THE ROLE OF KNOWLEDGE GAP IN PERSON TO PERSON KNOWLEDGE DIFFUSION: A STUDY OF THAI MULTILEVEL MARKETING BUSINESS

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บทคัดย่อ

ช่องว่างของความรู้ที่ถูกพบในการศึกษาทดลอง มักพบว่าไม่ค่อยมีมาตรวัดการรับรู้ การศึกษาครั้งนี้ได้รวมแนว ความคิดก่อนหน้านี้และได้พัฒนามาตรวัดการรับรู้เพื่อใช้ในการตรวจสอบบทบาทของช่องว่างของความรู้ของธุรกิจระบบ เครือข่าย (MLM) การศึกษาครั้งนี้สร้างกรอบ ในเรื่องการแพร่กระจายความรู้และ การใช้สมการโครงสร้าง (structural equation modeling analysis) เพื่อทดสอบ ผลการทดลอง ผลการวิจัยพบว่าขีดความสามารถของแหล่งที่มาและของผู้รับ รวมไปถึงช่องว่างของความรู้ส่งผลกระทบในเชิงบวกต่อ การแพร่กระจายความรู้ การรับรู้ในเรื่องช่องว่างของความรู้ ก่อให้เกิดความเต็มใจที่จะเรียนรู้เพิ่มเติมจากแหล่งที่มาของความรู้นั้น ๆ เพื่อเป็นการการปรับปรุงการแพร่กระจายความรู้ ภายในองค์กร การนำเสนอความรู้ ควรคำนึงถึงแหล่งความรู้ที่มีความเชี่ยวชาญ จากผู้มีอำนาจตามสายบังคับบัญชา และมี ความน่าเชื่อถือ นับว่าเป็นสิ่งที่จำเป็น

Abstract

Knowledge gap was found in experimental studies but seldom found with the perception measure. This study integrates the previous knowledge concept and develops a perceived measure to investigate the role of knowledge gap in Multilevel marketing businesses' knowledge transfer. This study constructed a knowledge diffusion framework and uses the structural equation modeling analysis to test the model. The findings reveal that source capability, recipient capability and knowledge gap, positively affect knowledge diffusion. The perceived knowledge gap initiates willingness to learn more from knowledge source. To improve knowledge diffusion within the organization, the presentation of expertise, authority and trustworthiness of a knowledge source are needed.

Keywords: Knowledge Diffusion, Multi-level Marketing, Knowledge Gap, Souce, Recepients

INTRODUCTION

Knowledge diffusion is the foundation of human resource development. It works through knowledge codification, accumulation and transfer to the others (Diamond & Diamond, 2006). There are dyadic participants in the diffusion activities, the source of the knowledge and the recipient. Thus in knowledge diffusion, the source and the recipient's knowledge play an important role (Gettier, 1966). The knowledge gap between the source and the recipient also affects the level of knowledge diffusion (Morone & Taylor, 2004). However, in the knowledge diffusion literature, the relationship between knowledge gap and knowledge diffusion was found to be inconsistent among experimental research and the social theories. Furthermore, there are limited studies regarding the influence of knowledge gap on knowledge diffusion. Even though experimental research design can provide precise findings under strictly constrained condition and provide a justifiable outcome, for the practitioner, the findings cannot provide a justifiable reference. Thus this study utilizes a perception measure of the knowledge gap to provide a more practical view on knowledge diffusion.

The characteristics of the knowledge itself affect

the level of knowledge diffusion (Fang, 2011). Thus in order to know the clear relationship between knowledge gap and level of knowledge diffusion, this study constrained the type of knowledge to be transferred as codified and standardized knowledge. Accordingly, the study selected agents in multi-level marketing business operations (MLMs) as the context of study for their codified and standardized practices in the knowledge transfer.

This paper is organized as follows. The first section reviews the literature on knowledge diffusion, and the second section presents the research methodology, the hypotheses testing and the key results of the role of knowledge gap in knowledge diffusion. The final section presents the findings of the study.

LITERATURE REVIEW

Diffusion is a phenomenon of a mass from higher concentration milieu to the lower concentration milieu (Graham, 1852). Knowledge diffusion occurs when there are imbalances between the technical dimensions that seek equilibrium. The key players in knowledge diffusion literature are the source of the knowledge and the recipient of the knowledge (Shannon, 1948). The level of knowledge diffusion depends on the capability of the source and the recipient.

Source capability and knowledge diffusion

Source capability includes source disseminative capability, source experience and source expertise. Source disseminative capability is the ability to construct a meaningful description or to conduct a good narrative explanation about the knowledge that they plan to diffuse (Martin & Salomon, 2003; Szulanski, 1996; Taormina, 2004; Minbaeva, 2007). The source's willingness to share the knowledge was also perceived as one of the elements of source disseminative capability (Minbaeva, 2007). Well narrated knowledge gives recipients a better understanding about knowledge and eases the replication of the knowledge (Shannon, 1948). According to the theory of buffer effect of social support (Nucholls, Callell, & Kaplin, 1972), the recipient's perceived supportiveness reduces the stress of recipients on approaching knowledge source and increases the level

of disseminative capability that facilitates knowledge diffusion. In a similar vein, from a study of 305 subsidiaries of 92 Danish multinational corporations' human resource managers, it was shown that source disseminative capability improved knowledge diffusion (Minbaeva, 2007). Sources experience also facilitates knowledge diffusion. Experience increases tacit ability of source in knowledge transfer (Nelson & Winter, 1982) by reducing knowledge ambiguity and makes it easier to be transferred (Simonin, 1999). Experience also improves shared tacit ability among team members (Berman, Down & Hill, 2002). Source expertise means the know-how, proficiency and skills of the source. Theory of source credibility (Hovland & Weiss, 1951), social learning theory (Bandura, 1977), and informational social influence theory (Cialdini, 2001) posited that recipients are more likely to acquire knowledge from credible sources whom they perceived as having expertise. Thus the perceived source expertise affects the knowledge diffusion. Based on the above discussions, following hypothesis is constructed:

H1: Source capability positively improves knowledge diffusion.

Recipient capability and knowledge diffusion

Recipient capability includes absorptive capability, recipient experience and recipient expertise. Absorptive capability is the ability to assimilate the knowledge learned by the recipient (Cohen & Levinthal, 1990). Szulanski (1996) described absorptive capability as the "*ability... to identify value and apply new knowledge*" (p.34). Minbaeva (2007) defined absorptive capability as prior knowledge and the willingness to adopt new knowledge. Prior knowledge, such as "*basic skills, shared language ...experience, and up-to date information*" facilitate the recipient's ability to adopt, manage, apply, convert and adapt the newly acquired knowledge (citing Cohen and Levinthal, 1990; Szulanski, 1996, 2003 by Minbaeva, 2007:575). Studies revealed that the recipient absorptive capability improves knowledge diffusion (Doring & Schnellenbach, 2006; Minbaeva, 2007; Simonin, 2004; Szulanski, 1996; Williams, 2007). The efficiency of knowledge diffusion depends on how the recipient's ability adds new knowledge to existing

knowledge (Grant, 1996). Cohen and Levinthal (1990) argued that prior knowledge and knowledge of recent technologies and developments facilitate recipient's ability to recognize, assimilate, and use the knowledge. Absorptive capability improves the appropriate ability through associating the new knowledge with what they already know. Simonin (2004) also found a positive relationship between learning capability and knowledge diffusion from a study of 147 US high technology firms. William (2007), after conducting a survey on 62 cross border fixed and cellular phone service providers' operation contacts, argued that the recipient's ability in understanding the knowledge improves knowledge diffusion in terms of implementation and adjustment of newly introduced knowledge. Furthermore, in a cross border knowledge diffusion study, Minbaeva (2007) also found a significant and positive causal relationship between knowledge receiver's absorptive capability and the level of knowledge diffusion on 92 cross border subsidiaries. From a study of 168 firms across Finland, Russia and the United States, researchers found that training helps to improve absorptive capability of recipients and thus positively affects the level of knowledge diffusion (Minbaeva, et al., 2003). In general, absorptive capability unambiguously and consistently supported knowledge diffusion in previous studies. With regard to recipient's expertise, Reagans & McEvily (2003) found that it is easier to absorb the knowledge if they have some immediate expertise. Recipient experience is the prior working experience of an individual in the relative fields (Hatch & Dyer, 2004). Inconsistent relationships were found between recipient experience and knowledge diffusion (Shariq, 1999; Nahapiet & Ghoshal,1998; Hatch & Dyer, 2004; Gupta & Govindarajan, 1991; Teece, 1977; Simonin. 1999; Muthusamy & White, 2005). Shariq (1999) and Nahapiet and Ghoshal (1998) argued that capability that resided collectively with an organization is difficult to be transferred through personnel mobilization. Their findings reveal that prior experience could not work well with the new firm. Furthermore prior experiences hinder the adoption of the new knowledge (Hatch & Dyer, 2004) due to the different contexts. On the other hand, experience reduces knowledge transfer cost and encourages the knowledge transfer (Teece, 1977). Simonin (1999) and Muthusamy and White (2005) found that experiences

support knowledge diffusion. In this study, MLMs use similar business operation practices, hence the context differences are mitigated. Thus the following hypothesis is proposed:

*H2: Recipient capability positively improves knowledge diffusion.*

Knowledge gap and knowledge diffusion

Successful knowledge diffusion depends on how precisely the original knowledge of the source is to be copied, replicated, imitated and reproduced by the recipient. In addition, the knowledge gap between the source and the recipient also affects knowledge diffusion.

Knowledge gap is also identified as knowledge distance, knowledge interval (Morone & Taylor, 2004) or technological distance (Hoetker & Agarwal, 2007). However, these terms possess a similar meaning symbolizing the gap between knowledge source and recipient. Objectively, knowledge interval between source and recipient was calculated to measure the knowledge gap (Morone & Taylor, 2004). By calculating the percentage of focal knowledge citation in the related disciplines with all citations, technological distance was measured (Hoetker & Agarwal, 2007). In a subjective view, *"knowledge gap is the gap between what we should know ... ... and what we really know at a given point in time"*. (Regev, Shtub, & Ben-Haim, 2006:17). However, what is perceived as new knowledge to one is not necessarily new for others (Swan & Newell, 1995 citing Zaltman, et al., 1973). Knowledge gap exhibits influences in knowledge diffusion especially on the recipient as it affects the level of adoption and understanding and the speed of the knowledge transferred (Morone & Taylor, 2004). The social comparison theory of Hornstein, Fisch & Holmes (1968) argues that people like to compare themselves with others and they want to be similar with others, thus it creates motivation for the actions to intimate the gap. In addition, the study of hard disk drive firms (Hoetker & Agarwal, 2007) and the multinational corporation study of Gupta & Govindarajan (2000) justified the relationship between knowledge gap and knowledge diffusion. The authors argued that the wider the knowledge gap the greater the knowledge is transferred. Thus the following hypothesis is constructed:

H3: Knowledge gap positively affects knowledge diffusion.

All in all, knowledge diffusion is a function of the source capability and recipient capability and knowledge gap. Based on these relationships, the research framework for this study was developed as shown in Figure 1.
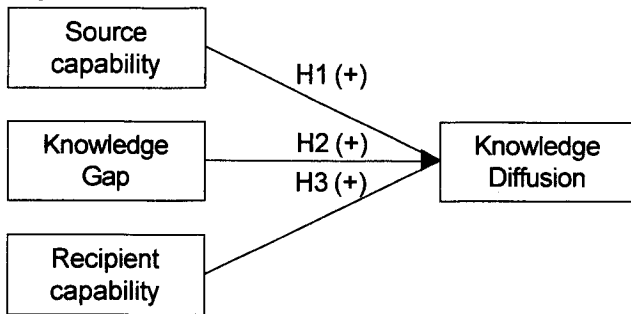
Figure 1: Research framework

RESEARCH METHODOLOGY

Data collection and sample

In order to find the relationship between knowledge gap and level of knowledge diffusion, the study constrained the type of knowledge to be transferred as codified and standardized knowledge. Accordingly, the study selected agents in multi-level marketing business operations (MLMs) as the context of study for their codified and standardized knowledge transfer. This study used quota sampling to investigate 480 active MLM agents in Thailand as the population.

Measurement of variables

Level of knowledge diffusion was measured by the intention on replication, the extent of replication, level of implementation and the effort on replication. The Likert scale was used with each measuring item to evaluate

knowledge diffusion as a construct. The measures were adapted from these used by Williams (2007). Source capability was adapted from the measurements used by Minbaeva (2007), Szulanski (1996), Makino and Delios (1996), and Cross and Sproull (2004) using 5-level Likert scale. Recipient capability measurements were adapted from the measurements by Cohen and Levinthal (1990) and Szulanski (1996) on the perceived easiness of knowledge, significance of the knowledge and self-perceived competence and the measurement by Minbaeva (2007) and Hatch & Dyer (2004) on recipient experience. Knowledge gap was operationalized by integrating the measure of Regev et al. (2006) and measure of Heckter & Agawral (2007) using an interval scale.

Statistical analysis techniques

This is a quantitative study which focuses on finding the causal relationships between antecedents such as source capability, recipient capability, knowledge gap and the level of knowledge diffusion. This study used structural equation modeling (SEM) which provides a comprehensive statistical approach to deal with multiple relationships simultaneously for a causal analysis (Hoyle, 2006). Before running SEM, factor analysis was used to investigate the reliability of measures of each construct, the Cronbach's alpha of .912 for source capability .906 for recipient capability and .855 for the level of knowledge diffusion were achieved, which gave sufficient internal consistency of measures within each construct.

Hypotheses testing

Using AMOS 18 the hypotheses were tested and the fit indices have shown .922 on CFI and .906 on TLI and 0.922 on IFI. This indicates that the path model fit well and was acceptable (Ho, 2006). Table 1 presents the direct influences of determinants to knowledge diffusion.

Table 1: Hypotheses testing of SEM analysis between IDVs and DV

Hypothesis	IDV	DV	Hypo. sign	Beta	C.R	P	Support
H1	Source capability	KD	+	.178	2.482	.013	Yes
H2	Recipient capability	KD	+	.404	5.285	***	Yes
H3	Knowledge gap	KD	+	.288	6.392	***	Yes

KD = level of knowledge diffusion; *** p<0.001

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Source capability shows a significant and positive influence on the level of knowledge diffusion. The standardized correlation coefficient of .178 represents the role of source capability in explaining the level of knowledge diffusion.

Recipient capability shows a significant and positive influence on the level of knowledge diffusion. The standardized correlation coefficient of .404 represents the level of knowledge diffusion.

Knowledge gap shows a significant and positive impact on knowledge diffusion in the context of study. Knowledge gap shows the second highest correlation coefficient at .288.

All hypotheses are supported. The three determinants have yielded a square multiple correlation of .496 that represents a beta of .704, which reveals that the model explains 70.4% of the level of knowledge diffusion. Figure 2 illustrates the standardized outputs of square multiple correlation coefficient.

DISCUSSION AND CONCLUSION

Source capabilities, recipient capabilities, and knowledge gap positively affect the level of knowledge diffusion. The finding of lower beta coefficient of source capabilities (.178) than that of recipient capability (.404), could be explained by the characteristic of knowledge that was used in this study, which is well codified and standardized, which reduced the role of the source capability. It could be also due to the multiple knowledge sources that weaken the role of source capability. In MLM, the socialization events held by an upliner frequently include several generations of downliners that provides an alternative knowledge source for the recipient to learn from higher level upliners or from peers. In addition, upliners are plausible for such cross generation knowledge transfers as they receive collateral benefits from the improved recipient's capability through knowledge diffusion.
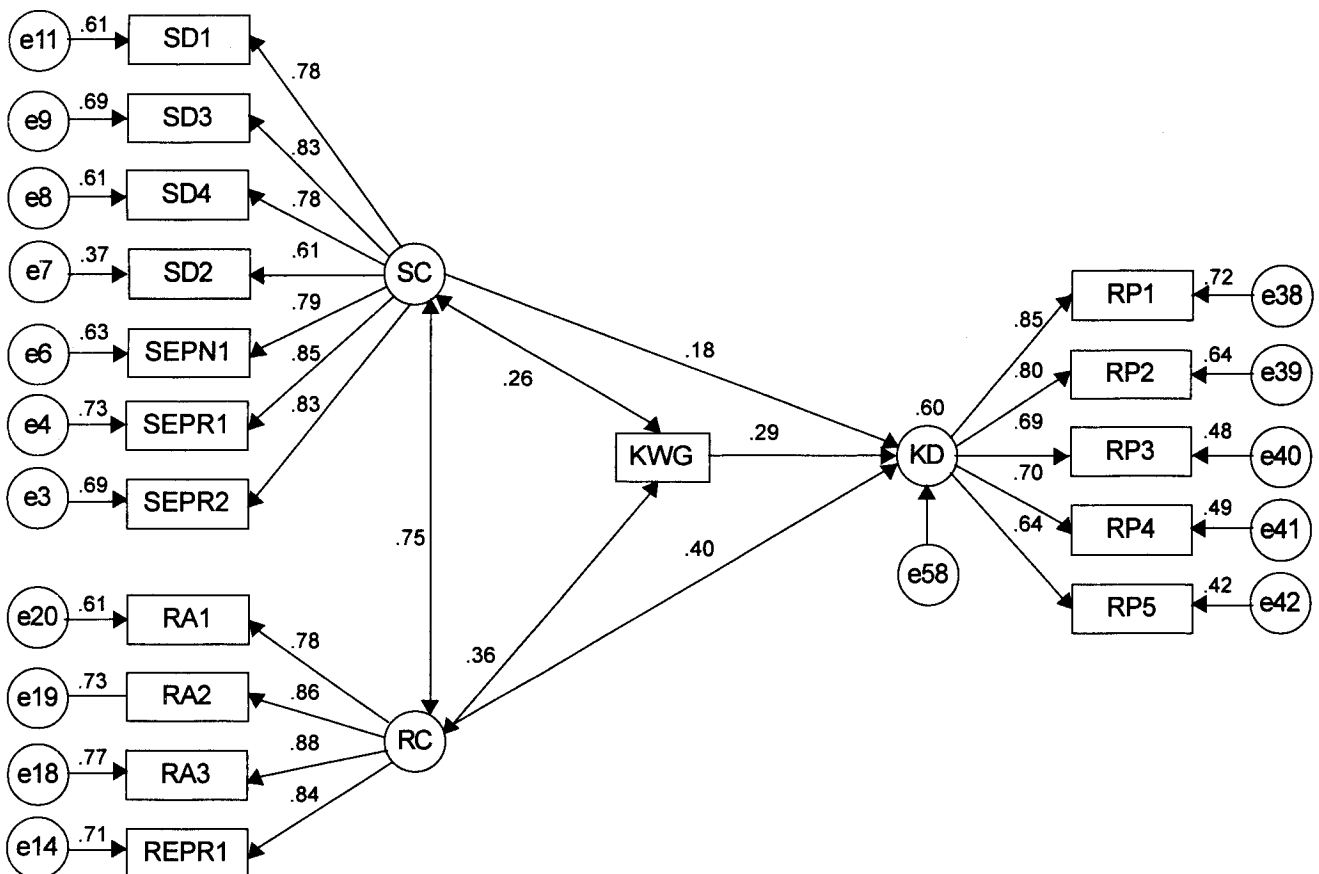
Figure 2: SEM path model output

SC = source capability; RC = recipient capability; KWG = knowledge gap; KD = level of knowledge diffusion

The recipient capability improves knowledge diffusion. This finding is consistent with studies of various contexts (Cohen & Levinthal, 1990; Minbaeva, 2007; Rogers, 1995; Simonin, 2004; Szulanski, 1996) that reveals the crucial role of recipient capability which can be generalized in a broader context for knowledge diffusion.

The positive relationship between knowledge gap and knowledge diffusion shows that the perceived knowledge gap initiates willingness to learn more from the knowledge source, which is consistent with the argument of social comparison theory that posits the motivation of learning emerges from a comparison with others (Hornstein et al., 1968). The finding is supported by the informational social influence (Cialdini, 1993) and source credibility (Hovland, et al., 1953) which argue that the recipients will replicate from the source who is perceived to have expertise, and also supported by the social learning theory where the recipients learn from the people whom they regard as having perceived authority (Bandura. 1971).

The perceived knowledge gap initiates willingness to learn more from knowledge source. To improve knowledge diffusion within the organization, the presentation of expertise, authority and trustworthiness of a knowledge source are needed.

Academically, this study has integrated a measurement for knowledge gap without using the experimental research design. Thus it simplifies and provides a measuring tool for knowledge gap that is applicable for knowledge diffusion studies in other contexts. The findings can be applied to industries or business activities with knowledge scopes that are consistent with standard operation practices and which require practices to be strictly followed, and where replication is recommended as the best practice for knowledge transfer.

This study design uses MLM as the population. The outcome might not be generalizable to all industries. Measurements used in this study are based on previous studies and most measures are perceived measures, which might weaken the justification of study. It is always expected that, if the constraint of data collection in different industries or firms can be overcome, the study findings on different industries and job functions will be more consistent as under these circumstances, it is expected that a generalized conceptual model can be employed.

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