Factors effecting Knowledge Management Process in Higher Educational Institutions

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Abstract

Knowledge management has enabled many Higher Educational Institutions to excel in performance. Educational institutions create a lot of knowledge but fail to harness the knowledge through proper Knowledge Management strategy. This research aims at finding the effect of work experience, position and familiarity of Knowledge management (KM) on KM process and also tries to find the key influencing factors within knowledge management process prevalent in select private and public Higher Educational Institutions in Bangalore. The sample size is 300 Academic Staff from select private and public NAAC accredited institutions. The Key findings of the study was that work experience and position did affect the KM process and being familiar about KM did not influence the KM process. Also, the institutions are willing to hire new staff members to create new knowledge. Involvement of experts, who provided an explicit way to accomplish the tasks in the academic institutions, enrich the process of knowledge deposition. Knowledge sharing is best when staff are assigned new roles based on their expertise. Institutions are willing to discuss problems and issues, thereby assess the existing process and systems. Staff are encouraged to promote their research results to other academic and business organisation. Knowledge management empowers HEIs to excel in all their goals and gain a competitive edge over their competitors.

Keywords: Knowledge management process, knowledge creation, knowledge deposition, knowledge dissemination, knowledge assessment and knowledge application

I. INTRODUCTION

Knowledge management in Higher Educational Institutions (HEIs) is an integral part of the education system. Educational institutions which are considered knowledge economy lack in clear template for implementing KM (Agarwal and Marouf 2014). Knowledge management enhances the use of information technology and organisational learning (Ahmad et al., 2017). Knowledge is used as a strategy to gain a competitive advantage (Appelbaum and Gallagher, 2000; Karma, 2006 Petruzzelli, 2008), but many educational institutions have failed to recognise the importance of KM. (Sharma, 2012). Organisations have to invest in the knowledge economy more than the other tangible assets. Knowledge management builds human capital resources, which is very vital in an educational institution. There is a constant need to explore new areas of knowledge to remain current and updated.

Higher educational institutions in India can become globally renowned and recognised with the implementation of KM. But many higher educational institutions though implemented KM but have not strategised it like business organisations (Veer-Ramjeawon & Rowley, 2019) Knowledge management if adopted in an organisation, has enabled the institution to increase performance. (Agarwal & Marouf, 2014). Knowledge management is based on principles such as knowledge is created by humans; therefore, human beings are superior to machines (Wheatley 2001). The knowledge created should be shared with all the members of the institution. Ermine, Jean-Louis. (2013) provides an insight into the knowledge value chain model useful for the organisation. They are Knowledge creation, knowledge storage, knowledge refinement, knowledge transfer and knowledge application. Many studies

have focused only on two essential aspects of the value chain, namely knowledge creation and knowledge sharing. The current research focuses on a comparison of knowledge management processes such as knowledge creation, knowledge storage, knowledge sharing, knowledge assessment and knowledge application in private and public institutions in Bangalore.

II. RESEARCH METHODOLOGY

A descriptive study is conducted using a structured questionnaire assessing the knowledge management process in select private and public institution in Bangalore. The target population comprised of an academic staff member of higher educational institutions. The institutions identified were NAAC accredited institutions established more than ten years.

The sample size was 150 respondents of a public institution and 150 private respondents. Bartlett et al. (2001) provide a table for determining sample size for educational and social research which for continuous data at 95% confidence level is 119 for population above 10,000. The study has more than the required number of respondents suggested by the table.

Data from the primary source were collected with the help of a standardised questionnaire. The instrument adopted for the study was initially developed by Filius et al. (2000) later replicated by Yahya and Goh (2002). 5-point Likert scale is used to measure five variables, namely Knowledge acquisition, knowledge deposition, knowledge dissemination, knowledge Review and knowledge Use and Reuse. The reliability score for items in knowledge creation was 0.852, for knowledge storage was 0.841, for knowledge sharing was 0.783, for knowledge assessment was 0.834, and for knowledge application, it was 0.793. Cronbach value for all the variables was above 0.70 the data is considered to be reliable (Nunally 1978).

III. LITERATURE REVIEW

Knowledge Creation/Acquisition is a process in which institutions incubate new knowledge or acquires knowledge from external sources. Staff members learning, experience and skills are an internal source of tapping the resources. They acquire new knowledge at expanding their horizons of learning new and current trends, attending seminars and conferences, undergoing training and workshop to upgrade their skills etc. the external sources of acquiring knowledge is collecting data of competitors, hiring new staff members and collaborating with other organisations (Morse 2000). Knowledge is also acquired by research, and the knowledge created builds individual and collective learning (Su Hsieh and Liu (2003,2004).

Knowledge Storage/Deposition is classifying and identifying important knowledge to retain it in the institution. Knowledge should be structured to be identified and locate it when required easily. Deposition means the extent to which knowledge is captured and embedded in the institution procedures, process and its handbook or database. Documentation of knowledge enhances the learning of individuals and teams (Su et al. 2003,2004). In the process of documentation, knowledge can be codified to enhance increased use of the same.

Knowledge Sharing/Dissemination means making knowledge more active and relevant to create value in the organisation. Knowledge sharing is a process where important and crucial information passes from individuals, teams and to all the members of the institution. Competence of stakeholder's support of the management and sharing knowledge word of mouth had a positive impact in institutions. (Chatterjee, 2019)

Knowledge Assessment / Review refers to taking a good account of the existing knowledge to retain or remove redundant knowledge. An institution should not concentrate on acquiring new knowledge but also erase old and stale information (Bessant 2003). It is a strategy where institutions can continuously validate the knowledge acquired (Henrie & Hedgepeth 2003).

Knowledge Application/Use is the completion of the knowledge cycle where knowledge is used and reused or removed from being used (King, Chung &Haney 2008). In this process, an institution can optimise the use of existing knowledge available within the institution.

Objectives of the study

To know the effect of work experience, position, and the level of familiarity of Knowledge management on KM process.

To identify the most influencing factors effecting knowledge creation, knowledge deposition, knowledge dissemination, knowledge assessment and knowledge review.

Description of demographic variables of the respondents

Table 1.1 shows the distribution of profile of the respondents observed over the factors of "Type of institution, Position, Department, Experience at the current institution, Level of familiarity with the term Knowledge Management in select Private and Public Institutions.

Table 1.1 Frequency and % regarding the profile of respondents

Profile of respondents		Frequency	Percentage
Type of institution	Private Institution	150	50
	Public Institution	150	50
Position	Administrative Staff	9	3
	Lecturer	96	32
	Assistant professor	168	56
	Associate professor	27	9
Department	Commerce	147	49
	Management	63	21
	Arts	57	19
	Science	21	7
	Engineering	12	4
Experience at the current institution	Less than a Year	39	13
	1 to 3 years	87	29
	4 to 10 years	156	52
	11- 15 years	12	4
	Above 15 years	6	2
Level of familiarity with the term Knowledge Management	New term	33	11
	Have little understanding of the term	132	44
	Clear understanding of the term	132	44
	Expert knowledge of the term	3	1
	Don't know	6	2
Total		300	100

Primary source

Regarding the *Type of institution,* the distribution shows that 50% of samples of respondents were from Private Institution and 50% were from Public Institution.

Regarding the *Position,* the distribution shows that the 3 % of the respondents are Administrative Staffs, 32 % of the respondents are Lecturer, 56 % of the respondents are Assistant professor and 9 % of the respondents are Associate professor. Thus it can be interpreted that highest percentage of Position is Assistant Professor.

Regarding *Department,* the distribution shows that 49 % of the respondents are from Commerce, 21 % of the respondents are from Management, 19 % of the respondents are from Arts, 7 % of the respondents are from Science and 4 % of the respondents are from Engineering. Thus it is inferred that most of the respondents are from Department of Commerce.

Work Experience

The above table on distribution of the respondents reveals that 13% of respondents have Less than a Year of experience, 29% have 1 to 3 years of experience, 52% of them have 4 to 10 years of experience, 4% of them have 11- 15 years of experience and 2% have Above 15 years of experience. Thus it is inferred that most of the respondent have experience from 4 to 10 years.

Level of familiarity with the term Knowledge Management

The distribution shows that 11 % of the respondents stated as KM as New term, 44% of the respondents stated as have little understanding of the term KM, 44 % of the respondents stated as clear understanding of the term KM and 1 % of the respondents stated as expert knowledge of the term KM. Thus, it can be interpreted that majority of the respondents had a clear understanding of the term KM.

Table 1.2 Effect of Work experience on Knowledge Management process.

ANOVA		Sum of Squares	Df	Mean Square	F	Sig.
KNOWLEDGE CREATION/ ACQUISTION	Between Groups	5.941	4	1.485	2.163	.073
	Within Groups	202.569	295	.687		
	Total	208.510	299			
KNOWLEDGE DEPOSITION/ STORAGE	Between Groups	14.946	4	3.737	5.778	.000
	Within Groups	190.776	295	.647		
	Total	205.722	299			
KNOWLEDGE DISSIMINEATION/SHARING	Between Groups	4.113	4	1.028	1.849	.119
	Within Groups	164.005	295	.556		
	Total	168.118	299			
KNOWLEDGE ASSESSMENT	Between Groups	8.889	4	2.222	4.132	.003
	Within Groups	158.647	295	.538		
	Total	167.535	299			
KNOWLEDGE APPLICATION	Between Groups	6.408	4	1.602	2.802	.026
	Within Groups	168.697	295	.572		
	Total	175.105	299			

H_0: There is no significant effect of work experience on Knowledge Creation, Knowledge Deposition, Knowledge Dissemination, Knowledge Assessment, Knowledge Application.

INTERPRETATION

There is no significant difference between experience level on Knowledge Creation as determined by one way above the F value = 2.163, p value= 0.073. Therefore, the Null Hypothesis is not rejected.

There is a significant difference between experience level on, Knowledge Deposition as determined by one way above the F value = 5.778, p value=.000. Therefore, the Null Hypothesis rejected.

There is no significant difference between experience level on Knowledge Dissemination as determined by one way above the F value =1.849, p value= .119. Therefore, the Null Hypothesis is not rejected.

There is a significant difference between experience level on Knowledge Assessment as determined by one way above the F value =4.132, p value=.003. Therefore, the Null Hypothesis is rejected.

There is a significant difference between experience level on Knowledge Application as determined by one way above the F value =2.802, p value=.026. Therefore, the Null Hypothesis is rejected.

Thus, it can be inferred that work experience did effect KM process such as Knowledge Deposition, Knowledge use and Knowledge Review, but did not affect Knowledge creation and knowledge sharing in HEIs

Table 1.3 effect of Familiarity of Knowledge management on KM Process

ANOVA						
		Sum of Squares	Df	Mean Square	F	Sig.
KNOWLEDGE CREATION	Between Groups	.068	3	.023	.032	.992
	Within Groups	208.442	296	.704		
	Total	208.510	299			
KNOWLEDGE DEPOSITION	Between Groups	.648	3	.216	.312	.817
	Within Groups	205.074	296	.693		
	Total	205.722	299			
KNOWLEDGE DISSIMINEATION	Between Groups	.400	3	.133	.235	.872
	Within Groups	167.718	296	.567		
	Total	168.118	299			
KNOWLEDGE ASSESSMENT	Between Groups	.246	3	.082	.145	.933
	Within Groups	167.289	296	.565		
	Total	167.535	299			
KNOWLEDGE APPLICATION	Between Groups	.661	3	.220	.374	.772
	Within Groups	174.445	296	.589		
	Total	175.105	299			

H₀: There is no significant effect of Familiarity of Knowledge management on Knowledge Creation, Knowledge Deposition, Knowledge Dissemination, Knowledge Assessment, Knowledge Application.

INTERPRETATION:

There is no significant difference between Familiarity of Knowledge management on Knowledge Creation as determined by one way above the F value =.032, p value=.992. Therefore, the Null Hypothesis is not rejected.

There is no significant difference between Familiarity of Knowledge management on Knowledge Deposition as determined by one way above the F value =.312, p value=.817. Therefore, the Null Hypothesis is not rejected.

There is no significant difference between Familiarity of Knowledge management on Knowledge Dissemination as determined by one way above the F value =.235, p value=.872. Therefore, the Null Hypothesis is not rejected.

There is no significant difference between Familiarity of Knowledge management on Knowledge Assessment as determined by one way above the F value =.145, p value=.933. Therefore, the Null Hypothesis is not rejected.

There is no significant difference between Familiarity of Knowledge management on Knowledge Application as determined by one way above the F value =.374, p value=.772. Therefore, the Null Hypothesis is not rejected.

Thus, it can be inferred that Familiarity of Knowledge Management did not affect the KM process in HEIs.

Table 1.4 effect of position of Knowledge Management process

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
KNOWLEDGE CREATION	Between Groups	4.461	3	1.487	2.157	.093
	Within Groups	204.049	296	.689		
	Total	208.510	299			
KNOWLEDGE DEPOSITION	Between Groups	12.546	3	4.182	6.408	.000
	Within Groups	193.176	296	.653		
	Total	205.722	299			
KNOWLEDGE DISSIMINEATION	Between Groups	.820	3	.273	.483	.694
	Within Groups	167.299	296	.565		
	Total	168.118	299			
KNOWLEDGE ASSESSMENT	Between Groups	4.854	3	1.618	2.944	.033
	Within Groups	162.681	296	.550		
	Total	167.535	299			
KNOWLEDGE APPLICATION	Between Groups	.347	3	.116	.196	.899
	Within Groups	174.759	296	.590		
	Total	175.105	299			

H_0: There is no significant effect of position on Knowledge Creation, Knowledge Deposition, Knowledge Dissemination, Knowledge Assessment, Knowledge Application.

INTERPRETATION:

There is no significant difference between Position on Knowledge Creation as determined by one way above the F value =2.157, p value=.093. Therefore, the Null Hypothesis is not rejected.

There is a significant difference between position on, Knowledge Deposition as determined by one way above the F value =6.408, p value=.000. Therefore, the Null Hypothesis is rejected.

There is no significant difference between position on Knowledge Dissemination as determined by one way above the F value =.483, p value=.694. Therefore, the Null Hypothesis is not rejected.

There is a significant difference between position on Knowledge Assessment as determined by one way above the F value =2.944, p value=.033. Therefore, the Null Hypothesis is rejected.

There is no significant difference between position on Knowledge Application as determined by one way above the F value =.196, p value=.899. Therefore, the Null Hypothesis is not rejected.

Thus, it can be inferred that Position affected only knowledge deposition and knowledge assessment.

Table 1.5 Friedman Test- Knowledge Incubation/creation

	Mean	SD	Mean Rank	Reliability
The staff of the institution research with external institutions and associations	2.78	1.17	**5.33**	0.852
The Institution has the policy to associate and gather information to cater to the needs of stakeholders.	2.74	1.12	5.22	
The institution is willing to spend on databases and subscribes to journal for acquiring new knowledge	2.31	1.13	3.14	
Our Institutions recruits staff to fill the skill and knowledge gap.	2.87	1.07	**5.49**	
Our institution looks for new opportunities to create knowledge.	2.38	1.15	3.45	
Members in the Institution are encouraged to attend the conference, and workshops to acquire new knowledge and updated with the current trends.	2.71	1.17	**5.20**	
Institutions strive to remain current and updated than their competitors.	2.71	1.22	5.18	

The above table 1.5 reveals that among all the factors the institution hires staff to acquire knowledge and skills required is ranked first. The other significant factors effecting knowledge creation is staff member actively involved to create professional network and attend training and workshops to enhance their knowledge.

Table 1.6 Friedman Test- Knowledge deposition/storage

	Mean	SD	Mean Rank	Reliability

Frequent brainstorming sessions are held to find solutions for problems faced in the day to day tasks.	2.81	1.12	3.47	0.841
The institution has a policy to meet after every assignment to discuss the success factors and the reasons for failures and takes remedial actions.	2.83	1.07	3.54	
Our institution frequently changes manual and work guidelines and keeps all the members updated of the same.	2.56	1.14	2.97	
The system in the institution allows every member to receive any change or new guidelines immediately.	2.90	1.18	**3.56**	
There is good documentation record for all tasks performed by individuals with an explicit description of the skills and knowledge required.	2.88	1.12	**3.59**	
If required experts are involved in explaining in detail and providing description to perform essential tasks.	3.02	1.03	**3.88**	

The above table 1.6 reveals that the involvement of experts to provide description and guidance to perform their tasks and description is ranked first. The institution has a policy of informing all members about the changes in the system and procedures and proper documentation of process and methods are considered most important among other factors of knowledge deposition.

Table 1.7 Friedman Test- Knowledge dissemination/ sharing

	Mean	SD	Mean Rank	Reliability
Mentors are assigned to handhold new staff members to help them to adjust to the institutional culture.	2.71	1.11	3.40	0.783
Sharing of knowledge is encouraged not only in a formal manner but also through routine discussions and conversations.	2.50	1.05	3.04	
Scheduled meeting time is fixed to discuss work-related matters and issues.	2.94	1.04	**3.86**	
Institutions foster a culture for sharing their enriching experiences in the academic and research frontiers.	2.51	1.08	3.01	
During performance appraisal, constructive feedback and suggestions are provided to performances. Peer and student feedback also help members grow.	2.73	1.10	**3.49**	

| Work is assigned based on experience skill and knowledge. Staff members are assigned responsibilities on a rotation basis. | 3.15 | 1.12 | **5.21** | |

The above table 1.7 reveals that job engagement and change in responsibilities are the most preferred way disseminating knowledge. Scheduled meetings and the constructive feedback back received during appraisal are other ways to share knowledge.

Table 1.8 Friedman Test- Knowledge Assessment/ review

	Mean	SD	Mean Rank	Reliability
Continuous work performance is monitored and discussed at regular intervals, and the same is recorded to assess the progress of an individual.	2.56	1.12	3.68	0.834
There is autonomy to discuss issues and problems freely. The institution also has grievances cell to address the personal problems.	2.93	1.05	**5.56**	
The Institution is open to change the existing system and redesign the policy when stakeholders provide suggestions.	2.53	1.00	3.73	
Staff are allotted assignments after taking into considerations their specialisations and interests and their willingness.	2.77	1.02	**5.29**	
Members are recognised and rewarded for their contributions made through research and consultancies.	2.55	1.05	3.68	
Faculty learning groups are formed to discuss and strategies to resolve issues faced in the workplace.	2.69	1.08	3.99	
Latest tools and techniques are available to assess and process information and remove redundant information	2.71	1.09	**5.08**	

Among the factors in the above table 1.8 for knowledge assessment, discussing problems and failures are the most suitable way of validation of existing knowledge and systems. Staff members take up new roles after their skills are assessed. and new tools are available for assessment of knowledge in the institutions.

Table 1.9 Friedman Test- Knowledge Application/Use

	Mean	SD	Mean Rank	Reliability
Staff are encouraged to use and apply their research findings and knowledge in teaching and updating curriculum.	2.79	1.09	**3.27**	0.793
Feedback from Alumni, parents and International Guests are considered while designing the programs and curriculum.	2.63	1.01	3.00	
Members research work are made available for the benefits of all individuals	2.46	0.98	2.70	
Inter-Disciplinary collaboration and networking help capitalise the use of resources available.	2.67	1.08	**3.03**	
Research is the foundation for developing and introducing a new program or courses.	2.63	1.02	**3.01**	

The above table 1.9 indicates that among the factors for knowledge application staff members apply their research findings to update curriculum is ranked first. The other factors are the multidisciplinary approach and specialisation and developing new programs through research.

IV. CONCLUSION

Knowledge management process is still in the evolution stage in Indian higher education. Work experience did have a significant effect on KM process and position only effect knowledge deposition and knowledge assessment, while familiarity of KM surprisingly did not affect KM process. The major factors contributing to knowledge creation is educational institutions hire new staff for acquiring or creating new knowledge. The factor contributing to knowledge deposition is the involvement of expert to provide explicit step-wise description to perform task to all the staff members. In knowledge dissemination change of job roles and transferring the learning from the job performed was considered a critical factor. Institutions have the policy to discuss failures and problems, and this proved to be the effective way of assessing knowledge finally staff members apply their research findings to update curriculum and development of new courses are the key findings of the research paper. Thus, if knowledge management process is strategized in HEIs they enrich the quality of learning and research of the institution.

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