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School of Management and Information Systems, Victoria University, Australia
Roshayu.Mohamad@aeu.edu.my; Arthur.Tatnall@vu.edu.au

Abstract. Knowledge management is important to both business and government organisations as a means of improving their operations. This research project investigated cultural factors affecting knowledge management in higher education administrative departments in Malaysia. It considered strategic decisions made by university administrations and adoption decisions made by individual staff members. As the study was conducted in the South-East Asia region, organisational culture in this region is important. The paper describes the factors found to affect the practice of knowledge management in higher education in Malaysia.

Keywords. Knowledge management practices; organisational culture; Malaysia; higher education administration.

1   Introduction

The use of Knowledge management practices is widely considered to be a way to enhance organisational performance in business, government and other organisations. The research project described in this paper investigated cultural factors affecting knowledge management in higher education administrative departments in Malaysia. The concept of knowledge management is not new, and has been well known in Malaysia for over a decade, but in Malaysia the use of knowledge management techniques must be considered to be still in the developmental stage.

This paper investigates the strategies and innovation factors behind all these adoption decisions – strategic decisions made by the university administration and adoption decisions made by individual staff members. Following the university adoption decisions, we will consider whether complete adoption of this technology by individual administrators necessarily follows.

2   Knowledge management: data, information and knowledge

Most authors in the knowledge management literature define knowledge by differentiating it in meaning from data and information. Data widely refers to the raw facts and numbers [1, 2], while information is looked upon as data put into context or processed data [1, 3] that can reside within computers. Bhatt [2] regards knowledge as

an organised set of data – information that is combined with experience and judgment will then become knowledge.

Knowledge is authenticated information [1] and refers to the understanding, awareness or familiarity acquired through study, investigation, observation or experience over time [3] and acts as a basic foundation of the information a person needs to perform a task [4]. According to Alavi and Leidner [1] knowledge is also personalised information that is related to facts, procedures, concepts, interpretations, ideas, observation and judgment that is possessed in the mind of individuals. McMurray [5] defines knowledge as the mixture of experience, values, expert and contextual information that helps the people or organisation in the evolution and absorption of new experience.

Knowledge is rooted in philosophy, which traditionally distinguishes three types of knowledge: 'knowing how' refers to the skills one develops and, most of the time, is tacit in nature; 'knowing that' resembles information since it is de-contextualised; and 'knowing things' refers to the knowledge of acquaintance [6]. Knowledge is also categorised as declarative, procedural, causal, conditional and relational knowledge [1]. However, the most commonly used taxonomies in literature are Polanyi's [7, 8] and Nonaka's [9] dimensions of tacit and explicit knowledge. Nonaka [9] and Nonaka and Takeuchi [10] argued that knowledge is created through conversion between tacit and explicit knowledge through the process of socialisation, externalisation, internalisation and combination. This knowledge concept comprises epistemological and ontological dimensions.

In organisations, knowledge resides in many different places such as databases, knowledge bases, filing cabinets and people's heads and is distributed right across the enterprise. Too often one part of an enterprise repeats work of another part simply because it is impossible to keep track of, and make use of, knowledge in other parts of the organisation. Organisations need to know what their knowledge assets are, and how to manage and make use of these assets in order to get a maximum return. This is where knowledge management concepts play an important role in organisations.

Two types of knowledge are involved in higher educational settings: academic knowledge and organisational knowledge. Academic knowledge is the primary purpose of higher education, while organisational knowledge refers to knowledge of the overall business of an institution, its strength and weaknesses, the market it serves and the factors critical to organisational success [11].

Knowledge management (KM) concepts are gaining acceptance in the field of education [12]. As in business concerns, Higher Education Institutions (HEI) have also realised the need to gain competitive advantage due to stiff competition and pressure to face globalisation. With the growing interest of KM in education, numerous studies have been conducted to examine KM issues in a wider context. Research in KM implementation for HEI has just recently attracted the attention of researchers [13], and has been rather limited especially in the South-East Asian region [14, 15]

A study conducted by Davenport et al. [16] identified four types of objectives for knowledge management practices in organisations. These objectives have been widely referred to in the literature of KM implementation for higher education such as in Thorn [17]. They are:
- To create knowledge repositories.

- To improve knowledge access.
- To enhance the knowledge environment.
- To manage knowledge as an asset.

2.1 Organisational Culture

Organisational culture has been identified as a critical success factor for knowledge management, however, there is little research conducted to understand how organisational culture contributes to knowledge management practices. Hofstede [18] argues that the organisation's culture is nested within a national culture and therefore the national culture influences human resource practices and organisational behaviour. However, studies by Magnier-Watanabe and Senoo [19] show that organisational characteristics are factors that affect knowledge management practices in organisations more strongly than national culture. Based on this argument, the focus of this research was on the culture from an organisational characteristics perspective and not in terms of the national culture.

This study was conducted in the South-East Asia region and organisational culture in this region is important. Countries' independence from British rule is often marked by a passive management culture borrowed from the British colonial era [20] and public sector organisations of these countries are often bureaucratic, centralised and non-responsive to customer need.

2.2 Innovation in Knowledge Management

Innovation can be described as a pervasive attitude that allows business to see beyond the present and create the future and therefore becomes the key driver of the organization's ability to change [21]. In this context it is important to understand what is meant by innovativeness and the innovative culture of an organization. Firm innovativeness is defined as an openness to new ideas as an aspect of a firm's culture [22]. It is conceptualised from two perspectives:
1) viewing it as a behavioural variable, which refers to the rate of adoption of innovations by the firm; and
2) viewing it as an organization's willingness to change [23]. It is also important that a creative environment backs up the organizational attitude and takes actions people are comfortable with [21], which constitute the cultural element of the organization.

2.3 Knowledge Management in Higher Education

Knowledge management is still considered in its infancy in Malaysia [24]. Studies conducted in the area of Higher Education in Malaysia are sparse. This research narrows down to the organisational cultural aspects and intends to investigate the

adoption of knowledge management practices in higher educational administrative departments from the perspective of organisational culture, so it is important to understand the unique culture of an academic environment.

3   Conceptual framework

Many studies have linked organizational cultures as a pre-requisite for effective knowledge management. Scholars and practitioners believe that supportive and adaptive organizational culture enables the successful implementation of knowledge management practices in organizations [25]. This paper studies the extent to which the cultural factors in organizations affect their knowledge management practices. Based on the literature, this study adopts a conceptual framework involving the following seven cultural factors (see Figure 1):

1. Willingness to share knowledge.
2. Co-operation amongst organizational members.
3. Involvement and participatory culture which includes open communication channels, encouragement of participation, involvement in decision making and encouragement for sharing information.
4. The need of high-level of trust in organizations and among employees.
5. The need of a culture that encourages problem seeking and solving which will encourage employees to look for problems as a way to improve the organization and to embrace the capacity to learn from failure.
6. Adaptability or capability to absorb internal change in response to external conditions.
7. Sense of mission and vision which influences the organization by providing purpose and meaning as to why the work is important, and defines the appropriate course of action for the organization and its members.

4   Research methodology

This study used a mixed methods research approach. In the qualitative phase, interviews were conducted with participants from higher education administration in five Malaysian universities. From these, and from studies from the literature, a conceptual model was developed to show the effect of cultural factors on knowledge management practices in higher education administration: knowledge sharing; cooperation, involvement and participation; trust; problem seeking and solving; adaptability to change; and sense of vision and mission. The quantitative phase then used questionnaires distributed to university administrative staff and managers to investigate how these factors affect each other and how they affect KM implementation.

The data collected from the key informant interviews conducted has been transcribed and analysed using content analysis and categorisation processes to bring to the surface the culture elements or areas discussed during the interviews. The results from this analysis were used to develop web-based questionnaires to be used for the

second phase of the study. The second phase of data collection (quantitative data) started by sending emails to the administrative staff and managers from the chosen HEI requesting their participation in the survey. The data collected from the web-based questionnaires was then analysed using the Partial Least Square (PLS) method and PLS software to test and estimate causal relationships using a combination of statistical data and qualitative causal assumptions.
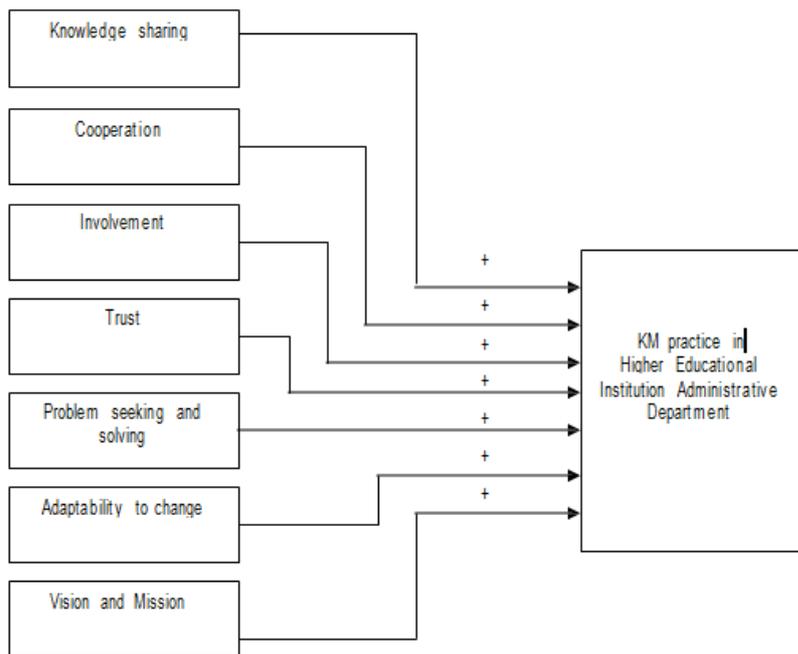

Figure 1. Conceptual framework to study the effect of cultural factors on KM practice in HEI administrative departments.

The following were the research questions:
- What is the perception of administrative managers and staff in Malaysian public universities on viewing KM as an innovation?
- What is the state of KM implementation in the administrative departments of the public universities in Malaysia?
- Are cultural factors such as knowledge sharing culture, cooperative culture, involvement and participation culture, trust culture, problem seeking and solving culture, adaptability to change culture, and the sense of vision and mission perceived as affecting KM practices in the administrative department of the public universities in Malaysia?
- Do these cultural factors affect the KM practices in the administrative departments of the public universities in Malaysia?

5 Research Findings

Out of 20 public universities in Malaysia, 6 universities are included in the qualitative study phase, and 10 universities are included in the quantitative study phase. A total of 22 respondents were contacted for the interview sessions with 12 agreeing and providing useful answers (54.5%). The data collection for the quantitative stage took place over 2 months and participant lists were obtained directly from the university's human resource department. A total of 1,000 participants were contacted, resulting in 351 useful responses (35.1%). Three hundred and sixteen participants answered the Bahasa Malaysia survey, while 35 participants answered the English survey.

5.1 Findings from the qualitative study

Knowledge management practices in Malaysian HEI administrative departments: Respondents viewed KM implementation as a way to manage organisational knowledge in order to achieve business excellence. Most commented that the knowledge management practices in their administrative departments are in the developmental stage with a lot of opportunities for improvement. As one respondent said:

> "… later data can be retrieved for the right purpose, at the right time and for the right source …"

Behaviour and support towards knowledge management as an innovation: Findings from the interviews reveal that three out of five universities have already been implementing knowledge management for quite some time and are in the stage of strengthening their practices. On the other hand, the findings from one university showed that their staff are unaware of the existence of such practice. One respondent indicated that "*knowledge management is a difficult new thing*".

Knowledge sharing culture: Knowledge sharing culture does exist in university administrative departments but it was stated by some respondents that this culture only occurs among staff within the same group level and the same department. This is particularly true when dealing with tacit knowledge or staff experiences of knowledge in performing jobs specific to their expertise. Partial knowledge-sharing does occurs in these institutions and some individuals also engage in knowledge sharing to the extent that they believe it will be beneficial for them to do so, and that it will not damage their reputation. A typical response was that:

> "I see that everyone is busy doing their own work and did not bother about other people. Sometimes we don't really know what's going on in the campus …"

Co-operative culture: Co-operation ranges from moderate to good among administrative staff in Malaysian universities, but one respondent commented that: *"It depends on individuals: some people are not willing to cooperate with others."* In dealing with cooperation, the majority of the respondents commented on the

importance of the leadership role needed to make cooperation happen. One said that it "*... depends on the leaders who head the particular tasks*". Another also commented that staff are willing to co-operate with people who are willing to co-operate with them: "*given a fair opportunity*". Factors encouraging staff to cooperate include:

- Their understanding of the subject matter.
- Belief that others need to know what they know.
- Their sense of belonging to the unit or department.
- Reward factors.
- Relationships among staff.
- Encouragement based on leader attitude.

Involvement and participation culture: Results from the interviews on involvement and participation culture led to the following observations:

- Some staff regard the involvement and participation culture in their university as being good, with the existence of various tools for staff to participate.
- The involvement and participation culture varies according to staff motivation.
- The involvement and participation culture depends on the leader – whether this person is open minded and willing to accept suggestions from lower-level staff.

Trust culture. The majority of the respondents rated trust culture in HEI administrative departments as good to high. One of the respondents also noted that willingness to help others depended on the social relationship with these people. Two of the respondents also related trust with cooperation: "*... trust and cooperation come together*" and "*... trust leads to cooperation among staff*".

Problem seeking and solving culture: It was observed that problem solving cultures do exist in the administrative departments of Malaysian universities and that: "*... post mortem, root cause analysis does exist ...*" and that "*... there is a system here ... where people will meet in order to find solutions for some kind of problems that arise ... whoever can come out with the solution will be rewarded [by the university].*"

Adaptability to change: Comfort or familiarity with what people already practice may be a factor in people's reluctance to change. In most situations management has to make some practice or implementation compulsory in order to make people change their current practice or adopt a new one.

Sense of vision and mission: Results from the interviews showed that administrative staff in Malaysian universities are aware of their institutions' vision and mission. However, it was observed that staff support toward the organisational vision and mission varies.

Other emerging factors:

- **Leadership**. Throughout the interviews comments on leadership issues arose from participants in each university involved in this study. One

respondent said: *"What makes people contribute, I think is the administrator. I always believe that the leader is the most important person."*

- **Technology.** It was observed that at the beginning of the interview sessions most respondents linked their understanding of knowledge management practices with the existing technologies they have available for storing and retrieving information and knowledge. Comments included:

    "I think culture has to be supported by the technology. People must practice knowledge management through technology … Culture alone is not enough, especially in our traditional culture … I think, since our university is technology oriented, that is what makes our movement towards knowledge management is faster compared to other university."

- **Language.** The majority of public university staff in Malaysia are Malay and are using Bahasa Malaysia as their medium of communication. There were a few respondents who indicated that language became a barrier for staff to support knowledge management. The most common statement was that language became a barrier to communication and a barrier to understanding.

- **Religion.** Interview findings showed that few respondents associate the necessity to share and distribute knowledge in their organisation with religious factors. Since most Malaysian public universities staff are Malays whose religion is Islam, they relate existing practices with their religion. A few respondents indicated that knowledge is a fundamental principle of Islam and added that distributing and sharing knowledge is a good deed promoted by their religion and that the act of storytelling was also demonstrated in their religion.

5.2   Findings from the Quantitative Study

The result from the PLS analysis revealed relational details about the seven factors investigated: knowledge sharing, cooperation, problem seeking and solving, involvement and participation, trust, adaptability to change, and, vision and mission do not directly influence knowledge management practices in higher educational administration in Malaysia. Space restrictions mean that it is not possible in this paper to give full details of the results of the qualitative study, but it was shown that the following factors do affect each other in knowledge management implementation:

- That involvement and participation affect knowledge sharing in higher education administration.
- That involvement and participation affect problem seeking and solving in higher education administration.
- That trust affects adaptability to change in higher education administration.
- That trust affects cooperation in higher education administration.
- That vision and mission affect trust in higher education administration.
- That vision and mission affect cooperation in higher education administration.
- That co-operation affects knowledge sharing in higher education administration.

6   Conclusion

The study shows that the seven indicated factors: knowledge sharing, cooperation, involvement, adaptability to change, trust, problem seeking and solving, and vision and mission do not have a direct impact on KM practice in university administration in Malaysia, but that some factors do affect one another. The research suggests that leadership and available technology are the most important concerns of the participants when knowledge management practice is discussed, and that language and religions might also have an effect on KM practice in Malaysia. It is also interesting to see that reward factors, which were indicated as one of the factors that might affect KM practices, were found in this study not to be a reliable measure. This research was confined to Malaysian universities but this then opens up more possibilities for future research on knowledge management implementation in higher educational administration in other countries.

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