

UNDERSTANDING THE FACTORS INFLUENCING PHYSICIANS' KNOWLEDGE TRANSFER SUCCESS

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Abstract

Knowledge transfer is critical to successful knowledge management. Based on a sample of 233 physicians, this paper will argue that the mathematical model of knowledge transfer developed by Davenport and Prusak(1998) can provide a framework for knowledge transfer success, and it will explore knowledge transmission and knowledge absorption success factors. The results indicate that source credibility, knowledge quality, ICT tool, experience and perceived benefit affect knowledge transmission success. Additionally, knowledge transmission success, experience, perceived benefit and reward affect knowledge absorption success. Finally, the implications of this study are discussed.

Keywords: Knowledge Transfer, Knowledge Transmission, Knowledge Absorption, Knowledge Management Systems, Social Exchange Theory.

1 INTRODUCTION

From a business point of view knowledge is an important natural resource(Watson & Hewett 2006). Alavi and Leidner (2001) have also pointed out that knowledge assets can generate a long-term competitive advantage. Employee knowledge is one of the key factors to maintain a competitive advantage in business. Thus, it is one of the most popular topics of knowledge management research; how to best utilize and organize the management of staff knowledge (Davenport and Prusak 1998). Most of the previous studies on knowledge management have described knowledge creation, knowledge storage and knowledge sharing. However, knowledge transfer is the most important part of knowledge management processes(Connell et al. 2003). Darr and Kurtzberg (2000) argued that the major aim of knowledge transfer was to have the knowledge contributor willing to share his/her own knowledge, and efficiently transfer it to the knowledge recipient, then the receiver also has the ability to absorb and use that knowledge. Therefore, knowledge transfer could increase organizational innovation and knowledge efficiency(Maurer et al. 2011; Nahapiet & Ghoshal 1998). Medical institutions are long-term and sustainable developments of the industry and have to maintain competitiveness through continuous innovation. In a hospital, the knowledge of the employees is an important asset, and a physician's knowledge is the most valuable, so their aim is to properly manage this knowledge. Of paramount importance is the use of knowledge management systems to effectively transfer physicians' knowledge. Kim (2013) also pointed out the importance of a physician's clinical knowledge through systematic knowledge sharing and utilization. Previous research context of knowledge transfer divided into three categories: type of organization (Williams 2011; Duan et al. 2010), Knowledge generation source (Jane Zaho & Anand 2009) and Knowledge characteristics (Jasimuddin et al. 2012). The principal aim of this study was to explore the knowledge transfer success factors from the physicians' viewpoint. We achieved this by examining the major constructs of the framework (knowledge transfer success= knowledge transmission success + knowledge absorption success), the transmission capacity of knowledge management system (KMS), the physician's absorption capacity and the most critical antecedents. In this study we will attempt to answer the following questions :

- What factors affect the success of knowledge transmission and knowledge absorption?
- To what extent do knowledge transmission and knowledge absorption relate to knowledge transfer success?

Section 2 outlines knowledge transfer success, knowledge transmission success and knowledge absorption success. Section 3 discusses the development of the framework and hypotheses. Section 4 describes the research method. Section 5 discusses the results and their implications for practice and research. The final section discusses the contributions of our research.

2 THEORETICAL FOUNDATIONS

2.1 Knowledge transfer : transmission and absorption

Knowledge transfer is generally considered to be a key factor in the knowledge management process. Knowledge transfer success consists of knowledge transmission and knowledge absorption. Knowledge transfer cannot be successful, if either transmission or absorption is missing. If this is so, there will be a loss of creativity and enterprising performance, so that the company will lack competitiveness. Hence, it is important to understand the definition of knowledge transfer. Scholars have many different interpretations of knowledge transfer. Seminal work on defining knowledge transfer was carried out by Davenport and Prusak (1998), and is still the reference point for virtually all discussions of knowledge transfer in relation to knowledge management. In Davenport and Prusak's (1998) definition, two different components make up the construct of knowledge transfer. The first one is reflected as knowledge transmission; the second is defined as knowledge absorption. As argued by Zhao and Anand (2009), knowledge transfer is a multi-layered process, where organizational capabilities are transferred from one unit to another, the transfer including individually held skills, organizationally embedded knowledge or collective knowledge. Knowledge transfer is called the process which through a group or department affects the experience of another (Argote & Ingram 2000). Sarker et al. (2005) have investigated knowledge transfers between different branches of employees, and proposed four influencing factors of personal knowledge transfer to distant members, including communication, ability, origin and culture. In addition, in the context of information systems development, knowledge transfer was defined as "the information system developing knowledge to be transferred to the designated recipient" by Blackler et al. (2000). Levine and Gilbert (1998) believe that the knowledge transfer process has the following five steps: idea creation, idea sharing, idea evaluation, idea dissemination and idea adoption. As mentioned above, the purpose of a firm is to execute knowledge transfer to enable organizational performance and competitiveness, and various research contexts have found different key factors in the success of knowledge transfer.

2.1.1 Knowledge transmission

Knowledge transmission is defined as "conveying or submitting knowledge to potential users" (Davenport & Prusak 1998). Knowledge transmission success is when the knowledge contributor, through a channel, conveys knowledge to the knowledge recipient and it is accepted. In the process of knowledge transfer, knowledge transmission is a first step, followed by knowledge absorption, and finally a successful knowledge transfer is reached. Comparatively little research has focused on knowledge transmission. However, the communication processes of knowledge transfer from different viewpoints have been discussed extensively in the existing literature. For example, Liyanage et al. (2009) argued that it is the conveyance of knowledge from one place, person or ownership to another. In the business environment, knowledge transfer can occur through many other means such

as oral communication, technological intervention, intermediaries, etc. The paper found that many organizations often cannot find a way to manage knowledge, they may use an inefficient system to identify the right knowledge, or be without the proper way to get the right knowledge. According to Alavi and Leidner (2001), communication between the individual and the information technology can increase knowledge transfer performance. Overall, this body of literature identifies technology as an indispensable element for a variety of industries. In fact, technology seems to be particularly important for the medical industry. At the present time, organizations use information systems to communicate and transfer, therefore, between the contributor and the recipient there is a delivery channel for the transmission of knowledge or information, and this approach promotes the success of knowledge transmission.

2.1.2 Knowledge absorption

According to Malhotra et al. (2005) absorptive capacity is a dynamic capability concerned with knowledge creation and knowledge utilization and it can increase the company's profitability and competitive advantage. Zahra and George (2002) also pointed out that absorptive capacity includes knowledge acquisition, knowledge absorption, knowledge transfer and knowledge utilization. Knowledge acquisition is defined as the ability to identify and acquire knowledge externally generated; such knowledge processes have a crucial impact on the company; a definition of knowledge absorption is the workflow within the company to allow for analysis, processing, interpretation and understanding of the information obtained from external sources (Szulanski 1996) ; a definition of knowledge transformation refers to a company combining existing and newly acquired knowledge, knowledge absorption, to redefine the workflow; this approach is conducive to the development of the company. A definition of knowledge utilization is the transformation of knowledge application in the workflow to enhance the company's competitiveness and innovation. Knowledge absorption success is the ability of a recipient to know the importance and value of externally sourced knowledge, digest it and apply it (Ko et al. 2005). According to Cohen and Levinthal (1990) absorptive capacity was defined as the ability of an organization to recognize the value of new information, assimilate it and apply it to their business. In the process of knowledge transfer, knowledge absorption is the second stage, and after the completion of this step, knowledge transfer is considered as being successful.

2.2 Social Exchange Theory

The social exchange theory originated in the late 1950s, from the transaction compensation cost perspective to explain the behavior of human interaction. Many studies have reported findings about factors that affect knowledge sharing behavior based on the social exchange theory. For example, according to Liang et al. (2008), not only has extensive work been done with individual's knowledge sharing behavior based on the social exchange theory, but an extended model has been developed that includes IT support and organizational types as moderators. Personal, interpersonal and organizational

dimensions have been analysed; personal factors included organizational commitment and perceived benefits; interpersonal factors included social interaction and trust; organizational factors included organizational support and reward systems. According to Chen and Hung (2010), have looked at increasing community knowledge transfers and examined its impact in professional virtual communities. Virtual community members can choose to receive or contribute knowledge, resulting in knowledge exchange behavior which promotes the development of virtual communities. The impact of variables has classified the major factors into two dimensions (environmental effort and individual cognition), where the contextual factors included the norm of reciprocity and interpersonal trust; the individual factors included knowledge sharing self-efficacy, perceived relative advantage and perceived compatibility. As shown in the above literature review, most of the previous studies on knowledge management have described a contributor's knowledge sharing intent and motivation, but not the concept of social exchange as related to knowledge exchange between parties. In knowledge transfer research, researchers need to consider not only the knowledge contributor's perspective but also the role of the knowledge recipient. Therefore, this study aims to explore the knowledge transfer success factor from the point of view of physicians.

3 CONCEPTUAL MODEL AND RESEARCH HYPOTHESES

Figure 1 presents the research model which guided the study. This model was formulated based on Davenport and Prusak's (1998) argument that knowledge transfer = knowledge transmission + knowledge absorption (and use). The factors of knowledge transmission success are knowledge quality, source credibility, ICT infrastructure, ICT tool, experience, perceived benefits and top management support. The factors of knowledge absorption success are experience, perceived benefits and reward. The following sections describe each element of the model in detail, and present the hypotheses relating to them.

3.1 Knowledge characteristics

3.1.1 Knowledge quality

Wu and Wang (2006) found that the knowledge quality of KMS positively affects user satisfaction. Because of its high quality, the knowledge recipient believes that the use of KMS will increase his/her job performance (Kulkarni et al. 2007). Therefore, this study suggests that in using knowledge management systems, physicians will take into account that the receiving of knowledge will be helpful in their work. In general, knowledge quality characteristics affect the extent of knowledge received by physicians. Thus :

H1 : Knowledge quality has a positive effect on knowledge transmission success.

3.1.2 Source credibility

Joshi et al. (2007) believe that knowledge source credibility has an effect on the extent of knowledge

transfer, and that a credible source of knowledge is more likely to affect the behavior of knowledge receiving (Szulanski 1996). Szulanski et al. (2004) also argue that the recipient will be more willing to receive knowledge if they know the source of it. Therefore, this study suggests that knowledge source credibility and contributor reputation have an effect on the extent of knowledge received by physicians. Thus :

H2 : Source credibility has a positive effect on knowledge transmission success.

3.2 Information technology characteristics

3.2.1 Information communication technology (ICT) infrastructure

Syed-Ikhsan and Rowland (2004) showed that ICT infrastructure determines staff knowledge creation, knowledge sharing and knowledge transfer. Ismail and Yusof (2010) illustrated that ICT infrastructure (such as computer, internet, and so on.) have an effect on the knowledge sharing quality. Therefore, this study suggests that the fit of ICT infrastructure has an impact on the extent of knowledge received by physicians. Thus :

H3 : ICT infrastructure has a positive effect on knowledge transmission success.

3.2.2 ICT tool

Teece (2000) illustrated that many companies believe that the use of information technology for knowledge transfer will enhance competitive advantage. Syed-Ikhsan and Rowland (2004) found that the use of ICT tools among members of the organization has positively affected knowledge transfer success. Therefore, this study suggests that the fit of ICT tools has an influence on the extent of knowledge received by physicians. Thus :

H4 : ICT tool has a positive effect on knowledge transmission success.

3.3 Personal characteristics

3.3.1 Experience

Argote et al. (2000) refer to knowledge transfer in organizations as being related to the experience of its personnel (such as individual, group and department). The experiences of their staff determine the future planning and action of the company. Zahra and George (2002) found that a company's past experience of knowledge searching affects the way of new external knowledge searching, and also affects the company's absorption capacity. Therefore, this study suggests that the ability to receive and absorb new knowledge is enhanced, when the physician uses the system to receive knowledge experience, and also has the relevant knowledge background. Thus :

H5a : Experience of knowledge received has a positive effect on knowledge transmission success.

H5b : Experience of knowledge absorption has a positive effect on knowledge absorption success.

3.3.2 Perceived benefit

Davenport and Prusak (1998) consider that knowledge-transfer behavior may be motivated by perceived benefits. Based on their research of meta-analysis, Linag et al. (2008) argued that perceived benefits could have a positive effect on knowledge-sharing behavior. The above findings are based on a knowledge contributor's perspective, so in view of the knowledge recipient, this study suggests that if physicians believe the knowledge will help their work, or enhance their professional capacity, they will usually take the initiative to receive knowledge, absorb it and use it. Thus :

H6a : Perceived benefit has a positive effect on knowledge transmission success.

H6b : Perceived benefit has a positive effect on knowledge absorption success.

3.4 Organizational characteristics

3.4.1 Reward

Kankanhalli et al. (2005) illustrated that an organization can provide various types of rewards, such as salary increases, bonuses, job security and promotion, etc., in order to encourage the use of an electronic repository of knowledge contributors. It can also be structured specifically for an individual's work performance or for group work (Taylor 2006). Therefore, this study suggests that incentives provided by the hospitals can motivate physicians and also help their absorption and utilization of knowledge, thus making for better work performance. Thus :

H7 : Reward has a positive effect on knowledge absorption success.

3.4.2 Top management support

Top management support is an important factor in influencing information system acceptance and producing benefits (Ragu-Nathan et al. 2004). In knowledge management research, top management support is also a significant factor in encouraging staff members to contribute their knowledge (Sanders & Courtney 1985). O'Dell and Grayson (1998) point out that if executives can give support or reward incentives that members will shape their behavior accordingly. Therefore, if the company executives support the implementation of knowledge transfer, employees will make more of an effort to transmit new knowledge. H.-F. Lin and Lee (2004) also believe that for executives to encourage employees to share knowledge it is necessary for the organization to create and maintain a positive culture of knowledge sharing. Therefore, this study suggests that hospital executives supporting knowledge transfer will affect physicians in regard to knowledge transmission. Thus :

H8 : Top management support has a positive effect on knowledge transmission success.

3.5 Knowledge transmission

Davenport and Prusak (1998) believe that knowledge transfer includes knowledge transmission and knowledge absorption (and use). In addition, Liyanage et al. (2009) pointed out that the process of knowledge transfer is that in which the recipient has been the source of knowledge acquisition,

knowledge transfer is completes the action, and promotes the further use of knowledge, such as the development of new ideas or processes to strengthen the existing knowledge. Therefore, knowledge transmission is the first step in knowledge transfer, the knowledge receiver acquiring knowledge, in the second step, the knowledge receiver can absorb and utilizatise the knowledge, and go on to develop new ideas to improve their performance and the competitiveness of the organization. Based on this point, knowledge transmission is one of the most important factors affecting knowledge transfer. Thus :

H9 : Knowledge transmission success has a positive effect on knowledge absorption success.

H10 : Knowledge transmission success has a positive effect on knowledge transfer success.

3.6 Knowledge absorption

Roberts et al. (2012) argued that in the ERP implementation context, the knowledge absorption capacity of the client will be conducive to the transfer of relevant knowledge. For the transfer of knowledge in the context of multinational corporations, to have a recipient with absorptive capacity is one of the most important factors (Gupta & Govindarajan 2000). Ko et al. (2005) pointed out that a researcher of information systems found that if a user lacked absorptive capacity it would result in knowledge being difficult to be absorbed and utilized, and the transfer of knowledge could not be carried out. But if a recipient has a good absorptive capacity, it will affect the success of knowledge transfer. Thus :

H11 : Knowledge absorption success has a positive effect on knowledge transfer success.

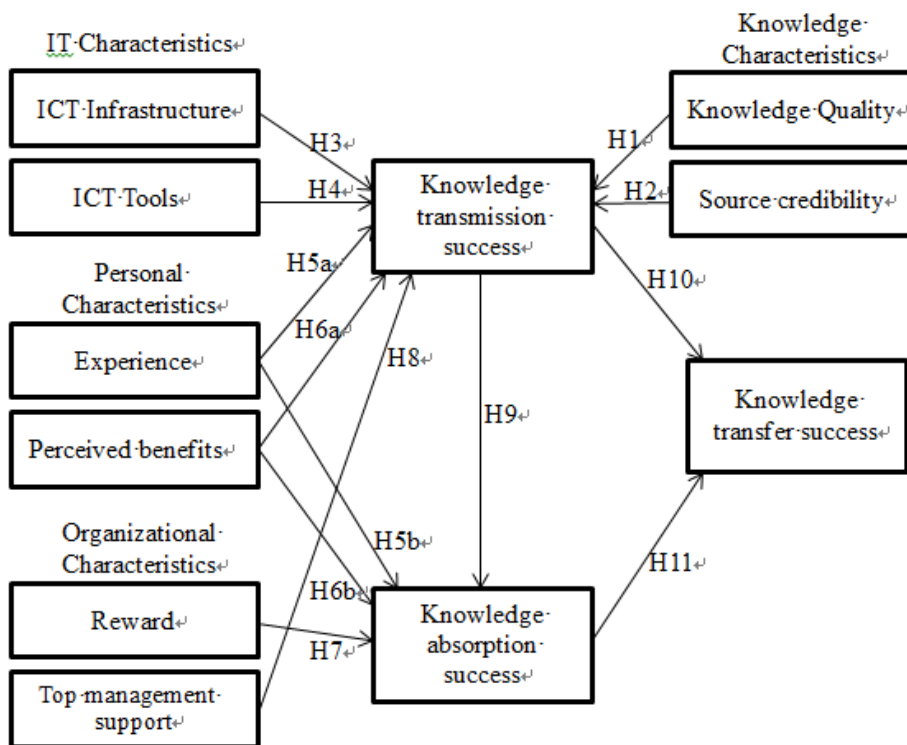


Figure 1. Research model

4 RESEARCH METHODOLOGY

4.1 Measures

In this study, the constructs were mainly adapted from previous studies and modified for physicians in the KMS context. All constructs were measured using multiple items. To ensure validity and reliability, a pilot version of the questionnaire was administered to 25 EMBA students with a medical background at the National Chung Cheng University. All survey questions used a 7-point scale except those constructs (Knowledge quality, Source credibility, ICT Infrastructure, ITC Tools) which were measured using a 5-point scale. Table 1 presents the construct definitions and sources.

Construct	Definition and sample items
Knowledge quality	The degree of knowledge accuracy, completeness, currency, customized, and format of information presentation. (Lin 2008) Sample items: "The knowledge provided by the KMS is accurate. (5-items)"
Source credibility	The extent to which the physician believes KMS's knowledge derives from reputable and trusted physicians. (Joshi et al. 2007) Sample items: "I trust the source of knowledge for KMS." (2-items)"
ICT Infrastructure	ICT Infrastructures in the hospital like a computer, the Internet and so on. Sample items: "My hospital has a very up-to-date ICT infrastructure which helps knowledge transfer." (3-items) " (Ismail & Yusof 2010)
ITC Tool	ICT tools in the hospital like a software package and information systems. Sample items: "My hospital uses Groupware and information system to encourage the exchange of medical knowledge. (3-items) " (Ismail & Yusof 2010)
Experience	Physicians familiar with the process of knowledge transfer and the experience of knowledge contributors. (McLachlin 1999) Sample items: "I have knowledge and experience in knowledge transfer practices." (3-items) "
Perceived benefits	The extent to which a physician believes that using KMS is beneficial. Sample items: "I think using the KMS to absorb knowledge is convenient. (4-items scale)" (kim et al. 2008)
Reward	Hospital provides to motivate physicians to absorb their knowledge through KMS. Sample items: "Hospitals provide better work assignments, when I absorb my knowledge through KMS. (4-items scale)" (Kankanhalli et al. 2005)
Top management support	The extent to which the hospital senior management supports KMS implementation. Sample items: "Senior managers in our hospitals believe that the knowledge transfer among physicians plays a role in the future success of our hospitals. (3-items scale) " (Arnett & Wittmann 2014)
Knowledge transmission success	The extent to which physicians use KMS. Sample items: "New content and knowledge are shared or posted frequently in the KMS. (4-items scale)" (Chang & Chuang 2011)
Knowledge absorption success	Physicians understand the value and importance of the knowledge source and then the extent to which knowledge is absorbed and used. Sample items: "I and knowledge contributor have a common language to deal with the practice. (7-items scale)" (szulanski 1996)
Knowledge transfer	The extent of physicians' satisfaction with knowledge transfer. Sample items: "I am satisfied with my decision to participate in knowledge

Construct	Definition and sample items
success	transfer activities. (6-items scale)" (Bhattacharjee 2001)

Table 1. Operational definitions of constructs in research model.

4.2 Data collection

The target participants were physicians who had had experience using KMS in Taiwan. We successfully contacted 5 medical institutions to secure their collaboration. A total of 241 questionnaires were returned. SPSS 21 software was used to examine outliers before data analysis was conducted. After excluding the outliers, 233 valid questionnaires were obtained. Detailed descriptive statistics relating to the respondents' characteristics are shown in Table 2.

Item	% Of n
Gender	Male 73.0% (170), Female 27.0% (63)
Age	21~30 (55.8%), 31~40(24.0%), 41~50(12.0%), 51~60(5.6%), >61(2.6%)
Physician level	Attending Physician(35.6%), Chief Resident Doctor(5.6%), Resident Doctor(25.3%), interns(33.5%)
Hospital hierarchy	Academic Medical Centers 61.8%(144), Metropolitan Hospitals 38.2%(89)
hospital scale(beds)	251~500(12.0%), 501~1000(27.0%), 1001~1500(34.8%), 1501~2000(6.0%), >2000(20.0%)
Current post of seniority	< 1 year (43.3%), 1~3 years (24.0%), 3~5 years (10.7%), 5~7 years(6.4%), >7 years (15.5%)

Table 2 Demographic information of the respondents (N=233)

4.3 Analysis of the Measurement Model

The analysis was conducted using the SmartPLS 2.0 software package. We tested the reliability and the convergent and discriminant validity for the measurement model. The constructs were assessed for reliability using Cronbach's alpha and composite reliability. The coefficients used for all constructs ranged from 0.799 to 0.958 (see Table 3). For the convergent validity, the item loadings were all greater than 0.7 and all AVEs were higher than 0.5. The results suggest that the convergent validity was acceptable. For the discriminant validity, Table 4 shows that all the square roots of the AVE values exceeded the correlation between the construct and other constructs, indicating an adequate discriminant validity of the constructs in the model. Each of variance inflation factor (VIF) value was less than 5, which indicates multicollinearity problems did not occur (Hair et al. 1992; Henseler & Fassott 2005).

Construct	Final items numbers (initial)	Factor loading	AVE	CR	Cronbach's alpha
Knowledge quality	5	0.815-0.883	0.718	0.927	0.902
Source credibility	2	0.963-0.966	0.930	0.964	0.925
ICT Infrastructure	3	0.839-0.853	0.712	0.881	0.805
ITC Tool	3	0.731-0.905	0.716	0.882	0.799

Construct	Final items numbers (initial)	Factor loading	AVE	CR	Cronbach's alpha
Experience	3	0.920-0.938	0.863	0.950	0.921
Perceived benefits	4	0.916-0.958	0.888	0.969	0.958
Reward	4	0.834-0.932	0.810	0.944	0.921
Top management support	3	0.859-0.943	0.811	0.928	0.883
Knowledge transmission success	4	0.819-0.887	0.719	0.911	0.870
Knowledge absorption success	7	0.807-0.898	0.747	0.954	0.943
Knowledge transfer success	4(6)	0.869-0.904	0.784	0.936	0.908

Table 3 Convergent validity and reliability analysis

Variable	1	2	3	4	5	6	7	8	9	10	11
Knowledge quality	0.848										
Source credibility	0.640	0.964									
ICT Infrastructure	0.557	0.518	0.844								
ITC Tool	0.696	0.598	0.624	0.846							
Experience	0.387	0.481	0.291	0.417	0.929						
Perceived benefits	0.572	0.609	0.520	0.657	0.539	0.942					
Reward	0.265	0.343	0.332	0.315	0.207	0.397	0.900				
Top management support	0.489	0.583	0.489	0.540	0.431	0.552	0.449	0.901			
Knowledge transmission success	0.670	0.745	0.464	0.639	0.510	0.636	0.358	0.556	0.848		
Knowledge absorption success	0.622	0.702	0.541	0.647	0.645	0.660	0.386	0.591	0.742	0.864	
Knowledge transfer success	0.673	0.648	0.599	0.661	0.499	0.706	0.382	0.601	0.709	0.774	0.885

Note : The bold numbers in the diagonal are square roots of AVE.

Table 4 Correlation between constructs

4.5 Analysis of the Structural Model

As shown in Figure 2, we estimated the path coefficients and the R^2 values. Most paths are significant, except for those between the ICT infrastructure and knowledge transmission success, and top management support and knowledge transmission success, meaning that hypotheses 3 and 8 were not supported. As expected, knowledge transmission success was significantly associated with knowledge quality, source credibility, ICT tools, experience and perceived benefits, accounting for 66.4% of the dependent variable's variance. Knowledge absorption success was significantly associated with experience, perceived benefits, reward and knowledge transmission success, accounting for 67.7% of the dependent variable's variance. Finally, knowledge transfer success was significantly associated

with knowledge transmission success and knowledge absorption success, accounting for 64.0% of the dependent variable's variance.

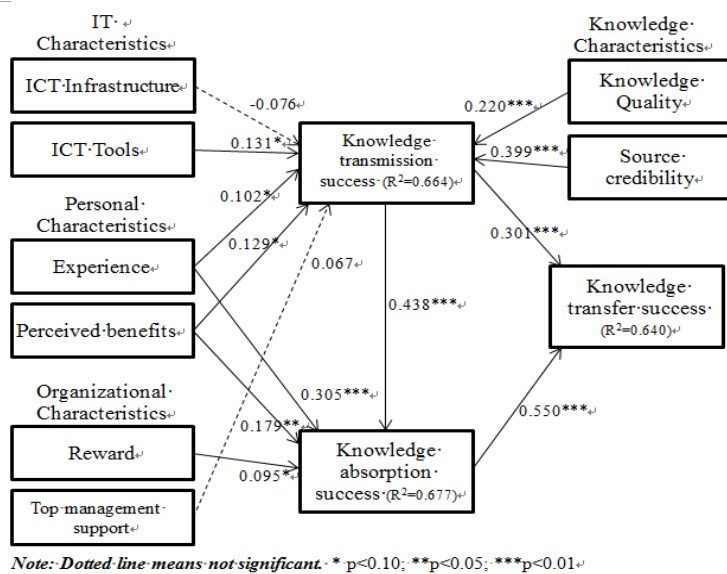


Figure 2. Results of structural model analysis

5 RESEARCH RESULTS AND DISCUSSION

The results obtained from this study point to three conclusions. First, the influencing factors of knowledge transmission success: (1) for the knowledge characteristics, knowledge quality and source credibility have a significant effect on knowledge transmission success; (2) for information technology characteristics, there was no significant relationship between ICT Infrastructure and knowledge transmission success; thus, Hypothesis 3 was not supported. A possible explanation for this is that perhaps the hospital ICT infrastructure is not frequently updated, so as a consequence the physicians choose other ways to receive medical knowledge. As hypothesized, ICT tools significantly influenced knowledge transmission success. Lin (2014) indicated that a knowledge management system is a communication medium, and will be used to engage in knowledge sharing behaviour; (3) for individual characteristics, experience and perceived benefits both significantly influenced knowledge transmission success. However, for organizational characteristics, there was no significant relationship between top management support and knowledge transmission success; thus, Hypothesis 8 was not supported. We speculated that perhaps physicians believe that using the system to receive the knowledge is not yet according to their concept. Second, the influencing factors of knowledge absorption success: (1) for individual characteristics, the results indicated that experience and perceived benefits both significantly influenced knowledge absorption success. It seems that the more experienced physicians had a better sense of knowledge absorption. In addition, they believed that the received knowledge from the system would be beneficial to them; (2) for environmental characteristics, reward significantly influenced knowledge absorption success. The finding is

consistent with the results obtained by Kankanhalli et al. (2005); and (3) as expected, knowledge transmission success significantly influenced knowledge absorption success. Third, the influencing factors of knowledge transfer success: (1) the results indicated that knowledge absorption success significantly influenced knowledge transfer success. Therefore, if a physician had a good knowledge of their absorption capacity it would indeed enhance the success rate of knowledge transfer. This finding is consistent with the results obtained by Almogbil (2005) and Roberts et al. (2012); (2) knowledge transmission success has a significant effect on knowledge transfer success. To conclude, knowledge transmission success and knowledge absorption success are important determinants of knowledge transfer success. The finding is consistent with the results obtained by Davenport and Prusak (1998).

6 CONCLUSIONS

The current study investigates the knowledge transfer success factors from a knowledge recipient's perspective. The results indicate that most constructs, except ICT infrastructure and top management support, in the model of knowledge transfer = knowledge transmission + knowledge absorption (and use) have a significant effect on physicians' knowledge transfer behavior. We have identified four facets based on the model (knowledge transfer = knowledge transmission + knowledge absorption) and investigated their effects on knowledge transfer: knowledge characteristics, information technology, personal cognition, and environmental characteristics. We have provided the model with a long-overdue empirical base. For practitioners, the results show that information technology characteristics have a significant impact on knowledge transmission success so this study suggests that systems vendors should first assess the compatibility of the hospital's ICT infrastructure (such as computers and the Internet, etc.) and ICT tools to facilitate designing the most suitable system for use by physicians. Top management support had no significant effect on the extent of KMS use. A possible explanation for this is that physicians believe that using the system to receive knowledge is not in accordance with their present habits, since there is still the original way of receiving knowledge. This study suggests that physicians should dare to experiment using the system to acquire knowledge, and may even be able to increase the efficiency of the knowledge received. However, it has a few inherent limitations. First, the relevance of this study is confined to the area of KMS transfer behavior, specifically, physicians. The sample for the study consisted of users of KMS from five hospitals in Taiwan. Thus, the findings and implications drawn from it cannot be generalized to other groups. Second, most physicians in Taiwan are males; the sample in this study comprised more males (73%) than females (27%). Prior studies suggested that gender could affect knowledge sharing behaviour (Wright & Li 2011). Differences in gender were not specifically measured here and are an obvious area for further investigation. In addition, another direction for future research is the relationship of cultural differences to success in knowledge transfer.

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