Knowledge Management Practices (KMP) and Academic Performance in Universiti Teknologi Mara (UITM) Terengganu, Malaysia

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Abstract: Knowledge management is one of the significant fields in the current organization in order to improve the performance. The aim of this study was to investigate the relationship between knowledge management practices and academic performance in public institution of higher learning. A questionnaire was used as the main instrument for the data collection. A total of 100 respondents answered the questionnaires which represented 54% of response rate. It was found that knowledge management practices namely knowledge generation, knowledge codification, knowledge sharing and knowledge utilization had positive and significant relationship with academic performance. Thus, in order to achieve higher academic performance, UiTM Terengganu has to ensure that the knowledge management practices were excellent.

Key words: Knowledge Management (KM) · Knowledge Generation · Knowledge Codification · Knowledge Sharing Knowledge Utilization

INTRODUCTION

Many studies in business industries had identified a number of problems in Knowledge Management (KM) initiatives, which contributed to the poor performance of many KM functions such as an over emphasis on technology and the codification of information; the separation of knowledge from how it is used; difficulties in storing and transferring tacit knowledge; lack of understanding of the context in which knowledge is used; and a focus on specific practices over underlying philosophies [1, 2]. Knowledge management has been investigated at business industrials and high schools level but, there have been no studies done to investigate knowledge management practices at a public institution of higher learning level. The purpose of this study was to investigate the relationship between knowledge management practices and academic performance in MARA University of Technology (UiTM) Terengganu, Dungun Campus. In the context of this study, two objectives had been formulated as follow:

- To investigate the types of knowledge management practices which are most emphasized in UiTM Terengganu.
- To investigate the relationship between knowledge management practices and academic performance in UiTM Terengganu.

Definition of Knowledge: Knowledge has become the important capital in the present age and hence the success to any organization lies in using it. As a result, many organizations adopt knowledge management (KM) to improve the performance. Thus, the aim of knowledge

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management is to continuously improve an organization's performance through the improvement and sharing of organizational knowledge throughout the organization. Knowledge is an organized combination of data, assimilated with a set of rules, procedures and operations learnt through experience and practice [3, 4]. On the other hand, Gorelick and Tantawy-Monsou [5], define knowledge as the know -how, experience, insight and capabilities that assist teams and individuals in making correct and rapid decisions, taking action and creating new capabilities. The knowledge can be intangible, fluid, personal, elusive, invisible, immeasurable and ever evolving [5].

The classification of knowledge falls into two categories namely tacit and explicit knowledge. Tacit knowledge is what we know but cannot explain [3, 6]. This form of knowledge; 1) is embodied in mental processes; 2) originates from practices and experiences; 3) is expressed through ability applications; and 4) is transferred in the form of learning by doing and learning by watching [3, 7]. Eucker [8] states that tacit knowledge consists of 'know-how', 'know-what' and 'know-who' that someone acquire and accumulate through practical experience, that they are often not even aware that they possess and that cannot really be learned in any other way. In fact, it is rare to find solutions to complex problems that are not dependent upon a significant amount of tacit knowledge [8]. In contrast, according to Badruddin [9], explicit knowledge could be expressed in words and numbers and shared from data, scientific formula, product specifications, manuals, universal principles and so forth. It can be created, written down, transferred, or transmitted among organizational units verbally or through computer programs, patents, diagrams and information technologies [3, 7, 10].

Knowledge Management: According to Marques and Simon [11], knowledge management practices refer to a more practical and perceptible level of research. From this dimension, knowledge management can be viewed as an organizational innovation involving important changes in the introduction of the strategy and in traditional management practices. Knowledge management has emerged as an important field for practice and research in information systems [12]. Knowledge management involves four key steps of creating/generating knowledge, representing/storing knowledge, accessing/using/re-using knowledge and disseminating/transferring knowledge [13-16].

Knowledge Management in Practise: This study adopts a framework for the knowledge management process developed by Zaim et al. [17]. Through this conceptual framework, knowledge management is composed of four main processes: knowledge generation and development; knowledge codification and storage; knowledge transfer and sharing; and knowledge utilization. However, for the purpose of this study, some changes had been made to simplify the process and to suit a new purpose for this study by using a single term for each practice. Therefore, the four processes which had been modified were Knowledge Generation, Knowledge Codification, Knowledge Sharing and Knowledge Utilization.

Knowledge Generation (KG): Knowledge generation concerns the practices of collecting or creation of new knowledge. Other terms that are being used are acquire, create [3, 18] and identify [19, 20]. The generation of new ideas and innovations in the firm, due to a better use of knowledge, could have an effect on the improvement of processes [11]. In the same way, an improvement in processes perfects employees' capabilities. Hence, knowledge creation is a learning curve for the individual, as well as organization [19].

Knowledge Codification (KC): Knowledge codification concern the practices of codifying or storage of new knowledge. Other terms that are being used are organize [3, 20], store [19] and documentation [18]. According to Baskerville and Dulipovice [12], knowledge codification involves the meticulous discovery of critical tacit knowledge that the organization has created, learned, or organized. Once discovered, this knowledge must then be articulated in a form that can be absorbed by others in the organization that could use the knowledge [12].

Knowledge Sharing (KS): Knowledge sharing concerns the practices of exchange of knowledge between the source of knowledge and the recipient of knowledge. Other terms that are being used are disseminate [19, 20] and transfer [3, 12, 18]. As Taylor [21] states, knowledge sharing arises from individual's efforts to transfer knowledge to others within the organization. Successful sharing also depends on the recipient's ability and willingness to learn [21].

Knowledge Utilization (KU): Knowledge utilization concerns the practices of using of knowledge that has been stored in organization. Other terms that are being used are application [3, 18], implemented [19] and reuse [18]. Users utilize information and knowledge in a variety of ways for different purposes. According to Jamaliah [22], knowledge utilization involves using and re-using knowledge to bring solutions to problems, reduce knowledge gaps and inform decision making. For knowledge to impact organizational performance, it has to be used to support the firm's processes [23].

Current Km Practice in Uitm Terengganu: Information Services Department: One of the knowledge management practices in UiTM Terengganu could be referred to Information Services Department. The Information Services Department is responsible in developing and maintaining a collections of none book in nature. Reference and information services are provided by all libraries in the system. The library also provides a variety of user education programs to enable users to utilize the library to its maximum potential.

ILMU: On the other hand, the library system called Integrated Library Management Utility (ILMU) is a library information and knowledge management software. ILMU is derived from the need to provide a seamless but integrated information environment representing a modern library system. The end-product is a major step towards a true digital library. ILMU utilizes client-server technology and accommodates multimedia; OLE, event-driven program execution and Online Databases Collections (ODBC) connectivity, in addition to conform to international classification and standardization schemes.

Academic Affairs Department: Apart from that, knowledge management practices as applied in Academic Affairs Department is referred to the knowledge that has been received from the top management which then will be disseminated to all staffs depending on the requirement. For example, the instructions received from the circular will be shared with the rest of the staffs in UiTM Terengganu. This information is distributed to all staff using Groupware called 'Lotus Notes' in which they can receive and send email to others within and outside of UiTM Terengganu. Besides, this information is also shared through memo posted on bulletin board.

Colloquium: For the academic staffs, the colloquium session is organized to share the information to other staffs. This session is held on every Sunday, Wednesday and Thursday from 4:00 p.m. to 5:00 p.m. The presentation of colloquium is aimed to share the variety forms of academic information, current issues, findings and experiences gathered from previous research. During the session, experiences and knowledge that the participants get from attending workshops, seminars, conferences, exhibitions and courses are being shared with other staffs.

ISIS: Another practice related to knowledge management is the utilization of ISIS system. This system solely meant for staffs to view and feed the data on every students ranging from personal information, examination results, student status and any information related to students' record. The academic staffs are provided with the username and password to access the information.

MATERIALS AND METHODS

In this study, the research had developed conceptual framework as adopted from past research conducted by *Zaim et al*. [17]. The conceptual framework came out with the independent and dependent variables as illustrated in Figure 1.

The independent variables in this framework were the knowledge management practices where they consisted of four processes namely; Knowledge Generation, Knowledge Codification, Knowledge Sharing and Knowledge Utilization whereas the dependent variable for this study was academic performance.

Research Design: This study was a correlation research due to nature of the study to see the relationship that exists among variable investigated [24]. Data were obtained from primary and secondary sources.
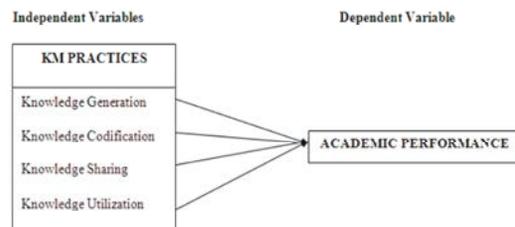

Fig. 1: The Conceptual Framework shows the Relationship between Knowledge Management Practices and Academic Performance

Table 1: Sections in Questionnaires

SECTION A:	Demographic background. This demographic background contains several items such as gender, age, highest educational level, years of working experience working in UiTM, teaching position and department/faculty.
SECTION B:	Request for information to identify the knowledge generation as applied in UiTM Terengganu. (Questions were adapted from Khalil et al., [18] and Dorrach, [25].
SECTION C:	Request for information to identify knowledge codification as applied in UiTM Terengganu. (Questions were adapted from Khalil et al., [18] and Al-Hawari, [26].
SECTION D:	Request for information to identify knowledge sharing as applied in UiTM Terengganu. (Questions were adapted from Khalil et al., [18] and Dorrach, [25].
SECTION E:	Request for information to identify knowledge utilization as applied in UiTM Terengganu. (Questions were adapted from Al-Hawari, [26].
SECTION F:	Request for measurement of quality objectives implementation in UiTM Terengganu.
SECTION G:	Request for level of implementation of knowledge management in UiTM Terengganu.

Primary sources refer to the information obtained from individual, experts and other people. Secondary sources on the other hand, refer to information gathered from the sources that already existed such as internet, journals, magazines and newspaper cutting. The primary data for this study was the information from the respondents, gathered from the questionnaires. The questionnaires in this study contain closed-ended questions using a 5-point Likert scale. The 5-point Likert scale for this study adhered this distribution of values: 5 = Strongly Agree, 4 = Agree, 3 = Undecided, 2 = Disagree, 1 = Strongly Disagree. The seven sections included in the questionnaires are as showed in Table 1.

Data Analysis: The data collection in the study was analyzed using the Statistical Package for Social Sciences (SPSS). The analysis involved descriptive statistics which include frequency, mean and standard deviation. In addition, the findings of the study and presentation of the data were supported with the illustration of tables. The data was also analyzed by using Pearson Correlation to identify the relationship and to test hypotheses between variables.

RESULTS AND DISCUSSION

Questionnaires were personally distributed to 186 academic staffs in UiTM Terengganu. From 186 questionnaires distributed, 108 were returned. However, out of the 108 returned questionnaires, only 100 were usable for analysis and therefore, the effective response rate was about 54%. Table 2 below shows the details.

Table 3 illustrates the descriptive statistical analysis for knowledge management practices (KMP) study variables namely the Knowledge Generation, Knowledge Codification, Knowledge Sharing and Knowledge Utilization. The analysis of descriptive statistics comprises of the minimum, maximum, mean and standard deviation. The mean and standard deviation as stated by Sekaran [24] is used in this study, the mean is a measure of central tendency that offers a general picture of the data without unnecessarily inundating one with each of the observations in a data set. Meanwhile, the standard deviation is another measure of dispersion for interval and ratio scaled data and it offers an index of the spread of a distribution or the variability in the data.

Table 2: Rate of Survey Return in Actual Study

Academic Staff	No. of Questionnaires Distributed	No. of Questionnaires Collected	No. of Questionnaires Unusable	Total of Questionnaires Usable (Percentage of respond rate)
Female	125	67	3	64
Male	61	41	5	36
Total	186	108	8	100(54%)

*78 questionnaires not returned at all

Table 3: Descriptive Statistics of Knowledge Management Practices (n=100)

Knowledge Management Practices	N	Min	Max	M	SD
Knowledge Generation	100	2	5	3.81	.496
Knowledge Codification	100	2	5	3.78	.500
Knowledge Sharing	100	3	5	3.79	.480
Knowledge Utilization	100	2	5	3.84	.561
Overall Knowledge Management Practices	100	2	5	3.81	.458

Table 4: Correlation of Knowledge Management Practices and Academic Performance (n=100)

		KMP	KG	KC	KS	KU
Quality Objectives	Pearson Correlation	.673**	.578**	.616**	.624**	.602**
	Sig. (1-tailed)	.000	.000	.000	.000	.000
	N	100	100	100	100	100

As shown in the Table 3, the mean scores for the four KMPs namely, Knowledge Generation, Knowledge Codification, Knowledge Sharing and Knowledge Utilization range from 3.79 to 3.84. On the other hand, the standard deviation scores for all the practices of knowledge management range from 0.46 to 0.56. The findings described that the mean ratings for each of the practices in descending order from high to low were the Knowledge Utilization ($M = 3.84$, $SD = 0.561$), Knowledge Generation ($M = 3.81$, $SD = .496$), Knowledge Sharing ($M = 3.79$, $SD = 0.480$) and Knowledge Codification ($M = 3.79$, $SD = 0.500$). The overall knowledge management practices was ($M = 3.81$, $SD = 0.458$).

The relationship between knowledge management practices and academic performance was investigated using Pearson product-moment correlation coefficient (r). The Bivariate correlation was subjected to one-tailed test of significance from two difference levels. Table 4 presents the relationship between knowledge management practices and academic performance. Table 4 indicates that the knowledge management practices (KMP) significantly and positively correlated with academic performance ($r = 0.673$, $p < 0.01$). This result is similar to the studies done by Zack *et al*. [27] who found KM practices were to be directly related to organizational performance. Meanwhile, the correlation between the four KMPs namely Knowledge Generation, Knowledge Codification, Knowledge Sharing and Knowledge Utilization were also significantly and positively correlated with one another as well as with academic performance.

From the table also, it is found that there is positive and significant relationship between Knowledge Generation and academic performance ($r = 0.578$, $p < 0.01$). The relationship between Knowledge Codification is also positive and significant with academic performance ($r = 0.616$, $p < 0.01$). Apart from that, Table 4 also shows that there is a positive and significant relationship between Knowledge Sharing and academic performance ($r = 0.624$, $p < 0.01$). Lastly, Table 4 shows Knowledge Utilization significantly and positively related with academic performance ($r = 0.602$, $p > 0.01$). Therefore, the relationship between knowledge management practices and academic performance can be established.

CONCLUSION

This study found that all of the four of knowledge management practices were emphasized in UiTM Terengganu. The mean score values for the four practices were in the range from 3.78 to 3.84. Knowledge Utilization ($M = 3.84$, $SD = 0.561$) was found to be the most practice emphasized compared with Knowledge Generation, Knowledge Sharing and Knowledge Codification in UiTM Terengganu. Therefore, it can be concluded that most of the academic staffs perceived practice knowledge utilization within their organization. Also, it was disclosed that knowledge management practices have positive and significant relationship with academic performance ($r = 0.673$, $p < 0.01$). The existence of the relationship between knowledge management practices and academic performance shows the better practices made the more it will enhance the academic performance. Thus, in order to achieve higher academic performance, UiTM Terengganu has to ensure that the knowledge management practices are excellent.

UiTM Terengganu can achieve high impact on academic performance if it emphasizes effective knowledge managment practices. As for example, improvement may involve the execution of knowledge management practices namely, Knowledge Generation, Knowledge Codification, Knowledge Sharing and Knowledge Utilization. Results showed that all practices had positive and significant relationships with academic performance.

REFERENCES

1. Smith, H.A., J.D. McKeen and S. Singh, 2006. Making knowledge work: five principles for action-oriented knowledge management. Knowledge Management Research & Practice, 4: 116-124.
2. Pfeffer, J. and R. Sutton, 1999. Knowing 'what' to do is not enough: turning knowledge into action. California Management Review, 42(1): 83-108.
3. Kaweevisultrakul, C. and P. Chan, 2007. Impact of Cultural Barriers on Knowledge Management Implementation: Evidence from Thailand. J. American Academy of Business, 11(1): 303.

4. Keskin, H., 2005. The Relationships Between Explicit and Tacit Oriented KM Strategy and Firm Performance. J. American Academy of Business Cambridge, 7(1): 169-175.

5. Gorelick, C. and B. Tantawy-Monsou, 2005. For performance through learning, knowledge management is the critical practice. The Learning Organization, 12(2): 125.

6. De Long, D. and L. Pahey, 2000. Diagnosing Cultural Barriers to Knowledge Management. The Academy of Management Executive, 14(4): 113-127.

7. Choi, B. and H. Lee, 2003. An Empirical Investigation of KM Styles and Their Effect on Corporate Performance. Information & Management, 40(5): 403-417.

8. Euker, T.R., 2007. Understanding the Impact of Tacit Knowledge Loss. Knowledge Management Review, 10(1).

9. Badruddin A. Rahman, 2004. Knowledge Management Initiatives: Exploratory Study in Malaysia. J. American Academy of Business, 4(1/2): 330.

10. Perez, J.R. and P.O. Pablos, 2003. KM and Organizational Competitiveness: A Framework for Human Capital Analysis. J. Knowledge Management, pp: 82-91.

11. Marques, D.P. and F.J.G. Simon, 2006. The effect of knowledge management practices on firm performance. J. Knowledge Management, 10(3): 143-156.

12. Baskerville, R. and A. Dulipovici, 2006. The theoretical foundation of knowledge management. Knowledge Management Research and Practice, 4: 83-105.

13. Wickramasinghe, N., 2006. Knowledge Creation: Process of Knowledge Management. Hershey, PA: Idea Group Publishing.

14. Markus, L., 2001. Toward a theory of knowledge reuse: Types of knowledge reuse situations and factors in reuse success. Journal of Management Information Systems, 18(1): 57-93.

15. Alavi, M. and D. Leidner, 2001. Review: Knowledge management and knowledge management systems: Conceptual foundations and research issues. MIS Quarterly, 25(1): 107-136.

16. Davernport, T. and Prusak, 1998. Working Knowledge: How Organizations Manage What They Know. Boston: Harvard Business School Press.

17. Zaim, H., E. Tatoglu and S. Zaim, 2007. Performance of knowledge management practices: a causal analysis. J. Knowledge Management, 11(6): 54-67.

18. Khalil, O., A. Claudio and A. Seliem, 2006. Knowledge Management: The Case of the Acushnet Company. S.A.M. Advanced Management J., 71(3): 34.

19. Egbu, C.O., S. Hari and S.H. Renukappa, 2005. Knowledge management for sustainable competitiveness in small and medium surveying practices. Structural Survey, 23(1): 7-21.

20. Hussain, F., C. Lucas and M.A. Ali, 2004. Managing Knowledge Effectively. J. Knowledge Management Practice.

21. Taylor, E.Z., 2006. The Effect of Incentives on Knowledge Sharing in Computer-Mediated Communication: An Experimental Investigation. J. Information Systems, 20(1): 103-116.

22. Jamaliah Abdul Hamid, 2008. Knowledge strategies of school administrators and teachers. International J. Education Management, 22(3): 259-268.

23. Mills, A.M. and T.A. Smith, 2011. Knowledge management and organizational performance: a decomposed view. J. Knowledge Management, 15(1): 156-171.

24. Sekaran, U., 2006. Research Methods for Business: A Skill Building Approach. 4th ed. New Delhi: Sharada Offset Press.

25. Dorrach, J., 2003. Developing a measure of knowledge management behaviors and practices. J. Knowledge Management, 7(5): 41-54.

26. Al-Hawari, M., 2004. Knowledge management styles and performance: a knowledge space model from theoretical and empirical perspectives, from http://ro.uow.edu.au/theses/243.

27. Zack, M., J. McKeen and S. Singh, 2009. Knowledge management and organizational performance: an exploratory analysis. J. Knowledge Management, 13(6): 392-409.