of where and how to find Subject Matter Experts virtually	4.0	0.816
There are collaborative workspaces for knowledge sharing in KRA	2.86	1.476
Average	**3.79**	**0.954**

The results in Table 3 showed that that majority of the respondent (M = 4.14, SD = 0.818) were aware of the knowledge sharing platform to use; on average the respondents agreed as indicated by a standard deviation value of 0.818. The results further showed that the respondents agreed that; they were aware of the mechanisms of virtual knowledge sharing in KRA as (M= 3.87, SD = 0.783); they found it easy to share their knowledge virtually (M = 3.86, SD = 0.955). Respondents further agreed that they seek /share knowledge with other members in their work place (M = 3.98, SD = 0.802). However, they had serious workgroups to join in KRA (M = 3.82, SD = 1.029). Respondents also indicated that they were aware of where and how to find Subject Matter Experts virtually (M = 4.0, SD = 0.816). Furthermore, the results indicated that on average, the respondents had neutral opinion that there are collaborative workspaces for knowledge sharing in KRA (M = 2.86, SD = 1.48). The findings agree with Hui (2010) that Knowledge sharing as the exchange of knowledge among individuals, teams and departments.

Relationship between Organizational Structure, Technical Infrastructure and Knowledge Sharing

Correlation analysis helps to establish whether there is a relationship between variables of study. The analysis does not necessarily explain causal effect between variables. This study carried out correlation analysis in order to establish if there was any significant relationship between organizational structure, technical infrastructure and the knowledge sharing in virtual community of practice.

Correlation coefficient brings out the magnitude of the relationship between two variables (Mugenda and Mugenda, 2003). A positive coefficient means that there is a positive relationship between variables, while a negative coefficient means that there is a negative relationship between variables. A zero coefficient means that there is no association between the variables (Mugenda & Mugenda, 2003). The correlation analysis results are presented in Table 4.

Table 4: Correlation Matrix for the Study Variables

Variables		Organizational Structure	Technical Infrastructure	Knowledge Sharing
Organizational structure	Pearson Correlation	1		
	Sig. (2-tailed)			
Technical infrastructure	Pearson Correlation	.249**	1	
	Sig. (2-tailed)	0		
Knowledge sharing	Pearson Correlation	.611**	.435**	1
	Sig. (2-tailed)	0.000	0.000	

**** Correlation is significant at the 0.05 level (2-tailed)**

Correlation analysis results in Table 4 showed that organizational structure has a strong relationship with knowledge sharing (r=0.611, p=0.000); this relationship was significant since the p-value (0.000) was less than the selected level of significance (0.05). The findings also show that technical infrastructure was seen to have moderate and positive relationship with knowledge sharing (r=0.435); the relationship was significant since p-value (0.005) was less than selected level of significance (0.05).

Regression Analysis

The regression analysis in this case was used in assessing the effect of organizational structure, sense of community, motivation and technical infrastructure on knowledge sharing. This regression analysis is a statistical process for estimating the causal effect and relationships among variables. It includes many techniques for modeling and analyzing several variables, when the focus is on the relationship between a dependent variable and one or more independent variables (or 'predictors'). There are various assumptions for multiple linear regressions. First, it needs the relationship between the independent and dependent variables to be linear. Secondly, the multiple linear regression analysis requires all variables to be normal. Thirdly, multiple linear regression assumes that there is little or no multicollinearity in the data. The results in in Table 5.

Table 5: Model Summary

Indicator	Coefficient
R	0.852
R Square	0.725
Adjusted R Squared	0.709
Std. Error of the Estimate	1.860

a Predictors: (Constant), Organizational Structure, Technical Infrastructure

The results presented in Table 5 showed the amount of variations in the dependent variables explained by changes in the independent variables. From the findings, the value of adjusted R squared is 0.709, an indication that 70.9% variation in knowledge sharing in vCoP is explained by changes in organizational structure, sense of community, motivation to share knowledge and technical infrastructure. The remaining, 29.1% suggest that there are other factors influencing knowledge sharing in vCoP that were not included in this model.

The R^2 value shows the relationship existing between variables. From the findings, the value of R square is 0.852, an indication that the variables strongly related. In statistics significance, testing the p-value indicates the level of relation of the independent variable to the dependent variable. If the significance number found were less than the critical value also known as the probability value (p) which is statistically set at 0.05, then the conclusion would be that the model is significant in explaining the relationship; else, the model would be regarded as non-significant. The model fit results were presented in Table 6.

Table 6: Analysis of Variance

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	99.332	4	24.833	13.13	.000
Residual	121.043	64	1.891		
Total	**220.375**	**68**			

a. Dependent Variable: Knowledge Sharing in Virtual Community Practice

b. Predictors: (Constant), Organizational Structure and Technical Infrastructure.

The significance value was 0.000, which was less than 0.05, thus the model is statistically significant in predicting how the factors influence the knowledge sharing in virtual community practice at KRA. Further, the results implied that the independent variables were good predictors of knowledge sharing in virtual community practice.

The F-calculated value from the ANOVA table was 13.13 while the F-critical value from the F-distribution tables was ($F_{4,64}$=2.515). These findings showed that the F-calculated value was greater than the F-critical value thus supporting the significance of the model.

Table 7: Regression Coefficients of Variables

	Unstandardized Coefficients		Standardized Coefficients	Sig.
	B	Std. Error	t	
(Constant)	1.121	.286	3.917	.000
Organizational structure	.811	.185	4.392	.000
Technical infrastructure	.161	.046	3.50	.003

Dependent Variable: Knowledge Sharing in Virtual Communities of Practice

There exists positive and significant relationship between organizational structure and knowledge sharing ($t = 4.392$, $p < 0.001$). The relationship between technical infrastructure and knowledge sharing in virtual community was found to be positive and significant too ($t = 3.50$, $p= 0.003$). The regression findings found that organizational structure had the highest significance influence on knowledge sharing in virtual community practice followed by technical infrastructure.

The regression equation above has established that holding all factors constant at zero virtual knowledge sharing in KRA was 1.121 with a corresponding p-value of 0.000 which is a clear sign of significance. Thus, a unit increase in any of the variable would lead to a corresponding beta value

time's increase in the knowledge sharing at the Kenya Revenue Authority. The regression results also show that all the variables (Organizational Structure, and Technical Infrastructure), were significant ($p<0.05$).

CONCLUSIONS AND RECOMMENDATIONS

Based on the findings, the study concluded that organization structure had significant influence on knowledge sharing in VCoPs and so, there is need to develop, clear strategies to encourage staff easily and free interact with their colleagues from other functions and regions within KRA without necessarily following a particular protocol. Therefore, organization structure plays a key role in the influencing knowledge sharing at KRA. As such, there is a strong positive relationship between organization structure and knowledge sharing in virtual communities of practice at KRA.

Secondly, this study concluded that technical infrastructure has significant influence on knowledge sharing in VCoPs and found that KRA has put in place necessary technology to support knowledge sharing, other factors such as network availability and availability of virtual working space need to be addressed in order to have a serene virtual space. This therefore indicates that there is a significant relationship between Technical Infrastructure and Knowledge Sharing in VCoPs.

Given positive correlation between the dependent and independent variable, the management of KRA should create awareness of knowledge management, knowledge sharing and virtual communities of practice. This will involve total institutionalization of the concept of knowledge sharing in virtual communities and collaboration among staff. This can be done by restructuring the hierarchies of designations and inter-functional relationships to ensure that there are some common meetings between different departmental function.

As much as this study found that KRA had put in place necessary basic technology to support knowledge sharing, there is need to implement this across board so that all staff can collaborate and share their knowledge openly and easily. This should be supported by a clear knowledge management policy touching on continuous training on the emerging technological issues, reward and recognition, knowledge sharing opportunities as well as address the knowledge gaps among the staff. There should not be strict restrictions on the use of ICTs whereby there will be motivators to share more knowledge virtually.

Areas for Further Research

The objective of the study was to assess the factors influencing knowledge sharing in virtual community of practices at KRA. This study was great milestone for further research in the field Knowledge management especially in the public sector. It recommended that a similar research should be conducted with different variables or of other firms in other sectors, including the private sectors in the Kenyan market. The study also recommended that a similar study with a larger sample size may be carried out to compare the variance of response.

A review of literature indicated that there was limited empirical evidence on the same topic, actually, The study results revealed that organization structure, technical infrastructure, motivation and sense of community achieved a regression figure (R2) of value of 72.5 % and should therefore be expanded further to include other factors that may as well significance to knowledge sharing in virtual communities of practice so as to account for the remaining 27.5%. Thus, the findings of this study served as a basis for future studies on factors affecting virtual knowledge sharing. The study area has not been widely studied locally; this presents gaps in African and Kenyan contexts. Apparently, Future research may be designed to compare the findings in this study with findings that relate to firms in other regions in Kenya and other countries.

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