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"Factors and Variables Affecting the Adoption and Practice of Knowledge Management: An Exploratory Study in the Life Insurance Companies in Taiwan"

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Factors and Variables Affecting the Adoption and Practice of Knowledge Management: an Exploratory Study in the Life Insurance Companies in Taiwan

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Abstract—Knowledge management (KM) is crucial for organizations to enhance their competitive advantages. While KM has been used and operated in the business world for decades, its applications, which involve recognition of knowledge, development of information system and support of organization, have just been initiated in Taiwan life insurance industry recently. Accordingly, KM can be seen as an innovation for the life insurance companies in Taiwan. The issues of KM have been discussed widely by a number of researchers. However, there is a genuine lack of KM adoption and practice model in the life insurance industry. This paper attempts to investigate the factors and variables in the context of life insurance companies in Taiwan. An exploratory study is undertaken by conducting interviews with ten participants, who represent different positions in six life insurance companies which vary in backgrounds and stages of KM applications. Content analysis is used to identify the factors and variables and a comprehensive model of KM adoption and practice is thus developed. The life insurance industry in Taiwan has been facing tremendous competitive pressure attributable in part, to globalization trend. This study offers a model for future KM research in the life insurance industry and provides managerial implications particularly for those life insurance companies embarking on KM in Taiwan.

Keywords: Knowledge Management; Innovation; Content Analysis; Life Insurance

1. Introduction

It is "knowledge" that will replace natural resources, capital and labour as the basic resource from which to generate economic wealth in the post-industrial society (Drucker, 1993). Treating knowledge as a significant organizational resource, studies in the area of knowledge management have grown dramatically over the last decade (Feng, Chen & Liou, 2004; Hislop, Newell, Scarborough & Swan, 2000). Particularly, knowledge management has become the focal point for debates on mechanisms to facilitate firms acquiring greater competitive edge in the emerging global information economy (Clarke & Turner, 2004). Thus, according to Carlsson (2001, p. 195), knowledge management in this study is defined as follows: "Knowledge Management is the process of identifying, managing and leveraging individual and collective knowledge to support the firm becoming more competitive."

The definition highlights the primary components of knowledge management in the increasingly competitive

world. Firstly, both individual and collective knowledge should be identified. Secondly, knowledge management involves the process of collecting and integrating the knowledge. Thirdly, knowledge management is mainly anticipated to increase competitiveness.

This study investigated the research questions above in the context of six life insurance companies in Taiwan. A conceptual framework was suggested based on the extensive literature on innovation diffusion, the technology acceptance model and the theory of reasoned action. Utilizing semi-structured interview techniques, ten in-depth interviews were conducted to collect the data to develop a comprehensive model. This paper attempts to answer the research questions via the following research objectives:

- (1) To identify the factors and variables for or against KM adoption and practice in the life insurance companies in Taiwan.
- (2) To examine how the factors and variables affect KM adoption and practice in this context.

The next section introduces the literature on KM and relevant background theories. This is followed by research method in section 3, which describes the processes of data collection and data analysis approach by using content analysis. Emanating from the data, section 4 presents the results of this study revealing the main factors and variables affecting the adoption and practice of knowledge management in the life insurance companies. A comprehensive model of knowledge management adoption and practice is thus emerged from the exploratory study. Finally, section 5 concludes with future directions for research in this field within the Taiwan context.

2. Background

The life insurance industry has been growing greatly and played a significant role in the financial industry in Taiwan. The population of household registered in Taiwan up to 2005 is 22.770 million, and the ratio of life insurance policies to population is 176.13 %. The income from premiums of Taiwan life insurance industry in 2004 was US\$ 33,851 million and ranked top 9 globally. Due to the enormity of premium income, which is predominantly from the general public, and the associated social responsibility, the life insurance companies aims at providing better professional knowledge and service to achieve superseding competitive advantages.

2.1 Knowledge and knowledge management

Knowledge is a fluid of framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information (Davenport & Prusak, 1998). Moreover, Alavi and Leidner (2001) emphasize that knowledge is distinct from data and information since data is fact and raw number, information is processed data, and knowledge is personalised information. For an organization, knowledge has the following characteristics: (i) it is intangible and difficult to measure; (ii) it is volatile; (iii) it is embodied in agents with wills; (iv) it is not "consumed" in process and it sometimes increases through use; (v) it has wide ranging impacts in organizations; and (vi) it cannot be bought on the market at any time as it often has long lead times (Wiig, de Hodg & van der Spek, 1997).

Knowledge management has been investigated extensively in various areas (Hung, 2004). Nevertheless, little attention has been devoted to comprehensive studies of knowledge management in the life insurance companies in Taiwan. Thus, this study attempts to investigate the acceptance and practice of knowledge management in Taiwan life insurance companies by exploring the associated factors and variables.

2.2 Innovation diffusion and related theoretical background

According to Rogers (1995), an innovation is defined as an idea, practice, or object that is perceived as new by an individual or another unit of adoption. In this study, the innovation refers to knowledge management for the life insurance companies and their employees. There are five characteristics of innovations as follows: (i) relative advantage: how an innovation is perceived as better than the idea it supersedes; (ii) compatibility: how an innovation is seen consistent with the values, experiences and need of potential adopters; (iii) complexity: the difficulty of understanding and using the innovation; (iv) trialability: the degree to which an innovation may be experimented with on a limited basis; and (v) observability: the ability to have the results of an innovation visible to others.

Innovation diffusion has drawn much attention of researchers in several areas, such as new information technology, electronic data interchange and internet (Baptista, 1999; Carter, Jambulingam, Gupta & Melone, 2001; McGowan & Madey 1998; Wolcott, Press, McHenry, Goodman & Foster, 2001). However, there is little literature found on the adoption and use of knowledge management in the life insurance domain. Yang (2004) suggested that the concepts and applications of innovation should be adopted by Taiwan life insurance industry in promoting knowledge management to create more business value. Thus, this study lays emphasis on the adoption and diffusion of innovation to develop a knowledge management model for the life insurance companies in Taiwan.

This study attempts to understand why people reject or adopt knowledge management, and the life insurance companies in Taiwan have put most of their efforts on information system in having knowledge management into place (Yang, 2004). Therefore, the literature indicates that it is plausible that 'theory of reasoned action' (TRA) and the 'technology acceptance model' (TAM) may enlighten our understanding of this phenomenon in this study.

Extending from the TRA, Davis (1986) introduced the technology acceptance model (TAM). In TAM, the behavior intention to use technology is determined by two beliefs: perceived usefulness (PU) and perceived ease of use (PEOU). PU refers to the degree to which a person believes that using a particular system would enhance his or her job performance, while PEOU refers to the degree to which a person believes that using a particular system would be free of effort (Davis, 1989). Davis, Bagozzi and Warshaw (1992) expanded TAM to suggest that an individual's intention to use computers is influenced by extrinsic motivations, perceiving an activity to be instrumental in achieving valued outcomes, and intrinsic motivations, which refers to the performance of an activity for no apparent reinforcement other than the process of performing the activity perse.

2.3 Conceptual framework

There is abundant literature on the adoption and diffusion of innovations (Nakicenovic & Grubler, 1991; Norton, 1987; Quaddus & Intrapairot, 2001; Rogers, 1995; Xu, 2003). Applications range from administrative innovation diffusion (Teece, 1980) to the diffusion of electronic commerce (Kendall, Tung, Chua, Ng & Tang, 2001). Previous innovation studies have identified a number of factors which affect the adoption and diffusion of innovations (Agarwal & Prasad, 1998, 2000; Belassi & Fadlalla, 1998; Liu, 2004). Most of the innovation research also uses the theory of reasoned action (Ajzen & Fishbein, 1980) and the technology acceptance model (Davis, 1986, 1989). Accordingly, this study postulates that, some external factors influence the employees' perceptions, which in turn affect their attitudes toward KM adoption, and the practice of knowledge would be influenced by such attitudes and have impact on the perceived performance for the organization.

3. Research method

3.1 Sample selection

There are currently twenty-two local life insurance companies and seven foreign life insurance companies operating in Taiwan. Among the twenty-nine life insurance companies in Taiwan, ten interviewees (including managers and staffs from six life insurance companies with varied backgrounds and stages of knowledge management applications), were invited to participate in the exploratory study. All the participants took part in this research on a voluntary basis and represented different individual background, such as

position, tenure and gender.

3.2 Data collection

The data was collected by using the semi-structured interview approach. An interview protocol was designed based on the conceptual framework. The semi-structure interview protocol aimed at exploring the factors and variables affecting the adoption and practice of knowledge management in the life insurance enterprises. Development of the interview schedule followed the guidelines proposed by Berg (2004).

The pre-test was conducted using the guiding semi-structured questions to interview the first respondent. With minor adjustments made based on the feedbacks from the pre-test, the interview questions proved to be working well in achieving the research objectives of this study. Ten interviews in total were conducted in this exploratory study. In four companies, two interviewees were allowed from each company to take part in this study to provide more fruitful details. The tacit knowledge derived from initial interviews was of such in-depth quality that it facilitated the refinement of the interview protocol and sharpened research directions. The interviews were audio taped whenever possible and field notes were immediately documented within three days in Taiwan so as not to lose the vital nuance and cues observed. The taped interviews were transcribed and rigorously reviewed for errors by the researcher. Tapes were carefully listened to following Strauss and Corbin (1990), and corrections made.

3.3 Data analysis

Content analysis is used to analyze the interview transcripts in this study. Interviews and field notes are often not amenable analyses until the information they convey has been condensed. An objective coding scheme was applied to interpret the interview transcripts and field notes. This study utilizes the approach of "content analysis" for two main reasons. Firstly, the nature of this study is more exploratory than confirmatory. Secondly, content analysis is cost-effective and useful in analyzing interview data (Berg, 2004).

The second stage of content analysis dealt with cross interview transcripts, and aimed at the integration of all the individual factors, variables and linkages from all interviews, in order to develop the comprehensive model of knowledge management adoption and practice in the context of life insurance companies in Taiwan.

4. Results

4.1 Background information

Table 1 provides the background information of the companies involved in this research. There are one foreign life insurance company, two local life insurance companies, and three local life insurance companies with foreign capital, of which some are new entrants while others are existing companies established for decades.

The number of employees in the companies ranges from 300 to over 3000. All companies are involved in varied stages of KM adoption and practice. The interviewees' positions vary from department manager to general staff and their tenures

range from 4 years to 22 years. There are five female and five male participants in this study. The interviews took up to 1.75 hours according to the participants' working schedules.

4.2 Factors and variables of KM adoption and practice

Twelve factors and ninety-two variables were identified from these companies using extensive content analyses as stated earlier. The factors and variables are labeled according to the literature (Alavi & Leidner, 1999, 2001; Ajzen & Fishbein, 1980; Belassi & Fadlalla, 1998; Davis, 1986, 1989; Gold, Malhotra & Segar, 2001; Holsapple & Joshi, 2000; Rogers, 1995; Venkatesh et al., 2003). Nevertheless, unlike previous studies, the variables gathered in each factor and their meanings are unique in the context of KM adoption and practice in Taiwan life insurance companies. The factors and variables of KM adoption and practice are presented in Table 2.

All companies recognize the twelve factors. Out of the ninety-two variables, the seven variables confirmed by all companies are: hardware infrastructure, software infrastructure, KM manager, top management support, vision, value and objective, time saving, as well as attitude toward KM adoption. In the meantime, twenty-one variables are declared by more than four companies. Most of the companies propose that a person's work attitude will influence the person's perception regarding knowledge management. Having the KM team, taking the appropriate strategy and policy, as well as creating a culture of trust and commitment are also important to have KM into place. Although the variables of "high development of IT" and "use of a great amount of paper" are only mentioned by one company, they might be specific for the life insurance companies and the issues of KM in Taiwan.

In regard with the number of variables provided by the companies, company C, the foreign company which actively promoted KM for years, indicated fifty-five variables; company F, the local company with foreign capital, which applied KM implicitly in the daily work, identified fifty variables; nevertheless, company D, the company which has adopted and applied KM widely for more than five years, only pointed out thirty-five variables. It is interesting to note that, the company which has applied KM to the level that KM becomes a part of the ordinary jobs mentioned the least variables in this study. The reason could be that knowledge management has been deeply embedded in the company's daily operation and a number of problems have been solved in the past few years. Therefore, the employees have been used to the concept and practice of knowledge management, and some concerns regarding the adoption and practice of knowledge

management in other companies would no longer be an issue in this company.

4.3 Comprehensive model

Figure 1 presents the comprehensive model of knowledge management adoption and practice which has been developed based on the conceptual framework as described in Section 2.3 using the factors and variables identified in the exploratory study. Accordingly, this paper suggests that the adoption and practice of knowledge management can be observed as the model of External Factor → Perception → Attitude → KM Practice → Perceived Performance. The framework and the associated factors have been applied effectively in the previous studies for innovation adoption and applications. Moreover, the comprehensive model along with the factors and variables are relatively specific to KM adoption and practice in the context of life insurance companies in Taiwan.

4.4 Research implications

As presented in Figure 1, the comprehensive combined model of KM adoption and practice is particularly unique since it is developed based on both the literature and the data collected from the interviewees of six life insurance companies which vary in their backgrounds. This model can serve as a research model for proposition development and further investigation. For example, a causal modeling technique (Barclay, Higgins & Thompson, 1995) can be conducted to test the model. Alternatively, parts of this model can be examined separately. To illustrate, the role of perceived usefulness can be tested to examine its impact on the adoption and practice of knowledge management; conversely, how the external factors affect complexity can be studied to identify the potential initiatives and obstacles for people to adopt and apply knowledge management in organizations.

This model also indicates the processes and the related activities involved in knowledge management, as well as the perceived performance that the practice of knowledge management is expected to bring for the organization. However, further research is required to investigate the influence of KM practice on the organizational performance.

In terms of managerial implications, the comprehensive model shows a practical mold of knowledge management adoption and practice in the life insurance companies. The

factors and variables are gathered from the real world. As a result, the model is more particular for the life insurance companies in adopting and applying knowledge management. The life insurance companies planning to embark on knowledge management may find this model quite useful in providing the criteria for successfully adopting and applying knowledge management.

5. Conclusions

This study presents an exploratory approach to seek the main factors, variables and linkages of knowledge management adoption and practice. A conceptual framework is suggested initially by literature reviews. Grounded on the conceptual framework, a more extensive research model is developed with the data collected from the exploratory study, which is undertaken by inviting ten interviews from six different life insurance companies. The interviewees are varied in terms of position, tenure and agenda. The companies are at different stages of knowledge management adoption and practice. The interviews were transcribed by the researchers and the contents were analyzed using content analysis approach. The data resonates well with the literature. The results identify twelve factors and ninety-two variables, upon which the comprehensive model is thus developed.

All companies highlight that sufficient hardware and software infrastructure, KM manager, support from top management, vision, value and objective of an organization, as well as attitude toward KM, are imperative in deciding the employees' perceptions of knowledge management. Organizations, particularly the life insurance companies in Taiwan, which attempt to adopt or embark on knowledge management, can look at the variables carefully for managing knowledge effectively.

This study contributes to the KM literature in the sense that it uses a qualitative research approach and develops a comprehensive model. Most of the previous studies on innovation adoption and diffusion are quantitative in nature. However, little research is found exploring the factors and variables of knowledge adoption and practice in the context of life insurance companies. Therefore, this comprehensive research model can be utilized for future studies in examining the adoption and applications of knowledge management in life insurance companies. From the practical perspectives, this study provides a better understanding of the determinant factors and variables of knowledge management in the life insurance enterprises. Life insurance organizations, particularly those life insurance companies in Taiwan, would find this study helpful while making endeavor on knowledge management adoption and practice.

The researchers attempt to further examine the comprehensive model of KM adoption and practice in the future by taking the quantitative research method. A structural equation modelling technique will be used to test the research model and the relevant proposed hypotheses.

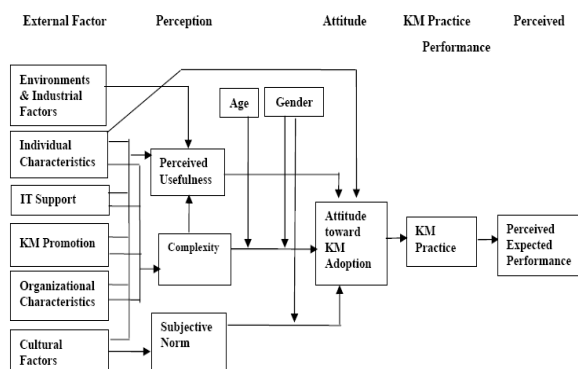


Figure 1: Comprehensive Model of KM Adoption and Practice

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