INFLUENCE OF INTERNAL CAPABILITY ON SERVICE INNOVATION PERFORMANCE THROUGH KNOWLEDGE MANAGEMENT CAPABILITY IN HOTEL INDUSTRY

ผลกระทบของความสามารถภายในองค์กรต่อผลการดำเนินการด้านนวัตกรรมการบริการ ผ่านทางความสามารถในการเรียนรู้ของธุรกิจโรงแรม

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Abstract

The purpose of this paper is to determine the empirical factors of internal capability on knowledge management capability (KMC) and the outcome of KMC on service innovation performance. Internal capabilities are the internal resource of organization that includes human capital and relationship with suppliers, travel agencies, and external institute. KMC is the ability to acquire and exploit knowledge. Data collection is applied a purposive sampling technic (3-5 stars hotel) that processed by 60 interviews, 700 mail surveys, and 100 electronic mails. The questionnaires collected from hotels in Thailand, 136 were valid for data analysis. The regression analysis is applied for hypothesis testing. The results show that the evidence of positive relationship between hotel internal capability and KMC. Furthermore, research also exposed a positive effect of KMC on service innovation performance. Therefore, the hotel should develop the internal capability to achieve better efficiency KMC which affected to service innovation performance.

Keywords: Internal capability, Knowledge acquisition, Knowledge exploitation, Service innovation performance

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บทคัดย่อ

การวิจัยนี้มีวัตถุประสงค์เพื่อพิจารณาหาปัจจัยเชิงประจักษ์ของความสามารถภายในองค์กรที่ส่งผลต่อความสามารถจัดการองค์ความรู้ (KMC) และผลของความสามารถจัดการองค์ความรู้ต่อผลการดำเนินการด้านนวัตกรรมการบริการ โดยความสามารถภายในองค์กร หมายถึง ทรัพยากรภายในองค์กร ซึ่งประกอบด้วยทรัพยากรบุคคลและการสร้างความสัมพันธ์กับซัพพลายเออร์ บริษัทด้านการท่องเที่ยว และหน่วยงานภายนอกต่างๆ ความสามารถจัดการองค์ความรู้ หมายถึง ความสามารถในการสร้างและแสวงหาองค์ความรู้ การรวบรวมข้อมูลใช้เทคนิคการเลือกตัวอย่างตามเกณฑ์ (โรงแรมระดับ 3-5 ดาว) โดยการสัมภาษณ์ 60 โรงแรม การส่งจดหมาย 700 โรงแรม และการส่งจดหมายอิเล็กทรอนิกส์ 100 โรงแรม การเก็บรวบรวมข้อมูลโดยแบบสอบถามจากโรงแรมในประเทศไทย มีแบบสอบถามจำนวน 136 ชุดที่ใช้สำหรับการวิเคราะห์ข้อมูล สมมติฐานทดสอบโดยเทคนิคการวิเคราะห์ถดถอย (Regression analysis) ผลการวิจัยพบว่า ความสามารถภายในองค์กรส่งผลเชิงบวกต่อความสามารถจัดการองค์ความรู้ นอกจากนี้ผลการวิจัยยังแสดงให้เห็นถึงผลกระทบเชิงบวกของความสามารถจัดการองค์ความรู้ต่อผลการดำเนินการด้านนวัตกรรมการบริการ ดังนั้นโรงแรมควรพัฒนาขีดความสามารถภายในองค์กรเพื่อเพิ่มประสิทธิภาพของความสามารถจัดการองค์ความรู้ ซึ่งส่งผลต่อผลการดำเนินการด้านนวัตกรรมการบริการ

คำสำคัญ: ความสามารถภายในองค์กร การสร้างและแสวงหาองค์ความรู้ การนำความรู้มาใช้ให้เกิดประโยชน์ ผลการดำเนินการด้านนวัตกรรมการบริการ

Introduction

The number of foreign tourists visiting Thailand are gradually increasing 3 times from 10 million persons in 2003 to 32 million persons in 2016 (Minor International Public Company Limited, 2016: 29), which lead to the rapid growth of hotel industry. The growing number of tourists is increased the number of hotels. The number of hotel in 2014 is 12,359 hotels. In 2016, the number of hotel increases to 15,510 hotels (Kasikorn research center, 2016: 1-5). Hotel industry should develop new innovative offer, to be a competitive advantage. The previous studies had found that innovations are significantly affecting the growth rate, the existence of a company, and the activities of value creation (Hamel & Skarzynski, 2001; Weerawardena, O'Cass & Julian, 2006) Innovation is important driving hotel industry to perform better service and gain more profit (Damanpour, Walker & Avellaneda, 2009; Mattsson & Orfila-sintes, 2014) determinants, and effects. This study focuses on consequences of adoption of three types of innovation (service, technological process, and administrative process. In another word, the outcome of innovation in services can acknowledge as the service innovation performance.

The earlier studies recommended that knowledge management is linked to the various measures of organizational performance such as competitiveness, competitive advantage, and innovation (Gold, Malhotra & Segars, 2001). Knowledge management process assists an organization in acquiring, storing, and utilizing knowledge to support decision-making, problem-

solving, strategic planning, and dynamic learning (Sveiby, 2001). Chien, Lin & Ya-Hui Lien (2015) organisational learning can ensure an enterprise's survival and develop new opportunities. However, considering the different resources and capabilities available to an organisation, what kind of organisational learning style should an enterprise adopt to achieve its goal of organisational learning and innovation? This study aimed to determine the best learning styles and innovation performance under different contingencies. This study thus developed eight relevant hypotheses and then conducted an empirical study involving the top managers of 650 manufacturing companies listed on the Taiwan Stock Exchange Corporation and the Over The Counter Market in Taiwan. The result of the path analysis of 154 valid samples indicated that the learning styles required for both incremental and radical innovation are substantially different between the four distinct contingencies when combining internal capacity and external relationships. Internal capability is the basis of any performance. The investigations of internal capably in the past are limited to examine the practices and activities of hotel internal capability. Hence, the objective of this study is to examine the internal practices and activities which affect to KCM and the impact of KCM on service innovation performance.

Literature review and hypotheses

The investigation of innovation and firm's performance has found that internal capability is a primary factor for innovation development (De Souza Bermejo et al., 2016). Internal capability has determined as the ability to invent, improve, and adjust to increase the variety of service and add value to the organization by utilized resource within organization to get maximum profit (OECD/Eurostat, 2005). Form Yang (2012: 473), internal capability consists of organizational structure, human capital, organizational culture, existing process, and strategies. Human resource is referred to the ability of people to do things (Tamkin, 2005). The higher level of human skills is led to the higher level of performance (Livesay, Lux & Brown, 1996) Hence, human resources are one of the important factors for service innovation performance. In addition, innovation is driven by a firm's external partnerships (Leiponen & Helfat, 2010: 224-236). External relationship has helped a firm to enhance the higher level of internal capability, which is further related to an enterprise effectively and performance (Chien, Lin & Ya-Hui Lien, 2015; Zaheer & Bell, 2005) In this study, internal capability is focused on three dimensions which include human capability, innovativeness of organization, and external social relationship.

The previous studies have shown that knowledge management is the fundamental of all learning organizations. It creates the linkages among employees, suppliers, and customer that support both a demand pull and supply push of information (Weathersby, 1999: 7). Groff & Jones (2003) have indicated knowledge management capabilities (KMC) as the tools, strategies, and techniques to improve, analyze, retain, organize, and share business expertise. The later studies have defined KMC as the ability

of organization to compile critical knowledge resources and manage their assimilation and exploitation (Alaarj, Abidin-Mohamed & Bustamam, 2016). The impact of KMC on hotel performance is consisted of creating new internal capabilities, encourage hotel innovation, improve service innovation performance and enhance customer value (Mohammed, Rashid & Tahir, 2014). Hence, KMC has influenced by internal capabilities and further effected to service innovation performance. In this study, KMC has determined into two dimensions: (1) knowledge acquisition and (2) knowledge exploitation. Knowledge acquisition is enclosed with the processes and activities of interaction, brainstorming, innovation, feedback, and benchmarking (Nonaka & Takeuchi, 1995). Knowledge acquisition in this study is defined as the process of inquiring knowledge from both internal and external organization. Knowledge exploitation has indicated as the use and development of existing competencies (Thomas & Wood, 2014). Therefore, we hypothesise that,

H1: Internal Capacity has a positive effect on knowledge acquisition.

H2: Internal Capacity has a positive effect on knowledge exploitation.

Innovation has been identified as the learning process where knowledge is acquired, shared, and assimilated targeted to create new knowledge, which embodies products and services (Du Plessis, 2007). The study of Goffin & Mitchell (2005) has represented that innovation performance is considered as the total innovation produced by an organization. The prior investigation on innovation is found that KMC is basically an important factor to establish firms' innovation (Nonaka & von Krogh, 2009). Davenport, De Long & Beers (1998) has recommended that the establishing and sharing useful knowledge aim to improve hotel performance. Hotels need to prioritize KMC as knowledge learning is influenced on innovation performance. Therefore, we hypothesise that,

H3: Knowledge acquisition has a significant impact on service innovation performance.

H4: Knowledge exploitation has a significant impact on service innovation performance.

Methodology

The purpose of this study was to study about hotel innovations which target hotel in Thailand. The questionnaires were distributed through 3 channels consist of electronic mail survey, mail survey, and interview to the hotels in popular destinations such as Bangkok, Pattaya, Phuket, and Chiang Mai. The target respondents are the high standard hotel (3-5 stars). The total 136 of 149 samples were used in the data analysis (13 missing data). All of the questions were operationalized by using a 5-point Likert scale where 1 = the factor has the least existence in organization and 5 = the factor has most existence in organization.

Data from collected questionnaires are compiled in Microsoft Excel then analyzed in SPSS with the method of linear regression. For reliability test and factor analysis, Cronbach's Alpha must be more than 0.7 and KMO should be more than 0.6. In linear regression analysis determined the significant value of 0.01, F-test more than 6.63 and T-test more than 2.33. Researcher group is looking forward for the

analysis with result of adjusted R^2 exceed 0.5 impacts from each factor included in the hypothesis.

Results and Data Analysis

- **Data Description**

Data descriptive of 136 samples is shown as in Table 1. The majority of respondents are independently operating with 63.96% followed by 33.10% operate under company network. The respondents mostly are the hotels with 3 stars (37.50%), and the hotels with 4 stars (33.82%). Size of hotel responding are mostly 51-100 rooms, 34.56% follow by more than 150 rooms, 31.62% and less than 50 rooms at 22.06% rate. Most of which tend to have only small number of employees (41.18% have less than 50 employees).

Table 1 Demographics of respondents

Profile	Frequency	%
Service administration		
Company network	45	33.10
Franchise agreement	1	0.73
Independent operating	87	63.96
Others	3	2.21
Hotel standard		
1 ZStar	1	0.74
2 Star	6	4.41
3 Star	51	37.50
4 Star	46	33.82
5 Star	26	19.12
Others	6	4.41
Hotel size		
Less than 50 rooms	30	22.06
51-100 rooms	47	34.56
101-150 rooms	16	11.76
More than 150 rooms	43	31.62
Number of employee		
Less than 50	56	41.18
51-100	26	19.12
101-150	19	13.97
151-200	12	8.82
More than 200	23	16.91

Table 1 Demographics of respondents (cont.)

- **Factor analysis and Reliability Test**

The test of reliability was adopted KMO and Cronbach's alpha (α) to measure that each measurement items were suitable for factor analysis. The four components of internal capability have Cronbach's alpha of 0.906; for knowledge management capacity, knowledge acquisition has Cronbach's alpha of 0.908 and knowledge exploitation has Cronbach's alpha of 0.951; service innovation performance has Cronbach's alpha of 0.815. All items received Cronbach's alpha more than 0.7 which indicates that the measurement is reliable.

Later on, factor analysis was used to group the factors. All 4 components of internal capability, human capability, relationship with association and institute, relationship within supply chain, and relationship within organization and with customers have KMO of 0.874, 0.816, 0.767, and 0.618 subsequently. Knowledge acquisition has KMO of 0.887 while knowledge

exploitation has KMO of 0.889 and service innovation performance has KMO of 0.686. All items have KMO exceed 0.6 and factor loading beyond 0.5, thus the components can be grouped as shown in Table 2 and 3.

Internal capability composed of 4 groups including human capability, relationship with association and institute, relationship within the supply chain, and relationship within organization and with customers. First group, human capability has mean from 3.60 to 4.01; second group, relationship with association and institute has mean from 3.55 to 3.80; third group, relationship within supply chain has mean from 3.38 to 3.79; fourth group, relationship within organization and with customers has mean from 4.02 to 4.10. Second factor, knowledge management capacity, was divided into 2 composites which are knowledge acquisition with mean between 3.67 to 3.93 and knowledge exploitation with mean between 3.91 to 3.99. Last factor, service innovation performance include mean from 3.84 to 4.03.

- **Test of Hypothesis**

The result of hypothesis testing is shown in Table 4. Hypothesis 1 and 2 was adopted a multiple regression to predict the KMC based on various internal capability factor including human capability, relationship with association and institute, relationship within supply chain, and relationship within organization and with customer. For hypothesis 1, there are 3 variables of internal capability present a positive effect on knowledge acquisition with adjust R^2 value of 0.683 (F = 72.529). The significant variables are human capability (t-test = 4.456, b = 0.285, sig. = 0.000), relationship with association and institute (t-test = 3.867, b = 0.267, sig. = 0.000), and relationship within organization and with customer (t-test = 5.091, b = 0.345, sig. = 0.000). However, the variable of relationship within supply chain does not has enough evident to support hypothesis 1 (t-test = 1.890, b = 0.128, sig. = 0.061). For hypothesis 2, there are 3 variables of internal capability present a positive effect on knowledge exploitation with adjust R^2 value of 0.601 (F = 51.152). The significant variables are human capability (t-test = 3.410, b = 0.247, sig. = 0.001), relationship with association and institute (t-test = 3.084, b = 0.236, sig. = 0.002), and relationship within organization and with customer (t-test = 6.171, b = 0.469, sig. = 0.000). However, the variable of relationship within supply chain does not has enough evident to support hypothesis 2 (t-test = –0.530, b = –0.040, sig. = 0.597). Hotels' knowledge acquisition increased 28.5% for each percentage of human capability, 26.7% for each percentage of relationship with association and institute, and 34.5% for each percentage of relationship within organization and with customer. In conclusion, human capability, relationship with association and institute, and relationship within organization and with customer were significant predictors of knowledge acquisition. The knowledge exploitation of hotel increased 24.7% for each percentage of human capability and 23.6% for each percentage of relationship with association and institute. It is concluded that human capability and relationship with association and institute have a positive effect on knowledge exploitation.

A simple linear regression was adopted to test hypothesis 3 and 4, which the relationship is examined using F-test and t-test. Hypothesis 3, knowledge acquisition has a positive effect on service innovation performance with adjust R^2 of 0.497 (F = 133.653, t = 11.561, b = 0.708, sig. =0.000). This means that hotels' service innovation performance increased 49.7% for each percentage of knowledge acquisition. Hypothesis 4, knowledge exploitation has a positive effect on service innovation performance with adjust R^2 of 0.505 (F = 137.950, t = 11.745, b = 0.714, sig. =0.000. This mean that hotels' service innovation performance increased 50.5% for each percentage of knowledge exploitation.

Table 2 Reliability Test and Factor Analysis of Internal Capability

Constructs	X	S.D.	Factor Loading	KMO
Internal Capability (α = 0.906):				
• *Human Capability*				0.874
Employees have a good knowledge and skills for their responsible job.	3.65	0.726	0.838	
Hotel provides training course to develop knowledge, skills, performance, and potentiality for employees.	3.73	0.812	0.81	
Employees always intent to perform the best service.	4.01	0.789	0.86	
Employees always come up with the new idea or new service.	3.63	0.941	0.799	
Executive explained the goals of the performance index (KPI) to employees.	3.60	1.013	0.765	
• *Relationship with Association and Institute*				0.816
The cooperation level with universities and educational institutions.	3.58	0.985	0.858	
The cooperation level with a private and public research institute.	3.58	0.931	0.906	
The cooperation level with national trade associations and tourism industry sector.	3.80	0.824	0.889	
The cooperation level with international trade associations and tourism industry sector.	3.55	1.024	0.817	
• *Relationship within Supply Chain*				0.767
The cooperation level with competitors.	3.49	0.798	0.75	
The cooperation level with domestic suppliers.	3.79	0.847	0.722	
The cooperation level with international suppliers.	3.43	1.093	0.763	
The cooperation level with other hotels in the company/brand chain.	3.43	1.209	0.816	
The cooperation level with other hotels external company/brand chain.	3.38	1.033	0.848	
• *Relationship within Organization and with Customer*				0.618
Executive creates good interaction with employees.	4.02	0.865	0.885	
Executives and staffs are collaborated to perform the best service.	4.05	0.776	0.894	
The cooperation level with the customers.	4.10	0.749	0.680	

Table 3 Reliability Test and Factor Analysis of KMC and Service Innovation Performance

Constructs	X	S.D.	Factor Loading	KMO
<u>Knowledge Management Capacity (KMC):</u>				
• ***Knowledge Acquisition (α = 0.908)***				0.887
Customers' knowledge acquiring processes available.	3.87	0.768	0.835	
New knowledge-generating processes from existing knowledge.	3.93	0.757	0.856	
Knowledge about suppliers acquiring processes available.	3.67	0.817	0.777	
Knowledge distributing processes throughout the organization available.	3.81	0.856	0.86	
Knowledge about new products/services acquiring processes available.	3.8	0.859	0.869	
Exchanging knowledge between individuals.	3.79	0.931	0.785	
• ***Knowledge Exploitation (α = 0.951)***				0.889
Hotel has processes for using knowledge in the development of new products/services.	3.91	0.833	0.86	
Hotel has processes for using knowledge to solve new problems.	3.99	0.775	0.941	
Hotel uses knowledge to improve efficiency.	3.99	0.745	0.955	
Hotel uses knowledge to adjust strategic direction.	3.96	0.778	0.94	
Hotel is able to locate and apply knowledge to changing competitive conditions.	3.93	0.836	0.887	
<u>Service innovation Performance (α = 0.815):</u>				0.686
The efficiency of main service.	3.98	0.715	0.844	
Flexibility of specific services.	3.84	0.743	0.897	
The speed of handling problems from complaints.	4.03	0.688	0.82	

Table 4 Test of hypothesizes

Hypotheses	F-test	t-test	Beta	Sig.	Adjust R^2	S.D.	Conclusion
H1: Internal Capacity has a significant impact on knowledge acquisition.	72.529				0.683	0.562	
Human Capability		4.456	0.285	0.00			Support
Relationship with association and Institute		3.867	0.267	0.00			Support
Relationship within supply chain		1.890	0.128	0.06			Not support
Relationship within organization and with customer		5.091	0.345	0.00			Support

Table 4 Test of hypothesizes (cont.)

Hypotheses	F-test	t-test	Beta	Sig.	Adjust R^2	S.D.	Conclusion
H2: Internal Capacity has a significant impact on knowledge exploitation.	51.152				0.601	0.630	
Human Capability		3.410	0.247	0.00			Support
Relationship with association and Institute		3.084	0.236	0.00			Support
Relationship within supply chain		- 0.530	- 0.040	0.59			Not support
Relationship within organization and with customer		6.171	0.469	0.00			Support
H3: Knowledge acquisition has significant impact on service innovation performance.	133.65	11.561	0.708	0.00	0.497	0.712	Support
H4: Knowledge exploitation has significant impact on service innovation performance.	137.95	11.745	0.714	0.00	0.505	0.706	Support

Discussion

The regression results of this research are supported that Knowledge Management Capacity (KMC) is reaffirmed the important to improve hotel performance. Both factors of KMC, knowledge acquisition and knowledge exploitation, have a positive effect to service innovation performance support the previous researches of Thomas & Wood (2014) and Mohammed, Rashid & Tahir (2014). To develop KMC, the internal capability is an important factor. The results of hypothesis 1 and 2 present that KMC is strongly generated from internal sources such as human capability, relationship with association and Institute, and relationship within organization and with customer (Leiponen & Helfat, 2010; Chien, Lin & Ya-Hui Lien, 2015). The relationship within supply chain is not present a significant effect on KCM which is supported the study of Thomas & Wood (2014) that external sources of knowledge are less influenced on KCM. However, the internal ability to acquire and use the knowledge within hotel supply chain needs further study.

Conclusions

This research studies the influence of internal capability to knowledge management capacity and the influence of knowledge management to service innovation performance. The result reveals that internal capability has a positive effect toward capacity which proposes that in

order for knowledge management capacity to be efficient, factors such as human capability and relationship with association and institute are required. Hotel should provide enough training to improve employees' skills related to their responsible job and also have a positive attitude to perform their job. Building a strong relationship toward association and institute both private and public also play an important part in improving the knowledge management capacity.

Knowledge management has a positive influence toward service innovation performance. Process including knowledge acquisition and knowledge exploitation help enhance the service innovation performance. Knowledge acquisition can come from many different sources such as existing knowledge inside organization, supplier, customer, and competitor. From the regression result, only a slight change of knowledge management can increase the quality of hotel's service innovation performance dramatically.

From the customer point of view, service quality is a very important part to differentiate hotels from each other as hotels are in the service industry. To increase the degree of customer satisfaction, hotels should emphasize the quality of their service. To improve hotel service quality, both knowledge acquisition and knowledge exploitation are significant factors. The result of this study shown that knowledge acquisition is slightly greater effect to service innovation performance than knowledge exploitation. Hotel should pay attention to human capacity as the result shows the highest efficiency among other components included in internal capability. In conclusion, improving human capacity aim to update the knowledge acquisition and exploitation which further effect to service innovation performance. Hence, the customer satisfaction level will be increasing as the level of service innovation performance increase.

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