Determinant factors of knowledge management practice: the case of ministry of health, Ethiopia

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Abstract

This study aims at assessing knowledge management maturity level and the effect of the determinant factors of knowledge management in Ethiopia's federal ministry of health. Explanatory survey design involving both the quantitative and qualitative methods was employed. General knowledge management maturity model based on people, process and technology key process areas was used to measure knowledge management maturity level in the organization. The qualitative data was analyzed using thematic analysis and summarized under pre identified and emerging themes. The quantitative and qualitative data were triangulated to enrich the findings. The study determined that the ministry's overall knowledge management maturity level was close to maturity level-2 (Aware), which is generally to mean that the organization was aware of and has the intention to manage its organizational knowledge, but it might not know how to do so. Organizational culture, human resource, information technology and knowledge management process were identified as having significant and positive linear relationship with the knowledge management practice in the organization. It is essential for the ministry to reestablish knowledge management or define improvement plans using model such as the general knowledge management maturity model. The improvement should address the identified determinant factors as well as criterion set for each of the people, process and technology key process areas.

Keywords: Culture, Knowledge management, Technology

JEL Classification: M12, M15

INTRODUCTION

Knowledge management (KM) refers to a set of principles, tools and practices that enable people to create knowledge, and to share, translate and apply what they know to create value and improve effectiveness (WHO, 2006). During the past decade many governments have started to waken up after a series of challenges that forced them to think about new approaches and practices that can help lead them to be competitive (Chua

& Goh, 2008). In Ethiopia the national health sector transformation plan (HSTP) has recognized the importance of KM and stated that knowledge management has a strong tie to organizational goals and strategy, and it creates value for the organization. It revealed that in the countries health sector little emphasis has been given to KM so far, evidenced by loss of institutional memory or tracing documentation in major undertakings (Federal Ministry of Health, 2015).

In the knowledge economy, governments are increasingly facing competition over service delivery and policy-making both nationally and internationally from foreign organizations delivering the same services. Customers demand and receive more customization from knowledge oriented organizations, so they expect similar benefits from public service. The retirement of civil servants and frequent transfer of knowledge workers across government departments create new challenges for retention of knowledge and preservation of institutional memory and hence the need for the training of new staff. Jobs today depend more on employees' knowledge than manual skills (Cong & Pandya, 2003). Due to the high cost of government services compared with the private sector, a continual reduction of resources within the public sector needs to be supported by more effective KM initiatives and programs (Chua, 2009; Riege & Lindsay, 2006).

Organizations in developing countries are still facing uncertainty and ignorance towards what kind of value KM approaches and processes will generate for them concretely. Moreover, they are uncertain about what activities and processes they should implement to gain positive outcomes and benefits (Edvardsson & Durst 2013; Daud, Fadzilah & Yusoff, 2010). The progress of KM usage in health care sector of developing country has been abysmal. There is however, perceived prospect in the KM applications in the health sector of developing countries if conscious efforts are made to apply it (Bolarinwa, Salaudeen, & Akande, 2012).

In Ethiopia, recognizing the importance of KM the national health sector transformation plan (HSTP) revealed that KM is lacking in the countries health sector. It boldly stated that little emphasis has been given to KM so far, evidenced by loss of institutional memory or tracing documentation in major undertakings (Federal Ministry of Health, 2015).

Existing practices of knowledge management are largely derived by international organizations and private commercial companies (Ahmad & Khan, 2008). The government's ultimate directive is to better serve and protect its citizens not for profit orientation but also protecting all sort of issues related to public interest. It is important for organizations to understand the key factors which make KM implementation successful (Wong & Aspinwall, 2005). Furthermore as organizations have little control over environmental and external factors they should concentrate on their internal factors for a successful KM implementation (Valmohammadi, 2010).

Existing literatures indicated that there is lack of sufficient body of knowledge about factors that influence knowledge management, specifically in the context of governmental organizations in developing countries (Salleh & Ahmed, 2008; Ahmad & Khan, 2008). It was also understood that knowledge management is highly influenced by its surroundings and contexts, and it is crucial to assess knowledge management in the context of the organization of interest. Thus the purpose of this study is to assess the knowledge management maturity level and the effect of determinant factors of knowledge management in Ethiopia's federal ministry of health.

The main objective of this study is to assess the effect of determinant factors of knowledge management practice and the knowledge management maturity level in Ethiopia's federal ministry of health. Specifically, the objectives of the study were to

analyze: 1) knowledge management maturity level in the federal ministry of health; 2) the effect of organizational culture on knowledge management practice; 3) the effect of human resource on knowledge management practice; 4) the effect of management leadership and support on knowledge management practice; 5) the effect of information technology on knowledge management practice; 6) T the effect of KM process on knowledge management practice; 7) the effect of organizational structure on knowledge management practice.

METHODS

Research design

Explanatory survey designs that involve both quantitative and qualitative method were employed to assess determinant factors of knowledge management practices and the knowlge management maturity level in Ethiopia's federal ministry of health, between February 2018 and May 2019. An Explanatory survey design is selected because it better help in explaining effect of the determinant factors of knowledge management practices and the knowledge management maturity level in the ministry.

Sample size determination

The sample size is calculated using the formula for cross-sectional survey single population proportion. As far as my knowledge is concerned there are limited or no relevant studies on knowledge management and organizational learning practice in public sector organization in the country/similar countries. The sample size was determined as:

$$n = \frac{\frac{Z^2 \text{X } p(1-p)}{d^2}}{1 + (\frac{Z^2 \text{X } p(1-p)}{d^2 N})} = \frac{\frac{(1.96)^2 \text{X } 0.5(1-0.5)}{(0.05)^2}}{1 + (\frac{(1.96)^2 \text{X } 0.5(1-0.5)}{(0.05)^2(1066)})} = \frac{384.16}{1.829333} = 282$$

plus 20% non-respondent rate n = 340

where:

n = the minimum sample size.

z = the standard normal variable or deviate, α was 0.05 with 95% confidence interval.

d = Marginal error = 0.05

p = Estimated proportion, employee KM awareness rate of 50% (0.5)

The 340 sample size was distributed among the seven directorate based the their respective proportion of employee size. Accordingly, 340 survey questionnaires were distributed to the employees across the seven directorates of the ministry, using stratified simple random sampling proportionate to size. For the qualitative data collection seven in-depth key informant interviews (one per unit) were conducted with managers or employees of the directorates. Related documents and demonstrations of KM systems were also observed.

Model specification and assumption

In order to determine a relationship between each of the independent variable with knowledge management practice (dependent variable) the test of Pearson's correlation coefficient, independent T and analysis of one-way Variance were used. Then multiple regressions were used to study all factors' effect on knowledge management practice. Multiple linear regression analysis was used to find out the relationship between the dependent variable knowledge management practice (ŷ) and the independent variables: organizational culture (OC), human resources (HR), management leadership & support

(MLS), Information Technology (IT), knowledge management process (Pro), and organizational structure (OS)

The regression models are: $Y = \beta_0 + \beta_1 OC + \beta_2 HR + \beta_3 MLS + \beta_4 IT + \beta_5 Pro + \beta_6 OS + \varepsilon_i$

RESULTS AND DISCUSSION

Motives for knowledge management

Majority of the respondents (>90%) positively responded to the set of positive statements about the widely stated motives for implementing organizational knowledge management. Participants were asked to respond to seven positive statements about motives for implementing organizational knowledge management. All the participants positively responded to each of the statements. They indicated that knowledge management help in: improving organizational performance by producing and sharing knowledge more rapidly, creating institutional memory, releasing information more rapidly and making it more widely accessible to staff, promoting life-long learning, improving transparency, improving working relations and trust among employee, and making up for loss of knowledge due to staff turnover, retirements etc. This indicates that the motives behind establishing organizational knowledge management were very well recognized by the employee.

Knowledge management maturity level

For every directorate each key process area (people, process, and technology) was assessed using the set of characteristics of key knowledge management practices that determine a particular maturity level. People key process area for knowledge management deals with elements such as human resource, organizational culture, management leadership and support, and organizational structure.

Human resource

Participants were asked to respond to six positive statements about supportive human resource management for knowledge management in the organization.
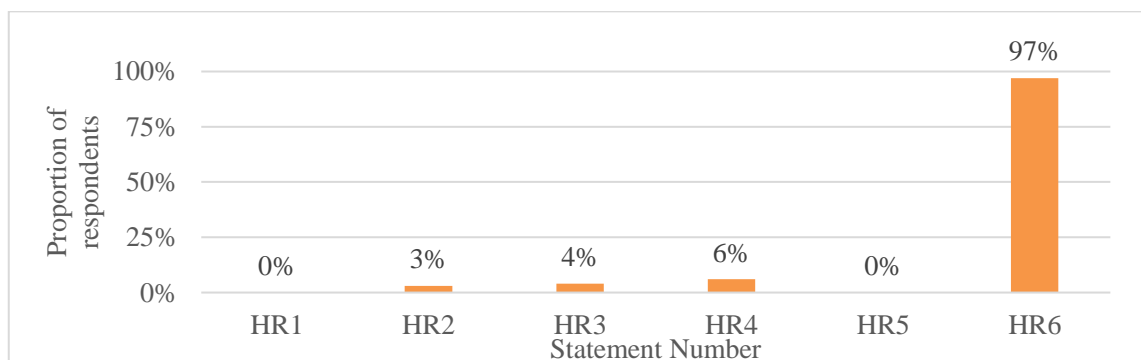

Figure 1. Human resource statement

As indicated in above figure, none or very low proportion of the participants positively responded to the first five statements. The majority disclosed that there was no KM training program (HR1), Individuals were not evaluated and recognized for sharing knowledge and their contributions to the development of KM (HR2), there was no strong mechanism for attracting & retaining talented people (HR3), staffs were not very well qualified for their job and knowledgeable in both their own job tasks and other related job tasks (HR4), there was low employee initiative and motivation (HR5). On the other hand almost all of the participants reported presence of seconded staff/s from other organizations to provide technical assistance & expertise, paid by their parent

organization - for a limited period of time (HR6).These indicate that there was lower level of supportive human resource management for knowledge management practice in the organization.

Organizational culture

Participants were asked to respond to six positive statements about supportive organizational culture for knowledge management in the organization.
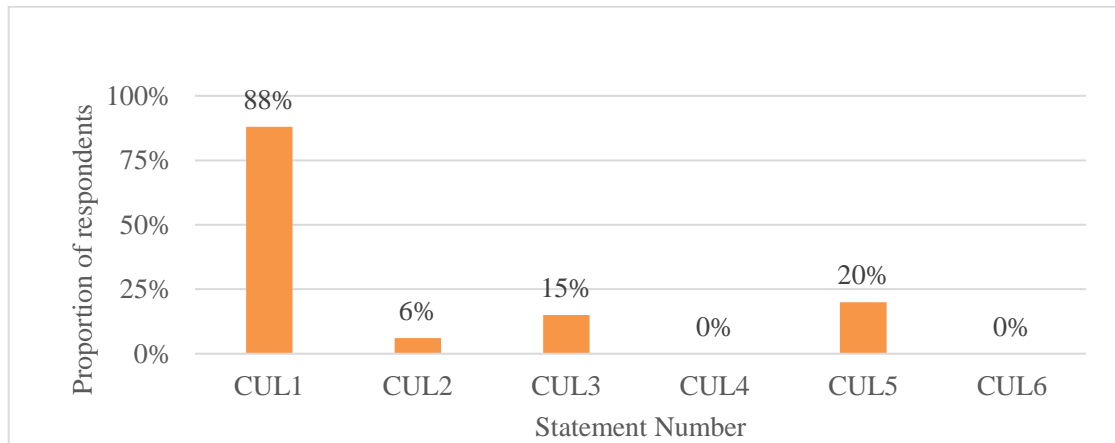

Figure 2. Organizational culture statement

As indicated in the above figure, nearly 90% of the participants reported that knowledge was considered as a main asset in the organization (CUL1). Greater than ¾ of the participants negatively responded to the other five statements. They indicated that KM was not recognized as a key organizational competence (CUL2), there was no strong norm of trust, cooperation and collaboration among employee (CUL3), there was no culture that based on total people involvement and team work (CUL4), there was no tradition of sharing knowledge and information (CUL5), and KM was not considered as everyone's job (CUL6).These revealed that there was lower level of supportive organizational culture for knowledge management in the organization.

Management leadership and support

Participants were asked to respond to nine positive statements about supportive management leadership & support for knowledge management in the organization.
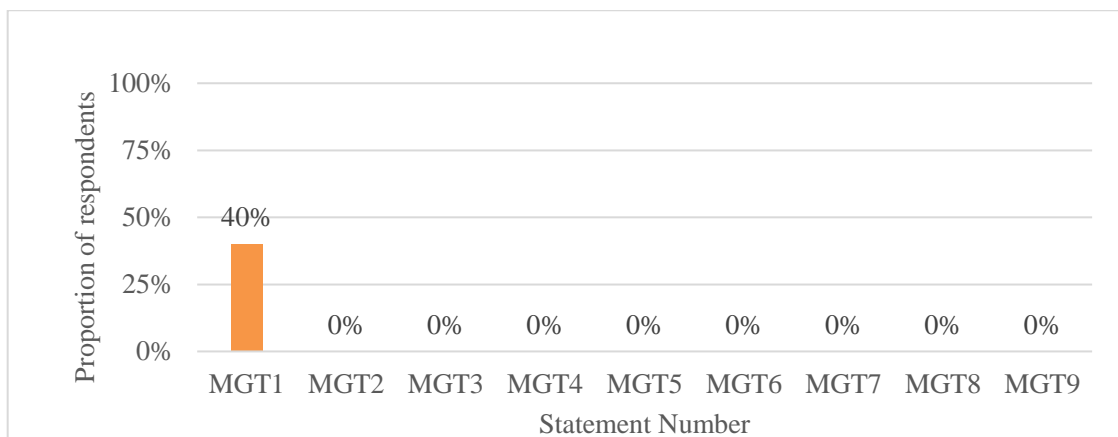

Figure 3. Management leadership & support statement

Only 40% of the participants positively responded to the first statement. They said that knowledge is recognized as a strategic resource and essential for the long-term success of the organization (MGT1). But none of the participants positively responded to

the other eight statements. They revealed that KM was not one of the top internal priorities of the organization (MGT2), there was no clear vision for KM (MGT3), there was no formal KM strategy in place (MGT4), KM was not incorporated into the overall organizational strategy (MGT5), there were no appointed high-ranking KM champions to promote KM practice in the organization (MGT6), there was no conscious drive to get all employees involved in knowledge sharing exercises (MGT7), There was no conscious decision to invest in KM (MGT8), There was no budget specially set aside for KM (MGT9).These show that there was lower level of supportive management leadership & supportfor knowledge management in the organization.

Organizational structure

Participants were asked to respond to five positive statements about supportive organizational structure for knowledge management in the organization.
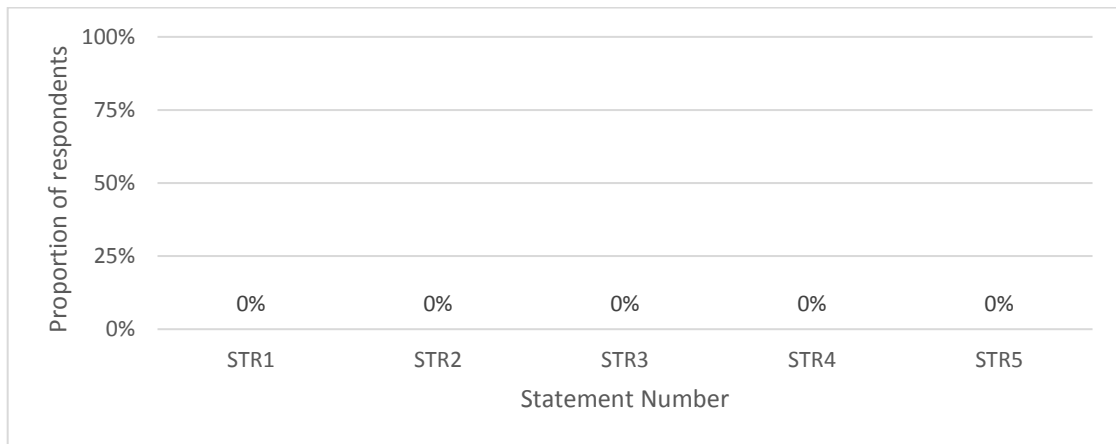

Figure 4. Organizational structure statement

As indicated above, none of the participants positively responded to any of the statements. They disclosed that there was no encouraging bureaucratic organizational structure (STR1), there was no decentralization of authority (STR2), There was no individual knowledge management roles that are defined and given appropriate degree of authority- Ex: KM Officers (STR3), there was low mutual trust within the department & among different departments (STR4), and employees were not always involved in important decision making process (STR5).These revealed that there was lower level of supportive organizational structure for knowledge management in the organization.

Table 1. Descriptive statistics

	Mean	Std. Deviation	N
KM Practice	1.9687	.32000	272
Organizational culture	2.3113	.51477	272
People	2.2145	.35415	272
Information Technology	2.8724	.04417	272
KM Process	1.8750	.39727	272
Management leadership & support	1.8518	.41163	272
Organizational Structure	1.8451	.32575	272

The Table 1 shows the mean score values of the factors relative to the central point. The central point, a value zero indicates that the factor is not supportive to the knowledge management practice in the organization. As the value increase above 0 it indicates increase in supportiveness of the factor for the KM practice in the organization. All of the factors scored value below 3 which indicate that they were low supportive to the

knowledge management in the organization. Management leadership and support, Organizational structure and KM process need more attention for the improvement compared to the others.

The determinant of knowledge management practice

From the correlations table we can see statistically significant positive correlation between KM practice and organizational culture ($r = 0.519$, with $p = 0.000$). Similarly there were positive and statistically significant correlation between: KM practice and human resource ($r = 0.130$, with $p = 0.016$), KM practice and information technology ($r = 0.457$, with $p = 0.000$) and KM practice and KM process ($r = 0.249$, with $p = 0.000$). On the other hand there was positive but statistical not significant correlation between KM practice and organizational structure ($r = 0.93$, with $p = 0.063$). There was negative but statistical not significant correlation between KM practice and management leadership & support ($r = -0.024$, with $p = 0.346$).

Table 2. Correlations

		KM Practice	Organizatio nal culture	Human resource	Information Technology	KM Process	Management leadership & support	Organizational Structure
Pearson Correlation	KM Practice	1.000	.519	.130	.457	.249	-.024	.093
	Organizational culture	.519	1.000	-.150	.181	.339	-.026	.324
	Human resource	.130	-.150	1.000	.099	.392	.752	.421
	Information Technology	.457	.181	.099	1.000	-.071	-.186	-.285
	KM Process	.249	.339	.392	-.071	1.000	.548	.732
	Management leadership & support	-.024	-.026	.752	-.186	.548	1.000	.758
	Organizational Structure	.093	.324	.421	-.285	.732	.758	1.000
Sig. (1-tailed)	KM Practice	.	.000	.016	.000	.000	.346	.063
	Organizational culture	.000	.	.007	.001	.000	.337	.000
	Human resource	.016	.007	.	.051	.000	.000	.000
	Information Technology	.000	.001	.051	.	.120	.001	.000
	KM Process	.000	.000	.000	.120	.	.000	.000
	Management leadership & support	.346	.337	.000	.001	.000	.	.000
	Organizational Structure	.063	.000	.000	.000	.000	.000	.
N		272	272	272	272	272	272	272

From the collinearity test statistics presented in the last column of the above coefficients table we can see the values of the VIF (variance inflation factor) higher than five or Tolerance value less than 0.2 for organizational structure and management leadership & support. Value of VIF higher than five (or Tolerance less than 0.2) can indicates the presence of multicollinearity, however in social sciences research, as VIF value as high as 10 is considered to be acceptable we can conclude that there was no multicollinearity in the model . Furthermore, from the Condition Index in the collinearity diagnostics table we can conclude that there was no multicollinearity as there were no any two independent variables which have Variance Proportions in excess of 0.9 (column values) corresponding to any row in which Condition Index is in excess of 30. Therefore,

as there is no detected multicollinearity in the model, we can conclude that the regression coefficients are meaningful

Table 3. Collinearity diagnostics

Dime nsion	Eigenvalue	Conditi on Index	Variance Proportions						
			(Constant)	Organizati onal culture	Peop le	Information Technology	KM Process	Management leadership & support	Organization al Structure
1	6.878	1.000	.00	.00	.00	.00	.00	.00	.00
2	.058	10.856	.00	.27	.02	.00	.00	.04	.00
3	.036	13.916	.00	.05	.02	.00	.14	.01	.02
4	.015	21.178	.00	.34	.01	.00	.59	.12	.01
5	.010	26.577	.00	.19	.35	.00	.10	.01	.20
6	.003	45.701	.00	.04	.52	.00	.16	.83	.67
7	8.289E-005	288.051	1.00	.12	.08	1.00	.01	.00	.11

From the model summary table we can observe the R values for assessing the overall fit of the model. The values of correlation coefficient between the predictors (Information Technology, KM Process, Organizational culture, human resource, Organizational Structure, and Management leadership & support) and the outcome variable (KM practice) is .677. The adjusted R-square value is .447 which means that the independent variables ((Information Technology, KM Process, Organizational culture, Human resource, Organizational Structure, and Management leadership & support) in the model can predict 44.7% of the variance in the dependent variable, knowledge management practice. This indicates that 55.3% of the variation in the knowledge management practice of the organization is accounted for other factors. The difference of the R-square and adjusted R-square (.459-.447) is .012 (about 1.2%), which means that if the model were derived from the population rather than a sample, it would account for approximately 1.2% less variance in the outcome.

Table 4. Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.677[a]	.459	.447	.23803	.459	37.465	6	265	.000

a) Predictors: (Constant), Organizational Structure, Information Technology, Organizational culture, Human resorce, KM Process, Management leadership & support

The ANOVA Table shows that the computed F-statistic is 37.465, with an observed significance level of less than .001. Thus, the null hypothesis (H0) that there is no linear relationship between the predictors and dependent variable is rejected. In other words the predictor variables have significant effect on the knowledge management practice of the organization, $F (6, 265) = 37.4465$, $p < .001$.

Table 5. ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
	Regression	12.736	6	2.123	37.465	.000[b]
1	Residual	15.014	265	.057		
	Total	27.750	271			

Dependent Variable: KM Practice

The beta coefficients are positive and statistically significant at P value of 0.05 for Organizational culture, Human resource, knowledge management process and information technology. Therefore, we reject the null hypothesizes that there is no relationship between each of these predictor variables and the dependent variable. In other

words the better the organizational culture, People, knowledge management process and information technology, the higher the organization's knowledge management practice.

Table 6. Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	-5.444	1.114		-4.888	.000	-7.636	-3.251		
	Organizational culture	.284	.036	.457	7.854	.000	.213	.355	.603	1.657
	Human resource	.290	.072	.321	4.046	.000	.149	.431	.324	3.084
	Information Technology	2.192	.393	.303	5.577	.000	1.418	2.965	.694	1.441
	KM Process	.112	.056	.139	2.000	.047	.002	.222	.425	2.354
	Management leadership & support	-.216	.084	-.277	-2.572	.011	-.381	-.051	.176	5.694
	Organizational Structure	.005	.102	.005	.044	.965	-.196	.205	.191	5.246

a. Dependent Variable: KM Practice

The beta values indicate that from the observed factors organizational culture is the most important factor followed by human resource and information technology. A change of 1 standard deviation in organizational culture will result in a change of .457 standard deviation in the knowledge management practice; a change of 1 standard deviation in people will result in a change of .321 standard deviation in the knowledge management practice; a change of 1 standard deviation in information technology will result in a change of .303 standard deviation in the knowledge management practice; a change of 1 standard deviation in knowledge management process will result in a change of .139 standard deviation in the knowledge management practice.

The findings are in line with many similar studies. Aspinwall & Wong's (2005) stated management support and leadership, a knowledge-friendly culture, information technology, a clear strategy for managing knowledge, incentives to manage knowledge proactively and measuring the effectiveness of KM as the six most critical success factors of KM. Similarly Valmohammadi (2010) stated that leadership & management support and organizational culture are the two most critical factors for implementing successfully KM processes. In his analysis to discover root causes of failed initiatives across various organizations where knowledge management was being implemented, Frost (2014) indicated that inadequate management support and improper organizational structure were among root causes for knowledge management failure. Ndou (2004) indicated role of leaders and strategy definition and provision of ICT infrastructure among the six important elements for successful implementation of knowledge management initiatives. A study conducted in Addis Ababa University identified individual factors, organizational factors, and ICT infrastructure as having significant impact on knowledge sharing practices (Minwalkulet & Assefa, 2018). A study in Dire Dawa Ethiopia (Temtime, Jimma & Belay, 2015) indicated that KM and productivity depend on people, ICT facility, organizational policy, KM policy and capacity of knowledge expert. A study in Jimma University (Ebuy, Bekele, & Jimma 2013) revealed that technology was least problematic and leadership was the most problematic among the four KM pillars that

were assessed (technology, leadership, organization and learning.) in relation the KM practices in the University.

Culture is among the most critical factors of knowledge management that have been cited in many literatures. Coakes, Amar & Granados (2010) stated that organizational culture is among the most dominating factors in formulating a successful knowledge management system. Rai (2011) stated that Organizational culture is a critical factor in building and reinforcing knowledge management in organizations. Walczak (2005) indicated that Organizational culture has paramount importance which may facilitate, support, and encourage the sharing, utilization and creation of knowledge. Voelpel & Han (2005) emphasized the significance of cultural dimensions in stimulating knowledge-sharing behavior. Alavi & Leidner (2005) indicated that a company's social context is one of the biggest factors that influence on the implementation of KM. Yeh, Lai & Ho (2006) stated that organizational culture also influences the willingness of employees to share and put knowledge into the organization. Bate & Robert (2002) refer to a tendency that appears to be an embedded public sector culture of not sharing information and knowledge between departments leading, in turn, to a difficulty in both the creation and maintenance of (a) interdepartmental relationships and (b) the potential to develop "communities of interaction". Oliver & Kandadi (2006) suggested that to develop knowledge culture, management needs to focus at some key issues such as leadership, organizational structure, business processes and infrastructures.

Goh (2006) articulated that people are the heart of creating organizational knowledge as it is people who create and share knowledge. Goh (2005) revealed that the primary challenge faced by organizations in developing countries is changing the employees' behavior and practices. Cong and Pandya (2003) indicated that the success of KM initiatives depends upon people's motivation, willingness, and ability to share their knowledge and use the knowledge of others.   In their argument of human resources as enabler of KM in the public sector Syed-Ikhsan & Rowland (2004) stated that KM is affected by posting, training and staff turnover. If employees are properly placed in the right places they bring to the organization their prior education, experience, knowledge and skills and they add value to the organization. Training will enable employees to convert their knowledge into the organization's routine, competencies, job descriptions and business processes, plans, strategies and cultures, which lead to the creation of new knowledge in an organization. Some organizations are constantly affected by staff turnover, which means that knowledge workers leave the organization without leaving their knowledge behind

Monavvarian & Kasaei (2007) described that information technology is a key enabler of KM, as it is the most effective means of capturing, storing, transforming and disseminating information. Gaffoor (2008) discussed that groupware, intranet, internet are some of the IT tools that enable collaboration or KM in organizations. Abass, Hayat, Shahzad & Riaz (2011) stated that when organizations have up-to-date infrastructure to help knowledge creation and sharing then employees truly recognize knowledge as a key element in strategic planning exercises. Yeh, Lai & Ho (2006) reported that information technology enables rapid search, access and retrieval of information, and can support teamwork and communication between organizational members. Monavvarian & Kasaei (2007) recognized technology as a key enabler of KM, as it is the most effective means of capturing, storing, transforming and disseminating information.

Wong & Aspinwall (2005) argued that successful KM depends on leadership and management support with a clear strategy and a purpose. Scholars reported that effective KM practices require an organizational climate with a reward system that value,

encourage cooperation, trust, learning and innovation, which all are seen to be still missing in many government organizations (Akdere, 2009; Zack, 1999; OECD, 2001). Lack of ownership for KM initiative in an organization, lack of awareness and lack of time were also identified as the key obstacles in KM implementation (Yuen, 2007).

Bannister (2003) point to the fact that the traditional hierarchical structures in the public sector have been potential causes to hinder the success of KM initiatives as such structures may well support the notion of territory and power. Monavvarian & Kasaei (2007) indicated that formal organizational structures limit an individual division's access to knowledge collected by other divisions in the organization. Most government organizations today are not specifically structured for the application of KM concepts and initiatives needed for efficient public service-delivery (Buheji, 2012). The structure of the bureaucratic organization is top down, and the information flows in one direction from the top down, from manager to junior in the form of instruction. Sinclair (2006) stated that KM might thrive more in a flat structure where information flows in all directions, both horizontally and vertically.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

The motives behind establishing knowledge management in an organization were very well recognized by the employee. The employee indicated that there was no or little supportive organizational culture, human resource management, leadership and management support, KM process, organizational structure and information technology for to the knowledge management practice in the organization.

Understanding KM maturity from the different dimension provided a comprehensive overview. The ministry's overall achievements were level one for each of the three KPAs (People, Process and Technology KPAs). However, considering presence of some directorates who achieved level-2 or level-3 it was estimated that the overall knowledge management maturity of the Ministry was close to level-2 (Aware), which is generally to mean that the organization was aware of and has the intention to manage its knowledge, but it might not know how to do so. The lower knowledge management maturity of the organization indicates the extent to which the organization was unsuccessful in accomplishing the key practices characterizing the higher KM maturity level. The set of criteria for each of the three key process areas (People, Process and Technology) were under achieved.

The predictor variables (Information Technology, KM Process, Organizational culture, Human resource, Organizational Structure, and Management leadership & support) can predict 44.7% of the variance in the dependent variable, knowledge management practice.

The predictor variables have significant effect on the knowledge management practice in the organization. The better the organizational culture, People, knowledge management process and information technology, the higher the organization's knowledge management practice. From the observed factors, organizational culture is the most important factor followed by human resource and information technology.

Recommendations

The fact that the motives behind establishing knowledge management were very well recognized by the employee is an enabling environment for KM strengthening; therefore the organization has to build on it in its KM initiative improvement.

In order to create enabling organizational environment to support improvement of the knowledge management practice the ministry has to improve its organizational culture, human resource management, leadership and management support, KM process, organizational structure and information technology accordingly.

The observed lower level of achievement in the set of key KM practice in each of the people, process and technology key process areas indicates the need for a compressive improvement that address every key process area using innovative evidence based model such as the general knowledge management maturity model.

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