Factors Influencing Knowledge Management – An Empirical Evidence Of Banaras Hindu University

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Abstract

Knowledge management in higher education aims to reveal the hidden value of information. Adopting knowledge management practices is extremely valuable for an organization because knowledge is actually treated as an asset, rather than something immaterial. This allows the organization to better protect and exploit what it knows, and to better target and improve its knowledge development efforts. Knowledge Management is a critical component of an organization's success, especially when it comes to accelerating knowledge creation, a driving force for innovation. In higher education institutions, Knowledge Management is also performed by non-academic staff in order to create and utilize knowledge within the operational area of the organization, as well as using personal experiences in a systematic manner for the purpose of increasing the organization's capabilities. A number of factors influence their knowledge management process, and the present study examined those factors using empirical study on 384 Non-academic staff of BHU. The findings of the research indicate that organizational, leadership, and technological factors play a significant role in the various knowledge management processes. These processes include knowledge acquisition, knowledge conversion, knowledge organization, knowledge sharing, knowledge utilization, and knowledge storage. Throughout the study, these factors were also examined with regard to their impact on Knowledge Management processes.

Keywords: Knowledge Management, KM factors, Non-Academic staff, Higher education, KM implementation, Knowledge Management process, Organizational, Leadership, Technological.

1. INTRODUCTION

Knowledge management represents an opportunity for India's higher education institutions to gain worldwide recognition. Organizations must invest significantly more in the knowledge economy than in other tangible assets. When knowledge management is implemented, an organization is able to boost its performance. The concept of knowledge management is based on the premise that humans create knowledge, thus making them superior to robots. Despite the development of knowledge management as a concept in higher education in India, the field is still in its infancy. One of the most significant factors resulting in the creation of relevant knowledge in educational institutions is the existence of qualified employees. This is for the purpose of acquiring or developing relevant knowledge. It has been proven that institutions have a policy of discussing failures and difficulties as a means of assessing their knowledge. Therefore, proper implementation of knowledge management will facilitate the smooth functioning of daily activities in higher education institutions.

A knowledge management system consists of a systematic process for creating, recording, sharing, and utilizing knowledge for the benefit of individuals and organizations. Through the use of human activities and technical practices, HEIs aim to develop and manage knowledge in order to link persons from different levels of administration and sections. The use of information practices and learning methodologies, which are also known as knowledge management practices, is becoming more widespread in education.

As Knowledge Management requires a total organizational transformation including organization culture, structure, management style, and leadership factors (Paris et al., 2019; Chang et al., 2012). Organizations should keep in mind different aspects of Knowledge Management. Gold et al., (2001) examined the issues of effective Knowledge Management from the perspective of organizational capabilities and presented strong evidence regarding the influence of KM infrastructure capabilities and KM process capability on Organizational effectiveness. Knowledge is seen as a valuable asset and as a factor of production, capital, land, and labour (Yaghi et al., 2011); as the world moves toward a "knowledge-based economy," knowledge is viewed as the primary driver of this new economy. Knowledge ownership and application are the keys to sustainable growth. Several researchers have become interested in the distinction between explicit and tacit knowledge. Some aspects, like university support and the physical environment, have not been accounted for in the framework for knowledge sharing in higher education.

Khoa & Hoa, (2021) asserted that universities must boost students' research activity, supported by multiple studies. This article addresses the challenges, identifies practical consequences and research needs related to knowledge sharing, and presents a conceptual framework for the same. We conclude with some recommendations for higher education institutions to enhance the process of information sharing among students. Like businesses, higher education institutions develop operational expertise through teaching and learning. Academics are interested in the work and methods of their peers. Knowledge management may not be institutionalized in higher education. This results in the loss of institutional knowledge, ineffective work methods, and the need to reinvent the wheel. People, processes, and technology facilitate the effective sharing of knowledge.

People begin and continue information sharing, whereas technology enhances efficient sharing and usage and removes sharing barriers. Organizational culture and management support are the most critical human elements influencing active development, network growth, and stability. People, methods, and technology are crucial to forming a knowledge-sharing actor network. The institution's culture determines its entrenched behaviour, according to the research. Management must demonstrate the leadership abilities needed to implement knowledge-sharing concepts in an institution. Findings propose blending personal connection and technology-based approaches to develop information exchange strategies. In higher education institutions, applying knowledge management strategies and practices can significantly enhance the institutions' operations and functionality. Knowledge management techniques assure the effectiveness of the services given by these institutions to their diverse clientele, including students, alumni, faculty, employees, industry, society, government, and the nation as a whole. In the era of privatization of higher education, universities must improve their standards, quality, and value-added offerings. So, there are certain factors that should be considered before implementation of KM in an institution. Thus, the specific objectives of the current research are to examine the influence of the factors: Leadership Factor, Organizational Factor and Technical factor on the implementation of knowledge management in the organization.

1.1. **Knowledge Management Process in Banaras Hindu University**

Higher Education Institutions (HEI) play an important role in creating a knowledge-based economy as well as a platform for knowledge. Knowledge assets are the seeds of higher education and contribute clearly to economic and social development in the future. As

universities have realized that they have a significant role to play in the knowledge economy, Knowledge Management (KM) has gained acceptance in the academic sector in recent years, presenting new challenges for higher education institutions, which are learning organizations. These organizations are able to enhance innovation and creativity, extend knowledge skills, produce top quality graduates, and contribute effectively to the development of knowledge and intellectual property. So developed countries and developing country like India should have a KM practice in academic institutions (Dhamdhere, 2015).

Banaras Hindu University is one of society's main knowledge temples, dedicated to the continuous pursuit of knowledge. This university has been operating for decades, but it must be up-to-date. In order to increase their competitive advantage, any method which increases their advantage might be very useful to them. There appears to be a number of recent technologies leading in this direction, including knowledge management. Implementing Knowledge Management will contribute to the university's success and make it one of the most successful universities worldwide. The concept of knowledge management in higher education refers to tools and factors that enable institutions to gather, organize, and disseminate knowledge. By doing so, everyone will have access to what they need at the right time in a university setting. Institutions that have previously relied on more traditional forms of information storage are likely to struggle with knowledge management, especially those that are adopting it.

It is therefore important that BHU establishes various factors that can aid non-academic staff in KM processes. A good educational setting should identify the ways in which people, processes, and technologies can be integrated, as well as policies and practices that facilitate the transfer of knowledge. Therefore, the present study examined factors influencing the knowledge management of non-academic staff in higher education.

H_1 Organizational factor has positive significant influence on the KM process as per the administrative staff of BHU.

H_2 Leadership Factor has positive significant influence on the KM process as per the administrative staff of BHU.

H_3 Technical Factor has positive significant influence on the KM process as per the administrative staff of BHU.
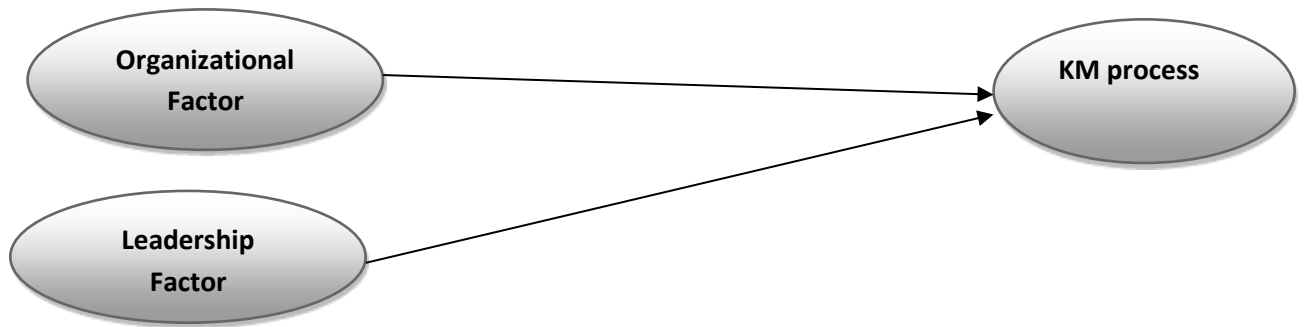
Technical Factor

353

Fig 1: Proposed Research Model

Source: Mathew (2010)

In this study, non-teaching staff was considered for the study. As non-teaching personnel administer the system of the college. The target population of Banaras Hindu University consists of non-academic personnel from several institutes. Institute of Medical Science, Institute of Science, Institute of Agriculture Science, Institute of Management Studies, Institute of Environment and Sustainable Development, and Central Office workers of the above-mentioned population make up the sample frame. Level wise staff data available on BHU website, Directory of BHU. For the present study non-teaching staff were sampled using multistage random sampling in accordance with the study's overall requirements. By sequentially taking a number of simple random samples, a multistage random sample is created.

The size of the sample has been drawn from the population. Sample size calculation formula for all stakeholders was considered for the study (Cochran,1977). Therefore, the minimum sample size of the population as per the formulae selected for the study was 331 respondents of non-academic staff. 740 Questionnaire distributed among administrative staff and considered 384 questionnaires for the study after the final data cleaning.

2. Data Analysis and Interpretation

Factors affecting Knowledge Management as per the Non-Academic staff of BHU

Exploratory Factor analysis

Three factors affecting Knowledge Management process in a university was identified from the literature review. Using exploratory factor analysis, all factors were validated by the administrative staff of BHU, and those items whose factor loading

354

was less than 0.50 were considered unfit. The researcher used the Kaiser-Meyer-Olkin Measure of Sampling Adequacy to determine whether the sampling was adequate and Bartlett's Test of Sphericity to determine the colinearity and redundancy of the data. A KMO value of 0.928 is found in Table 1, which is higher than the acceptable threshold of 0.70 (Tabachnick and Fidell, 2007). The Bartlett's Test of Sphericity proved significant, which meant that the data had no redundancy or multicollinearity, and that Principal Component Analysis was appropriate.

Table 1: KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.928
Bartlett's Test of Sphericity	Approx. Chi-Square	4509.275
	Df	153
	Sig.	.000

Using varimax rotation, the principal component analysis identified the factor loadings. According to Hair and his colleagues (2010), the extracted factors explained the total variance by 69.30%, thus justifying the minimum threshold of 60% (Hair et al., 2010). The table 2 shows that factor loading is more than 0.6 that permitting the researcher to move further to validate the factors using Confirmatory factor analysis.

TABLE 2: ROTATED COMPONENT MATRIX[A]	Component		
	Leadership Factor	Organizational Factor	Technical Factor
Shared Vision and Strategy	.863		
Participation in decision making	.811		
Conducive policies	.795		
Teamwork	.790		
Awareness and Training	.779		
Innovations Rewarded	.774		
Motivational Environment	.772		
Learning Culture	.758		
Processes Redesigned		.866	
Hierarchy of Authority		.857	
Total Quality Management		.847	
Process Work Flow		.808	
Organizational Structure		.716	
Collaboration through ICT			.815
Learning & training programs			.808
Processes redesigned for ICT			.799
University Strategic plan			.795

Government policies For ICT			.719
Eigen Value	**7.639**	**2.799**	**2.038**
Variance Explained (%)	**42.436**	**15.552**	**11.321**
Cumulative Variance (%)	**42.436**	**57.988**	**69.309**
N=384;Total Variance explained=69.309			
Extraction Method: Principal Component Analysis.			
Rotation Method: Varimax with Kaiser Normalization.			
a. Rotation converged in 5 iterations.			

Confirmatory Factor Analysis:

Using AMOS, the researcher has analysed and validated factors that affect Knowledge Management. CFA analysis was used to validate and confirm the three factors identified from the literature and validated with EFA analysis in the BHU Knowledge Management Process in Figure 2, which suggests that there are several factors that contribute to knowledge management process at BHU.
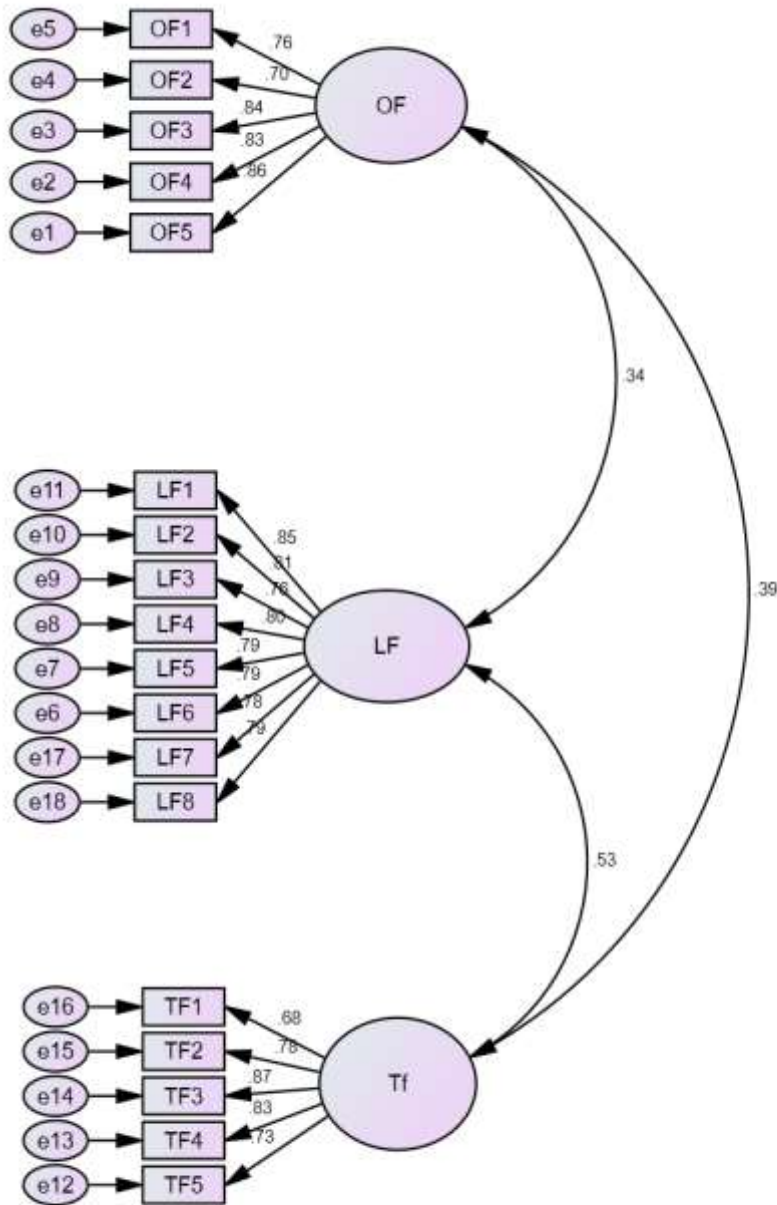
Fig2 : Confirmatory Factor Analysis Result

The reliability and validity parameters are mentioned in Table 3 The reliability analysis of the factor is represented through Cronbach's Alpha which should be more than 0.70. A construct validity assessment is conducted by looking at the convergence and discriminant validity of the construct. As a measure of convergent validity, the composite reliability (CR) of each construct should be greater than 0.7, along with the average variance extracted (AVE) greater than 0.5. along with the CR>AVE. Measures of discriminant validity are based on average variance extracted, and AVE of each construct should be greater than the maximum shared variance (MSV) as well as the average shared variance (ASV) (Jöreskog, 1969).

Reliability and validity of the constructs are within the acceptable range according to table 3.

TABLE 3: CONSTRUCT RELIABILITY & VALIDITY

	Cronbach's alpha	CR	AVE	MSV	ASV
Organizational Factor	0.897	0.898	0.640	0.153	0.135
Leadership Factor	0.932	0.932	0.631	0.286	0.202
Technical Factor	0.885	0.886	0.611	0.286	0.220

If the difference between the sample variances and covariances and those derived from the parameter estimates is small, then the model is deemed to be well fitted (Smith, 2009). The model fit indices of the proposed structure should be within an acceptable limit as stated in table 4. And the values for assessing model fit are within acceptable ranges, as shown in table 5 the Summary of Model Fit Indices. (Hair et al., 2010; Steiger, 1990)

TABLE 4: LEVEL OF ACCEPTANCE OF MODEL FIT INDICES

Category	Level of acceptance
AbsoluteF Fit Indices Relative Chi-square: c2 / df	c2 / df < 5.00
Comparative Fit Index(CFI)	CFI > 0.90
Goodness-of-fit index (GFI)	GFI < 0.95
Trucker-Lewis Index(TLI)	TLI > 0.90
Root Mean Square Error of Approximation: RMSEA	RMSEA < 0.08
Root Mean Square Residual: SRMR	RMR < 0.08

TABLE 5 : SUMMARY OF MODEL FIT INDICES

CMIN ($\chi2$)/DF	CFI	GFI	TLI	RMSEA	RMR	P Value
2.043	0.969	0.928	0.964	0.052	0.042	0.000

Influence of KM factors on KM process as per the non-academic staff of BHU

The influence of validated KM factors i.e. Leadership, Organizational and Technical factor on the KM process such as Knowledge acquisition (KP1), Knowledge Conversion (KP2), Knowledge Organizing (KP3), Knowledge Sharing (KP4), Knowledge Utilization (KP5) & Knowledge Storage (KP6) was analysed using PLS SEM approach (Ahmad et al., 2021). The reliability and validity of KM factors was stated in previous objective and KM process represented the Cronbach's Alpha 0.928, Composite reliability 0. 928 and average

variance extracted 0.684 and this is under the acceptable limit (Islam et al., 2021)

The path diagram of structural equation model is represented in the figure 3. The reliability and validity of factors was ensured through the use of convergent and Discriminant validity. The structural model is focusing on influence of the exogenous on the endogenous variables (Henseler et al., 2012; Zaid et al., 2018). The R^2 value explains the variance in the endogenous variable explained by the exogenous variable and it is above 0.26 (Cohen , 1988) which indicates a substantial mode . The Q^2 measures whether a model has predictive relevance or not and the value needs to be larger than 0 (Hair et al., 2017) and (Fornell and Cha (1994). The result for R^2 and Q^2 as per the table 6 is under acceptable limit

Table 6: R^2 & Q^2 value of Endogenous Variable

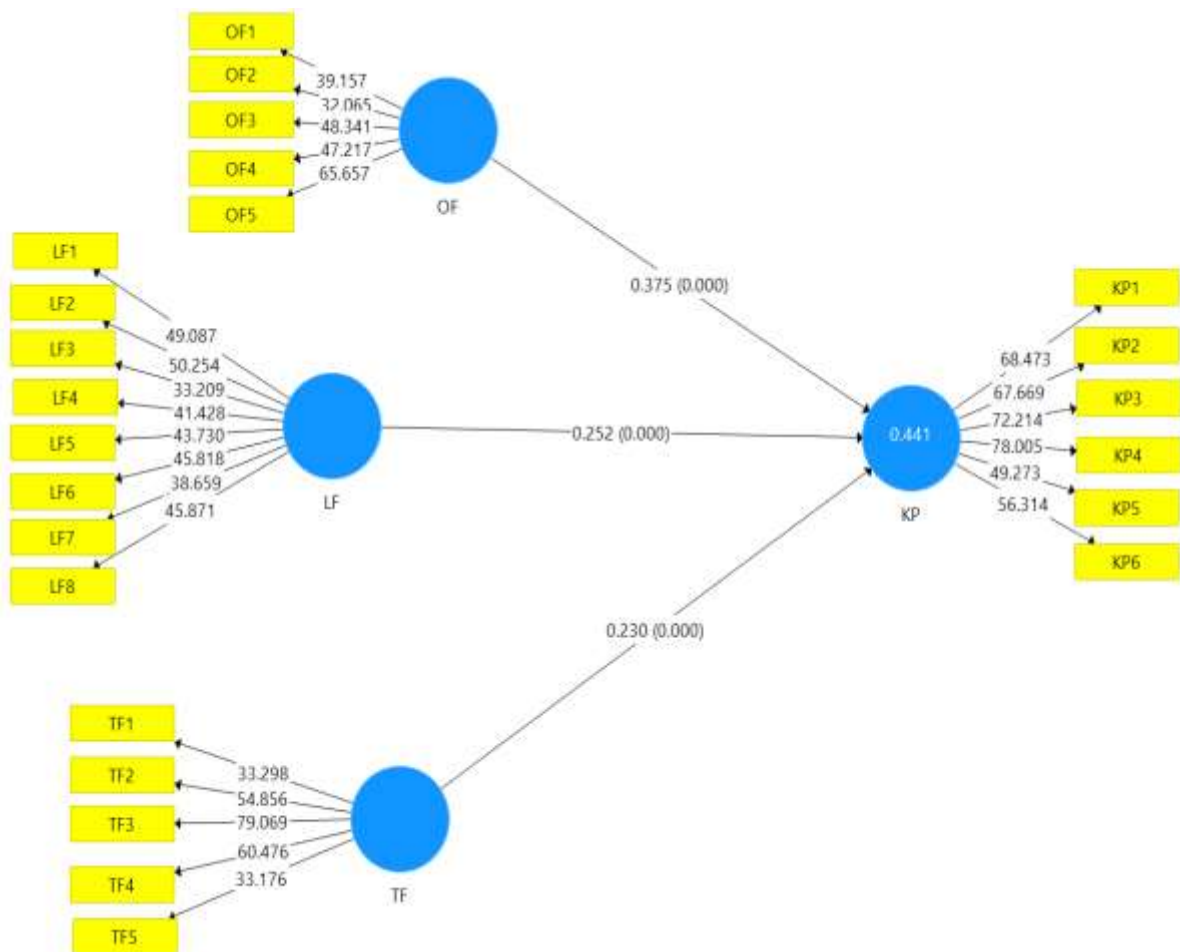| Dependent Variable	R^2	Q^2
Knowledge Management Process	0.441	0.319

Fig 3: Path Diagram of Structural Equation Model

Table 7: Result Hypothesis

	Original Sample (O)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
Leadership Factor -> Knowledge Management Process	0.252	0.044	5.673	0.000
Organizational Factor -> Knowledge Management Process	0.375	0.041	9.126	0.000
Technical Factor -> Knowledge Management Process	0.230	0.043	5.395	0.000

The analysis using partial least square in Table 7 with a level of significance 0.05 indicates the influence of Organizational factor (OF) on KM process (β = 0.375 and t-statistic = 9.126) is significant and the hypothesis is accepted. The influence of Leadership Factor (LF) on KM Process (β = 0.252and t-statistic = 5.673) is significant and the hypothesis is accepted. The influence of Technical Factor (TF) on KM Process (β = 0.230 and t-statistic = 5.395) is significant and the hypothesis is accepted. In order to demonstrate its significance, the data set that has up to 1000 observations or samples, the standardized path coefficient should be larger than 0.20 (Hair et al. ,2017). And the path coefficient of the construct > 0.20.

3. FINDINGS & DISCUSSION

The study revealed the significant effects of Organizational, Leadership and Technical factors on the KM processes. The influence was tested through Structural equation model using smart PLS and the hypothesis generated to analyze the effect was accepted and showed a Positive significant influence on the KM processes.

The ability of a university to generate organizational values is determined by its ability to develop, transfer, and use knowledge, which has an influence on its competitiveness among institutions of higher learning (Dzenopoljac, 2018; Badah, 2012; Rowley, 2000). Researchers, on the other hand, are looking for factors that promote Knowledge Management processes or activities, such as its Organizational, Leadership and Technical aspects. The researcher evaluated the effect of these factors on the KM processes as per the non-academic staff of BHU and the findings of the study are in line with the other researches (Andrej et al., 2022; de Souza et al., 2020; Yassin et al., 2013; Omona et al., 2010; Faerman & Creswell, 2006) According to the response of the Non-academic staff, all the three

Hypotheses H1, H2, H3, were accepted which showed that the factors have positive influence on KM processes and the Organizational factors have more effect than the other two factors on KM processes. To achieve the outcome in organization, the organizational factors in an organization must also be taken into account, such as redesigning the process workflows parallel to achieving the outcome. Leadership in this process of building knowledge networks, must possess a transformational culture and recognize that knowledge is power. Also, they must apply total quality management concepts to reviving the higher education system so that it can go a long way. Based on this, the results achieved by the researcher proved that these factors should be considered for implementing proper KM processes in the university and no study was found to have analyzed the effect of all the factors on Knowledge Management Processes. So the stakeholder considered in this present study and the university administration should reconsider all the factors for implementing KM processes, as they enhance people's efficiency and improve the flow of information in the university which, in turn may improve the activities of all the stakeholders in the university (Syed et al., 2004; Donate & Guadamillas, 2011; Singh, 2008; Chen & Burstein, 2006). No study was found which evaluated the effect of all the three factors on the KM process of non-academic staff in a single study, and this contribution is made through this research.

4. CONCLUSION

As per the study different factors are contributing to knowledge management process of non-academic staff in public universities. It was found that there are different components that are part of the factors that contributes in influencing Knowledge Management Process. It is important to help the organization to achieve Knowledge management as it is fostering a culture of knowledge exchange and sharing among personnel within the organization. According to the research results, it was found that the factors contributing to knowledge management process were organizational, leadership and technology and it has positive influence on the KM of non-academic staff. If university setup takes in to consideration these factors, the whole procedure of Knowledge Management process such as Knowledge acquisition, Knowledge Conversion, Knowledge Organizing, Knowledge Sharing, Knowledge Utilization & Knowledge Storage will be smoothened. By implementing Knowledge Management by non-academic staff, educational institutions can enhance their capacity to acquire and share information and knowledge, resolve many issues, and promote research and continuous development in the knowledge field, as well as improve their ability to acquire and share knowledge and information. In order

to properly manage knowledge assets within an organization, technologies and other strategies must be used to effectively collect, store, analyze, and share knowledge and information. Knowledge Management can provide educational institutions with access to current and relevant data and resources, which in turn can make it easier for their staff to make better decisions and improve the efficiency of their overall operations by providing access to current and relevant data and resources.

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