THE EFFECTS OF DIRECT AND INDIRECT SUPPLY CHAIN COLLABORATION ON HOSPITALITY SERVICE INNOVATION

ผลกระทบของความร่วมมือทางตรงและทางอ้อมในโซ่อุปทาน
ต่อนวัตกรรมบริการในธุรกิจที่เน้นการให้บริการ

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Abstract

A firm that can manage a diversity of supply chain collaboration dynamically can then reap better innovation performances. However, the knowledge on how companies perform both activities on stimulating innovations, in particular, the hospitality industry is still scant. The objective of the study is to investigate the effects of direct and indirect supply chain collaboration on service innovation. The data were collected by a 94 stratified questionnaire survey in Bangkok, Thailand. The result, analyzed by regression technique, indicates that the effect of collaboration with direct linkages, and with indirect linkages can improve a capability's firm on continuously stimulating service innovations. The findings help to understand and broaden knowledge in theory and practice on how hospitality firms manage the opportunity for competitive advantage.

Keywords: Innovation capability, Supply chain collaboration, Supply chain innovation, Hospitality industry

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บทคัดย่อ

องค์กรธุรกิจที่สามารถจัดการความหลากหลายของความร่วมมือในโซ่อุปทานได้นั้น เป็นส่วนช่วยให้บริษัท สามารถพัฒนานวัตกรรมได้อย่างต่อเนื่อง อย่างไรก็ตามองค์ความรู้สำหรับการจัดการความหลากหลายของรูปแบบ ความร่วมมือที่มีผลต่อนวัตกรรมนั้นยังมีอยู่น้อย โดยเฉพาะอย่างยิ่งในอุตสาหกรรมโรงแรมและการให้บริการ วัตถุประสงค์สำหรับการวิจัยครั้งนี้คือ การวิเคราะห์หาผลกระทบของรูปแบบความร่วมมือทั้งทางตรงและทางอ้อม ในโซ่อุปทานต่อการเกิดนวัตกรรมการบริการ ข้อมูลเชิงสำรวจที่ทำการเก็บจากตัวอย่างโรงแรมจำนวน 94 บริษัท ได้นำมาเพื่อตรวจสอบเชิงประจักษ์ด้วยเทคนิคการวิเคราะห์สมการเชิงเส้น ผลจากการวิเคราะห์พบว่า องค์กรที่มี การร่วมมือกับหน่วยงานอื่นในโซ่อุปทานนั้นโดยเฉพาะหน่วยงานที่มีส่วนเกี่ยวข้องทางตรง เช่น ซัพพลายเออร์และ ลูกค้านั้นมีส่วนเพิ่มประสิทธิภาพในการพัฒนานวัตกรรมการบริการในอุตสาหกรรมโรงแรมและการให้บริการ ผลวิจัย ที่ได้จากการวิเคราะห์มีประโยชน์ต่อองค์ความรู้ทางทฤษฎีและการนำไปใช้ในการพัฒนาองค์กรในภาคธุรกิจการท่องเที่ยว และบริการ ให้มีโอกาสสร้างความได้เปรียบเชิงแข่งขันมากยิ่งขึ้น

คำสำคัญ: ความสามารถในการจัดการนวัตกรรม ความร่วมมือในห่วงโซ่อุปทาน นวัตกรรมห่วงโซ่อุปทาน อุตสาหกรรมโรงแรมและการให้บริการ

Introduction

Innovations become one of the primary sources for competitive advantages for most organizations (Agarwal, Erramilli & Dev, 2003). Researchers state that managing innovations move beyond static approaches for specific or ad-hoc purposes to dynamic ones for sustaining advantages over times (Camison & Monfort-Mir, 2012; Lillis, SzweJczewski & Goffin, 2015). For successfully managing innovations, current studies have indicated the necessity of improving knowledge search process and learning ability as an important internal factor for firms that desire to improve services faster than the rivals (Cooper, 2006; Creveni, Palm & Schilling, 2011).

Literature also suggests that firms cannot rely on the internal resources and capability since they are limited (Ahuja, 2000; Machikita & Ueki, 2011). Therefore, companies should open their boundary up to seek and search the surplus knowledge (Cao & Zhang, 2011; Jeenananta, Ueki & Visanvetchakij, 2013). One of the suitable external sources is collaborative relationships with various supply chain members. Previous research has shown the positive pieces of evidence of supply chain collaboration on enhancing internal capabilities, for example, an ability to search, learn and exploit to better innovation performances (Aldebert, Dang & Longhi, 2011; Cohen & Levinthal, 1990; Wagner, 2013). Wagner (2013) studied the effects of various types of supply chain partner on radical and incremental innovations in logistics. His research found that to collaborate with customers, suppliers, and competitors contribute to service improvement, while the use of universities and consultants does not affect innovation performance. Cao & Zhang (2011) showed the positive interplay effects between collaboration, innovation, and firm performance.

By productively working with right partners, the focal firms can improve their products and services effectively. However, the question is still open, and lack of central understanding of how-how external linkages affect innovation process in hospitality context (Hjalager, 2010; Krizaj, Brodink & Bukovec, 2014).

Researching innovation process and factors in hospitality sector is warranted and contributed to the literature. This is because the nature of hospitality industry is totally distinguished from other industries such as manufacturing-based industry (Gallouj & Savona, 2009; Liburd, 2012). In hospitality context, innovations are very complex because of intangible and multiple dimensions properties (Creveni, Palm & Schilling, 2011; Tang, Wang & Tang, 2015). Furthermore, the new ideas cannot be protected by any patents. Thus, the positive results of factor affecting innovations in production companies are different when comparing with hospitality organizations (Nieves, Quintana & Osorio, 2014).

To address the research gap, in this study, we make a first attempt to shed light on the knowledge and understanding on how collaboration can enhance innovation process. The purpose of the study is therefore to empirically examine the impacts of direct and indirect collaborations on developing innovation. We use a questionnaire to answering the following research questions: What is the impact of direct and indirect collaborations on various types of innovations in the hospitality industry? This is significantly different from prior studies that we have proposed the two constructs: direct and indirect collaborations, and empirically examined the consequence between constructs. The results will provide valuable knowledge for theory and practice.

This paper is structured as follows. Section 2 describes the theory backgrounds and builds a set of hypotheses. Next, the methodology of the empirical study is described in section 3. The discussion of the results is then presented in section 4. The last section provides the concluding remarks, managerial implications and possible questions for future research.

Literature reviews and hypotheses

Essentially, the main characteristics of hospitality businesses that distinguish them from other service firms are the customers (tourists). They can easily select the most preferred products from around the world (Tang, Wang & Tang, 2015). Furthermore, tourism organizations can visualize easily what others are doing (Zhang, Song & Huang, 2009).

Innovation is then becoming a key competitive success factor. Besides, management committees have realized the necessity of developing a never-ending plan for achieving better service quality to customers and improving services faster than rivals (Agarwal, Erramilli & Dev, 2003).

Innovation in hospitality context can be defined as "the process of bringing any new, problem-solving idea into use. The idea for reorganizing, cutting cost, putting in new budgetary systems, improving communication or assembling products in teams" (Hjalager, 2010).

In the current literature, Hjalager (2010) proposed the definitions of innovation's categories following the note in OECD and Eurostat (2005). Due to the limitation of the pages, we discuss only the concept of service innovation in hospitality. Service (product) refers to "changes directly observed by the customers and regarded as new; either in the sense of never seen before or new to the particular enterprise or destination (Hjalager, 2010).

The main stream of innovation research on hospitality context shows the positive effects of internal factors such as organizational factors (Grissemann, Plank & Brunner-Sperdin, 2013) and human capabilities (Gomezelj, 2016) on helping firms improving innovations. As the new design services cannot be documentary recorded, the representation of knowledge is required in order to be stimulating innovation continuously (Hjalager, 2010).

Literature also suggests that hospitality firms cannot solely rely on employing the internal knowledge since its limitations (Thomas & Wood, 2014). Therefore, the necessity of utilizing external sources of knowledge and ability such as an ability to seek, learn and apply the external knowledge obtained to proper uses in the organization as absorptive capacity is then necessary (Cohen & Levinthal, 1990; Martinez-Ros & Orfila-Sintes, 2009).

Theoretical perspective of open innovation supports the importance of external knowledge. Open innovation states that useful tool of external knowledge among various companies such as suppliers and universities for innovations distributes outside the firms' boundary (Chesbrough, 1990, 2003). Therefore, "*firms can no longer afford to rely on their own internal ideas. Innovation must shift from closed innovation, where firms do everything themselves and the success of innovation is determined by internal ideas and the control of internal resources, to open innovation*" (Wagner, 2013). By combining internal with external ideas, firms are better able to achieve sustainable competitive advantage (Chesbrough, 2003; Thomas & Wood, 2014).

Several studies confirmed the direct links to external sources on fostering internal capability (Mattsson & Orfila-Sintes, 2014; Munksgaard, Stentoft & Paulaj, 2014). Nieves, Quintana & Osorio (2014) argued that human capital as learning ability had a positive impact on product and organizational innovations. Nieves & Segarra-Cipres (2015) investigated the impact of external relationships on management innovation. The authors confirmed that human resources and the capabilities of the firm to integrate knowledge, and networking were the keys factors.

From the literature on open innovation, we can conclude that the effective collaborative relationships can increase the improvement of learning ability of firms. Therefore, we hypothesize as of the following:

Hypothesis 1: Supply chain collaboration has a positive impact on service innovations.

Hypothesis 1a: Supply chain collaboration

with direct linkages has a positive impact on service innovation.

Hypothesis 1b: Supply chain collaboration has a positive impact on service innovation.

Research methodology

Sample and data collection

The unit of analysis in this study is hotel firms in Thailand. The sector was chosen as our empirical background for several reasons.

First, innovation is critically paramount for hotel organization. Since the nature of running the accommodations is, again, easy to provide the service operations, the numbers of operating hotels including the registered and non-registered firms are then gradually growth over the past five years. To offer the fundamental services to customers are neither insufficient for the registered firm to satisfy customers, nor inadequate to compete with the others. Therefore, the hotel's firms have to keep maintaining advantages by continuously improving service that is higher than fundamental standards and expectations.

Second, among types of tourism business units, the hotel sector in Thailand is the main contributor to service industries generating the higher revenues to the GDP of Thailand in the last ten years.

Last, given an excellent location destination, many tourists always come to take a vacation, to transit, and also to have a business meeting in Thailand. Referring the benefits as discussed, the study of tourism innovation will yield the valuable knowledge to the current literature.

To examine the proposed hypotheses, the data were collected by a cross-sectional questionnaire designing included four main parts. It consists of demographic questions, the questions related to supply chain collaboration and innovation. Before implementation, the pilot test was conducted by in-depth interviewing with ten selected hotel managers and top management positions to ensure that the instrument has under specifications of reliability and validity (Bollen & Biesanz, 2002; Podsakoff et al., 2003). The possible bias test that non-response bias was not present in the data.

In the data gathering processes, 200 self-administered questionnaires were mailed to the respondents based on the five-to-one ratio of independent variables (Baron & Kenny, 1986). The lists of the population were obtained from the hotel database of Thailand. The sample is hotel firms locating around Bangkok, Thailand. The data collection process carried out between September 2014 and January 2015. During the time frame, the follow-up checking was handled by phone in three times. We consequently received 94 valid responses back and used them for analyzing and testing the proposed hypotheses.

To provide the stable data, all instruments were adapted from the literature and were modified to measure the performances appropriately. Supply chain collaboration was constructed to evaluate the relationship degrees to which firms work with another company in different supply chain functions as a source of innovation. The variable was adapted the

scale used previously by Medina-Munoz & Garcia-Falcon (2000), and Nieves, Quintana & Osorio (2014). In this study, we characterized collaborations into two main types: first is the collaboration with direct entities including with customers (SCC1), with competitors (SCC2), with local suppliers (SCC3), and with foreign suppliers (SCC4). Second is the collaboration with indirect linkages: with universities (SCC5), with research institutes (SCC6), with tourism organizations (SCC7), and with academics (SCC8).

The scale measuring service innovation was adapted the contents on how to implement the innovation data as suggested in Oslo Manual (OECD, 2005). Service innovation is defined as the degrees of new developments in providing successful services and the extents of improving existing implemented services to the desired customers (Tang, Wang & Tang, 2015; OECD, 2005). The respondents could rate their evaluation based on a five-point Likert scale from 1 (very low)

To 5 (very tight) for supply chain collaboration, and 1 (less important) to 5 (high important) for service innovation.

Table 1 Means, standard deviations, and factor loadings for the items

Scale/measurement item	Means	S.D.	Factor Loading
Collaboration with direct linkages (α = .905); (KMO = .792)			
Collaboration with customers (SCC1)	4.075	.751	.710
Collaboration with competitions (SCC2)	3.490	.813	.780
Collaborations with local suppliers (SCC3)	3.415	1.130	.829
Collaborations with local suppliers (SCC4)	3.170	1.233	.733
Collaboration with indirect linkages			
Collaboration with academics (SCC5)	3.000	1.000	.895
Collaboration with research institutes (SCC6)	3.075	1.005	.910
Collaboration with local tourism communities (SCC7)	3.351	1.003	.757
Collaboration with foreign tourism communities (SCC8)	3.213	.895	.780
Service innovation (α = .845); (KMO = .750)			
Often improve new features for better services (SI1)	3.692	.904	.707
Your competitors adopt your services as a service model (SI2)	3.575	.664	.685
Additional services proposed beyond customers 'needs (SI3)	3.660	.712	.734

Result and analysis

Sample characteristics

In the sample of 94 hotel firms, 70.21% were independent hotels and the rest (29.79%) is chain hotels. Four and three-star are the most accounting for 39.36% and 34.04%, respectively. The sample also indicated that most are medium and large hotel sizes regarding the number of rooms (31.91% and 37.23%, respectively), and the number of employees is in small (less than 50 employees) and medium (less than 100 employees) capacities (29.78%

and 30.85%). Of the sample respondents, 85.15% worked as managers including human resources managers and general managers.

Measurement description and reliability analysis

Before using the data collected for further analysis, the reliability analysis and dimensionality reduction were performed. After purification of the items, we calculated Cronbach's alpha. A cut-off value of .70 is widely accepted (Hair et al., 2006).

Table 2 Means, standard deviations, and correlations

Variables	Means	S.D.	Collaboration with Direct linkages	Collaboration with Indirect linkages
Collaboration with Direct linkages	3.538	0.384		
Collaboration with indirect linkages	3.160	0.155	1.000[**]	
Service innovation	3.642	0.060	.861[**]	.160[**]

[**]Correlation is significant at the 0.01 level (1-tailed).
[*]Correlation is significant at the 0.05 level (1-tailed).

All scales showed reliability above .8 (Hair et al., 2006). The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy is good for all levels with a cut-off value of .60 (Hair et al., 2006). The measurement items and factor loadings are shown in Table 1. The result of confirmatory factor analysis (CFA) indicates an acceptable fit for the three-factor model.

Table 2 presents means, standard deviations, and correlation matrix for all variables. From the descriptive statistics, first, the collaboration

with direct linkages is used as the external sources (3.538), more than collaboration with indirect ties (3.160). And service innovation (3.642) is most concerned from the sample. It strongly indicates that service innovation is the most used to sustain the competitive business advantages.

The result shows significant correlations effect between dependent and independent variables. There is a relative correlation between three constructs in this study ranging from

0.160 to 0.861 shown in Table 2. In the analysis, for example, the correlation coefficient between collaboration with indirect linkages and service innovation shows a relatively high level of the correlation.

Regression analysis

In this study, we compare two models between the collaboration with direct linkages, and the collaboration with indirect linkages (independent variables) on service innovation (dependent variable).

The result of the test for hypotheses states that the use of collaboration as an external source of innovation, in particular, only collaboration with direct supply chain linkages is positively related to improving service innovation capability. The estimated effect of collaboration with direct supply chain linkages on service innovation is highly significant with a positive sign (β = .589; $p < 0.05$), which is higher than collaboration with indirect linkages (β = .339; $p < 0.05$). The R-square measurement shows the high degree-of-fitness (R^2 = 0.55). The analysis clearly supports hypotheses 1a and 1b.

Discussion and implications

We draw on the notion of open innovation. This study advanced the notion of the concept by examining whether the different effects of collaborations on stimulating service innovation in a hospitality context. The discussion of the results and implications is organized around the proposed hypotheses. First, the finding supports the hypothesis that effective collaboration with external linkages, in particular, with direct supply chain members to your business, can promote better service innovation capability. The findings support the views of Nieves, Quintana & Osorio (2014) and Nieves & Segarra-Cipres (2015) for example, the front and back staffs have more opportunities to gain surplus knowledge to improve their working routine operations that can generate a new service to customer appropriately (Krizaj, Brodink & Bukovec, 2014), and also to initiate the successful service innovation rapidly than competitors (Thomas & Wood, 2014). In summarize, our study adds to the literature by showing the supply chain collaboration can be a valuable source for the firm in improving service innovation capability.

Nevertheless, there are several reasons why the collaboration with indirect linkages such as research institutes and academic has a small impact on innovation. Firstly, the nature of academics and employees of hospitality companies are dissimilar. Therefore, academics might not understand clearly and have little knowledge in practical operations since they are either customers or users of the services once they are developed (Wagner, 2013). Secondly, the perspective of academics and research institutes will be a valuable source for the development of innovation strategy in the future. Therefore, the benefits will not show in the current services. Second, this study extends the concept of absorptive capacity and dynamic capability by empirically examining the learning routines on stimulating innovations.

Our finding fulfills the knowledge in the literature on how hospitality firms gain the existing knowledge that distributes in organizations and spillovers outside, and transform it to proper users effectively. In sum, we can imply that the company that has the better collaboration with direct linkages, the better innovation, and business performance.

Concluding remarks and limitations

This study aims at examining how various types of collaboration have a positive impact on stimulating service innovation at the firm level. The empirical findings show that effective direct collaboration with customers, competitors, local suppliers and foreign suppliers has a positive link on service innovation. When firms focus on improve learning ability productively, can then gain the better innovation performances.

While our study contributes considerably to the supply chain management and innovation management literature, especially for Southeast Asia, there are some limitations for several reasons. First, our sample is confined to the hotel and hospitality industry in Thailand. This may lead the weak results and the bias of the analysis. Hence, we will re-examine our research model by comparing with other countries in the further investigations. Despite this limitation, our results can be accepted regarding the important requirements of statistical verifications. Second, although this study founds a positive casual inference, the further study needs to be confirmed by longitudinal analysis. Last, this study does not consider the effects of innovation promoting indicators on financial and quantitative performances such as profit and gross margin which are mentioned extensively in the literature (Grissemann, Plank & Brunner-Sperdin, 2013). Such important issues are worth for further research.

References

Agarwal, S. & Dev, C. S. (2003). Market orientation and performances in service firms: the role of innovation. *Journal of Service Marketing*, *17*(1), 68-82.

Agarwal, S., Erramilli, M. K. & Dev, C. S. (2003). Market orientation and performances in service firms: the role of innovation. *Journal of Service Marketing*, *17*(1), 68-82.

Ahuja, G. (2000). Collaboration networks, structural holes and innovation: a longitudinal Study. *Administrative Science Quarterly, 45*(3), 435-455.

Aldebert, B., Dang, R. J. & Longhi, C. (2011). Innovation in the tourism industry: The case of Tourism@. *Tourism Management, 32*(5), 1204-1213.

Baron, R. M. & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: conceptual, strategic, and statistical considerations. *J Pers Soc Psychol, 51*(6), 1173-1182.

Bollen, K. A. & Biesanz, J. C. (2002). A note on two-stage least square estimator for higher-order factor analyses. *Sociological Method and Research*, *30*(4), 568-579.

Camison, C. & Monfort-Mir, V. M. (2012). Measuring innovation in tourism from the Schumpeterian and the dynamic capabilities perspectives. *Tourism Management*, *33*(4), 776-789.

Cao, M. & Zhang, Q. (2011). Supply chain collaboration: impacts on collaborative Advantage and firm performance. *Journal of Operation Management*, *29*, 163-180.

Chesbrough, H. W. (1990). The case for open services innovation: the commodity trap. *California Management Review, 53*(1), 5-20.

Chesbrough, H. W. (2003). *Open innovation: the new imperative for creating and profiting from technology*. Boston, MA: Harvard Business School Press.

Cohen, W. & Levinthal, D. (1990). Adsorptive capacity: a new perspective on learning and innovation. *Administrative Science Quarterly, 35*(1), 128-152.

Cooper, C. (2006). Knowledge management and tourism. *Annals of Tourism Research*, *33*(1), 47-64.

Creveni, L., Palm, K. & Schilling, A. (2011). Innovation management in service firms: a research agenda. *Service Business*, *5*(2), 177-193.

Frehse, J. (2005). Innovative product development in hotel operations. *Journal of Quality Assurance in Hospitality & Tourism*, *6*(3/4), 129-146.

Gallouj, F. & Savona, M. (2009). Innovation in services: a review of the debate and a research agenda. *Journal of Evolutional Economics*, *19*(2), 49-172.

Gomezeij, D. O. (2016). A systematic review of research on innovation in hospitality and tourism. *International Journal of Contemporary Hospitality Management, 28*(3), 516-558.

Grissemann, U., Plank, A. & Brunner-Sperdin, A. (2013). Enhancing business the performance of hotels: the role of innovation and customer orientation. *International Journal of Hospitality Management*, *33*, 347-356.

Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E. & Tatham, R. L. (2006). *Multivariate data analysis* (6th ed.). Upper Saddle River, NJ: Pearson Prentice Hall.

Hjalager, A. M. (2010). A review of innovation research in tourism. *Tourism Management, 31*(1), 1-12.

Jeenanaunta, C., Ueki, Y. & Visanvetchakij, T. (2013). Supply chain collaboration and firm performance in Thai automotive and electronics industries. *Global Business Perspectives*, *1*(4), 418-432.

Krizaj, D., Brodink, A. & Bukovec, B. (2014). A tool for measurement of innovation newness and adoption in tourism firms. *International Journal of Tourism Research, 16*(2), 113-125.

Liburd, J. J. (2012). Tourism research 2.0. *Annals of Tourism Research, 39*(2), 883-907.

Lillis, B., Szwejczewski, M. & Goffin, K. (2015). The development of innovation capability in services: research propositions and management implications. *Operation Management Research*, *8*(1), 48-68.

Machikita, T. & Ueki, Y. (2011). Innovation in linked and non-linked firms: effects of Variety of linkages in East Asia. *International Journal of Industrial Economics*, *3*(1), 77-102.

Martínez-Ros, E. & Orfila-Sintes, F. (2009). Innovation activity in the hotel industry. *Technovation*, *29*(9), 632-641.

Mattsson, J. & Orfila-Sintes, F. (2014). Hotel innovation and its effect on business Performance. *International Journal of Tourism Research, 16*(4), 688-398.

Medina-Munoz, D. & Garcia-Falcon, J. M. (2000). Successful relationships between Hotels and agencies. *Annals of Tourism Research, 27*(3), 737-762.

Munksgaard, K. B., Stentoft, J. & Paulaj, A. (2014). Value-based supply chain Innovation. *Operations Management Research, 7*(3), 50-62.

Nieves, J. & Segarra-Cipres, M. (2015). Management innovation in the hotel industry. *Tourism Management, 46*, 51-58.

Nieves, J., Quintana, A. & Osorio, J. (2014). Knowledge-based resources and innovation in the hotel industry. *International Journal of Hospitality Management, 38*, 65-73.

Nunkoo, R., Ramkissoon, H. & Gursoy, D. (2013). Use of structural equation modeling in tourism research: the past, present, and future. *Journal of Travel Research, 52*(6), 759-771.

OECD. (2005). *The measurement of scientific and technological activities*. In Proposed guidelines for collecting and interpreting technological innovation data. OECD/European Commission EUROSTAT: Paris.

Orfila-Sintes, F. & Mattsson, J. (2009). Innovation behavior in the hotel industry. *Omega, 37*(2), 380-394.

Orfila-Sintes, F., Crespí-Cladera, R. & Martínez-Ros, E. (2005). Innovation activity in the hotel industry: Evidence from the Balearic Islands. *Tourism Management, 26*(6), 851-865.

Pechlaner, H., Fischer, E. & Hammann, E. M. (2005). Leadership and innovation processes-development of products and services based on core competencies. *Journal of Quality Assurance in Hospitality & Tourism, 6*(3/4), 31-57.

Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y. & Podsakoff, N. P. (2003). Common Method biases in behavioral research: a critical review of the literature and recommended remedies. *Journal of Applied Psychology, 88*(5), 879-903.

Soosay, C. A., Hyland, P. W. & Ferrer, F. (2008). Supply chain collaboration: capabilities for continuous innovation. *Supply Chain Management, 13*(2), 160-169.

Sundbo, J. (1997). Management of Innovation in Services. *Service Industries Journal, 17*(3), 432-455.

Tang, T. Q., Wang, M. & Tang, Y. Y. (2015). Developing service innovation capability in the hotel industry. *Service Business, 9*(1), 97-113.

Thomas, R. & Wood, E. (2014). Innovation in tourism: Re-conceptualizing and measuring the absorptive capacity of the hotel sector. *Tourism Management, 45*, 39-48.

Wagner, S. M. (2013). Partners for business-to-business service innovation. *IEEE Transactions on Engineering Management, 60*(1), 113-123.

Zhang, X., Song, H. & Huang, G. Q. (2009). Tourism supply chain management: A new research agenda. *Tourism Management, 30*(3), 345-358.

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