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以服務主導邏輯為觀點之服務創新整合模式

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中 文 摘 要 ： 服務創新是一個多元複雜的學科，而創新的本質及過程在過去十年間已有大幅改變。根據服務主導導向(S-D)邏輯，本研究發展一整合性的服務創新模式。S-D邏輯引導我們將所有種類及型式的創新、有形及無形的服務視為超越心理的模式。本研究提出服務主導導向及知識資源將促成服務創新，而動態服務創新能力對於以上之關係具有中介之作用，再者服務創新對於組織財務與非財務績效具有顯著影響，而知識分享、知識整合機制、組織權變與環境條件等四個因素，將成為服務創新與其前置及結果變數之調解變數。
利用224位零售業之經理人作為研究樣本，本研究之主要結論如下：首先服務主導導向邏輯及知識資源為影響動態服務創新能力及服務創新之最重要因素。動態服務創新能力及服務創新將進一步影響組織績效，知識分享及知識整合機制扮演很重要的干擾作用，能夠強化動態服務創新能力對於服務創新之影響。環境要素及組織要素是另外兩個重要之干擾變數，能夠強化服務創新對於組織績效之影響。

中 文 關 鍵 詞 ： 服務創新、服務主導導向、動態服務創新能力、知識資源、組織績效

英 文 摘 要 ： Service innovation is a complex field which represents various disciplines. However, the nature and process of innovation has radically shifted in the past decade. Based on service-dominant (S-D) logic, this study develops an integrated model of service innovation. S-D logic allows us to view service as a transcending mental model for all types and forms of innovation, either tangible or intangible. Based on a synthesis of literature review, a research model is proposed in this study. The research model consists of antecedents, mediator, moderators, and consequences of service innovation. This study proposes that service-dominant orientation and knowledge resources enhance service innovation, while dynamic service innovation capabilities mediate the effects of S-D orientation and knowledge resources on service innovation. This study further the proposes that service innovation has a positive effect on firm performance, while knowledge sharing, knowledge integration mechanism, organizational contingencies, and environmental conditions serve as moderators of the relationship between service innovation and its antecedents and consequences. Fourteen hypotheses are proposed in this study.
Using 224 managers from retailing industry as the survey sample, the results of this study concluded that service - dominant orientation and knowledge resources are two of the critical variables that influence dynamic service innovation capability and service innovation, which further impacts on organizational performance. In addition, knowledge sharing and knowledge integration mechanism can

serve as two important moderators that amplify the influence of dynamic service innovation capability. Environmental contingencies and organizational contingencies can serve as another two moderators that accelerate the influence of service innovation on organizational performance.

英文關鍵詞：service innovation, service-dominant orientation, dynamic service innovation capabilities, knowledge resources, organizational performances.

以服務主導邏輯為觀點之服務創新整合模式

An Integrative Model of Service Innovation from Service-Dominant Logic Perspective

中文摘要

服務創新是一個多元複雜的學科，而創新的本質及過程在過去十年間已有大幅改變。根據服務主導導向(S-D)邏輯，本研究發展一整合性的服務創新模式。S-D 邏輯引導我們將所有種類及型式的創新、有形及無形的服務視為超越心理的模式。本研究提出服務主導導向及知識資源將促成服務創新，而動態服務創新能力對於以上之關係具有中介之作用，再者服務創新對於組織財務與非財務績效具有顯著影響，而知識分享、知識整合機制、組織權變與環境條件等四個因素，將成為服務創新與其前置及結果變數之調解變數。

利用 224 位零售業之經理人作為研究樣本，本研究之主要結論如下：首先服務主導導向邏輯及知識資源為影響動態服務創新能力及服務創新之最重要因素。動態服務創新能力及服務創新將進一步影響組織績效，知識分享及知識整合機制扮演很重要的干擾作用，能夠強化動態服務創新能力對於服務創新之影響。環境要素及組織要素是另外兩個重要之干擾變數，能夠強化服務創新對於組織績效之影響。

關鍵字：服務創新、服務主導導向、動態服務創新能力、知識資源、
組織績效

ABSTRACT

Service innovation is a complex field which represents various disciplines. However, the nature and process of innovation has radically shifted in the past decade. Based on service-dominant (S-D) logic, this study develops an integrated model of service innovation. S-D logic allows us to view service as a transcending mental model for all types and forms of innovation, either tangible or intangible. Based on a synthesis of literature review, a research model is proposed in this study. The research model consists of antecedents, mediator, moderators, and consequences of service innovation. This study proposes that service-dominant orientation and knowledge resources enhance service innovation, while dynamic service innovation capabilities mediate the effects of S-D orientation and knowledge resources on service innovation. This study further the proposes that service innovation has a positive effect on firm performance, while knowledge sharing, knowledge integration mechanism, organizational contingencies, and environmental conditions serve as moderators of the relationship between service innovation and its antecedents and consequences. Fourteen hypotheses are proposed in this study.

Using 224 managers from retailing industry as the survey sample, the results of this study concluded that service -dominant orientation and knowledge resources are two of the critical variables that influence dynamic service innovation capability and service innovation, which further impacts on organizational performance. In addition, knowledge sharing and knowledge integration mechanism can serve as two important moderators that amplify the influence of dynamic service innovation capability. Environmental contingencies and organizational contingencies can serve as another two moderators that accelerate the influence of service innovation on organizational performance.

Keywords: service innovation, service-dominant orientation, dynamic service innovation capabilities, knowledge resources, organizational performances.

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1. Introduction

1.1 Research Background and Motivation

Service innovation is a complex field which represents various disciplines, including marketing (e.g., Berry, et al., 2006; Nijssen, et al., 2006; Oliveira & Von Hippel, 2011), economics (e.g., Cainelli, et al., 2006; Gallouj, 2002; Gallouj & Savona, 2008), information systems (e.g., Alter, 2008; Lyytinen & Rose 2003; Rai & Sambamurthy, 2006), operations (e.g., Metters & Marucheck, 2007; Oke, 2007), and strategy (e.g., Dorner, et al., 2011). Scholars from multiple disciplines have also been exploring multiple dimensions of service innovation, following unique approaches, building various conceptual and analytical frameworks, and adopting distinct perspectives (Rubalcaba, et al., 2012).

Ordanini & Parasuraman (2011) proposed about a perspective of service innovation, called service-dominant (S-D) logic based on the "synthesis" perspective. They stated that "the S-D logic is appropriate to study service innovation because it moves away from traditionally rooted perspectives about technological product inventions'" (p. 4). According to S-D logic, service is the central mechanism of any economic exchange which is a process of specialized competences for the benefit of value network partners (Vargo & Lusch, 2004). Value actualizations can be provided, either directly through intangible services or indirectly through tangible goods (Ordanini & Parasuraman, 2011; Vargo & Lusch, 2006). S-D logic allows us to view service as a transcending mental model for all types and forms of innovation, either tangible or intangible (Lusch & Nambisan, 2015). The distinction between service innovation and product (goods) innovation is no longer appropriate. It offers conceptualization of service as a co-produced process and co-created values involves the application of competences (e.g., knowledge and skills) which supports a new perspective for service innovation (Drejer, 2004; Ordanini & Parasuraman, 2011; Vargo & Lusch, 2006).

However, previous empirical studies on service innovation have narrowed conceptual frameworks which may not able to capture the complexities of service innovation (Baker & Sinkula, 2007). Research on broader frameworks that includes antecedents and consequences of service innovation are needed (Szymanski, Kroff, & Troy 2007). Furthermore, empirical findings in regard to the antecedents of service innovation are limited and inconclusive (Ordanini & Parasuraman, 2011). Therefore, this study attempts to extend existing service innovation literature by developing, proposing, and empirically testing an integrated framework of antecedents, mediator, moderators, and consequences of service innovation based on S-D logic (Vargo & Lusch, 2004; 2008) through qualitative study, author co-citation analysis, and empirical study.

According to S-D logic, service innovation should be conceptualized based on the application of competences, such as knowledge and skills guided by foundational premises (FPs) to promote organizational effectiveness (Drejer, 2004; Ordanini & Parasuraman, 2011). Those foundational premises are as follow:

1. FP1: Service is the fundamental basis of exchange.
2. FP2: Indirect exchange masks the fundamental basis of exchange.
3. FP3: Goods are distribution mechanisms for service provision.
4. FP4: Operant resources are the fundamental sources of competitive advantage.
5. FP5: All economies are service economies.
6. FP6: The customer is always the co-creator of value.
7. FP7: The enterprise cannot deliver value, but only offer value propositions.
8. FP8: A service-centered view is inherently customer-oriented and relational.
9. FP9: All social and economic actors are resources' integrators.
10. FP10: Value is always uniquely and phenomenologically determined by the beneficiary.

Statement of FP1, FP4, FP6 and FP8 are highlighted as fundamental ideas in this study. Based on those four FPs this study proposes the following main competences or antecedents which may enhance service innovation. Those competences are service-dominant (S-D) orientation (Karpen, Bove, & Lukas, 2012), dynamics service innovation capabilities (Janssen, Castaldi, & Alexiev, 2015), and knowledge resources (Melancon, et al., 2010). Detailed explanations are as follow.

The first antecedent of service innovation is service-dominant (S-D) orientation. According to FP6 above, the customer is always the co-creator of value which implies that value creation is interactional. The service-centered view also argued for customer-determined benefit as what FP8 stated (Vargo & Lusch, 2004; 2008). Therefore, customers are the centered of service practices. In 2012, Karpen, Bove, & Lukas developed service-dominant (S-D) orientation concept. S-D orientation is a co-creation capability which results from a company's individuated, relational, ethical, empowered, developmental, and concerted interaction capabilities. S-D orientation enables a company to co-create value in service exchanges with its network partners and reflects an understanding meaningful interaction and reciprocal resource integration with value network partners (Karpen, et al., 2015). Therefore, this study proposes that S-D orientation enhances service innovation.

The second antecedent is knowledge resources. According to FP1 of S-D logic, service is the fundamental basis of exchange which implies the application of operant resources (knowledge and skills) as the basis for all exchange. FP4 also stated that operant resources are the fundamental source of

competitive advantage (Vargo & Lusch, 2004; 2008). These two fundamental premises highlight the need for knowledge resources and dynamic capabilities as operant resources to enhance service innovation practices. Having knowledge resources and dynamic capabilities allow a company to co-produce and co-create innovative values as well as to gain competitive advantage (Lusch, Vargo, & O'brien, 2007). Knowledge is one of the most important operant resources to co-create and co-produce new values (Vargo & Lusch, 2004; Lusch, Vargo, & O'brien, 2007). In order to produce innovative service, knowledge needs to be integrated, shared, and exchanged among valued network partners (Kwok & Gao, 2005). Ordanini & Parasuraman (2011) found that knowledge integration mechanism contribute to innovation radicalness.

The third antecedent is dynamic service innovation capabilities. This study proposes that dynamic service innovation capabilities not only enhance service innovation but also mediate the effect of S-D orientation and knowledge resources on service innovation. In the innovation literature, dynamic capabilities play an important role (Crossan & Apaydin, 2010). Janssen, Castaldi, and Alexiev (2015) developed dynamic service innovation capabilities concept based on den Hertog, et al. (2010)'s extended set of capabilities. Dynamic service innovation capabilities can be defined as "those hard to transfer and imitate service innovation capabilities which organizations possess to develop, (re-)shape, (dis-)integrate and (re-)configure existing and new resources and operational capabilities" (den Hertog, et al., 2010, p. 498). This set of capabilities consists of sensing customer needs, sensing technological options, conceptualizing, co-producing and orchestrating, and scaling and stretching. Service innovation by nature is to find the answers of unmet needs from current and potential customers (Janssen, Castaldi, & Alexiev, 2015). Dynamic service innovation capabilities facilitate the company to explore and answer the unmet needs of customers by co-creating and co-producing those needs together with customers (Gronroos, 2006; Teece, 2007).

The consequence of service innovation is financial and non-financial performance. The link between innovation and performance has been widely studied, especially on tangible products (Menor, Tatikonda, & Sampson, 2002). However, since the multidimensional service innovation by Janssen, et al. (2015) is still new, empirical testing is needed. The increasing of organizational performance may imply that the company's service innovation is successful. Chen, Tsou, & Huang (2009) found that service delivery innovation contributes to firm performance. Ordanini & Parasuraman (2011) also found that radical service innovation and volume service innovation have a positive influence on firm performance. Therefore, this study proposes that service innovation has a positive influence on both financial and non-financial performances.

Furthermore, this study proposes four important moderating variables; knowledge sharing, knowledge integration mechanism, organizational contingencies, and environmental conditions. According to S-D logic, all resources, both internal and external resources, may support co-producing and co-creating values activities as long as the company can overcome resistances of resources and integrate those resources with other organization's resources (Lusch, Vargo, & O'brien, 2007). In the dynamic environment, value propositions offered by a company depend on the collection of resources and competences, by which the company can continually and continuously renew, create, integrate, and transform.

Knowledge sharing is the fundamental mean by which employees can mutually exchange their knowledge and contribute to knowledge application and innovation to further enhance companies' competitive advantage (Wang and Noe, 2010; Wang and Wang, 2012). Knowledge sharing practices in a company are very important to preserve valuable heritage, learning new techniques, solving problems, creating core competences and initiating new situations (Hsu, 2008; Hu, Horng, & Sun, 2009; Huang, Chen, & Stewart, 2010; Law & Ngai, 2008). Knowledge integration mechanism is a formal process and structure that facilitates the capture, analysis, and synthesis of various types of knowledge and the dissemination of that knowledge among different functional units—facilitate to combine firm capabilities with market knowledge to create a successful new service offerings, reduce inefficiencies during the innovation process, and help exploit the acquired knowledge for competitive advantage (Ordanini and Parasuraman, 2011). Knowledge integration mechanism allows companies to capture, analyze, and synthesize various types of knowledge and disseminate it among different functional units (Ordanini and Parasuraman, 2011). Therefore, this study proposes that knowledge sharing and knowledge integration mechanism positively moderate the relationship between service innovation and its antecedents and consequences.

Furthermore, organizational contingencies consist of service climate and service culture. These two contingencies may become internal resources for the company to enhance innovative service practices (Lusch, Vargo, & O'brien, 2007). An effective service climate is likely to lead to positive customer perceptions of the company, especially with more frequent interactions between the customer and the employee (Dietz, Pugh, & Wiley, 2004). Service culture emphasizes the role of culture in overall service related success and also serves as a mean to create and enhance service values delivery which focuses on fulfilling customers' needs and wants (Edvardsson & Enquist, 2002; Vargo & Lusch, 2004). Therefore, this study proposes that organizational contingencies which consist of service climate and service climate positively moderate the effect of service innovation on financial and non-financial performance.

Last but not least, the dominant marketing paradigm assumed that the external environments (i.e., legal, competitive, social, physical, technological, and others) are largely uncontrollable forces where the company needed to adapt (McCarthy, 1960). Most businesses tend to view external environments as resistances and forces rather than resources. In contrast to this paradigm, S-D logic views the external environments as resources needed by the company (Lusch, Vargo, & O'brien, 2007). The idea is to view the ecosystem as something to collaborate with in the co-creation of service as well as in integrating firm, individual, and public resources. A company needs to overcome resistances and proactively co-create these environments. A truly S-D company would view the entire community as resources to collaborate with and as the source of competitive advantage (Vargo & Lusch, 2004). This study proposes that environmental conditions which consist of environmental munificence, environmental dynamism, environmental heterogeneity, and environmental hostility positively moderate the effect of service innovation on financial and non-financial performance.

1.2 Research Objectives

Based on the research background and motivation above, there are several research objectives that can be drawn:

1. To test the effects of service-dominant orientation and knowledge resources in enhancing service innovation.
2. To examine the mediating effect of dynamic service innovation capabilities on the effects of service-dominant orientation and knowledge resources on service innovation.
3. To test the effect of multidimensional service innovation on organizational performance.
4. To examine the moderating effects of knowledge sharing and knowledge integration mechanism on the relationship between service innovation and its antecedents
5. To examine the moderating effects of organizational contingencies and environmental dynamisms on the relationship between service innovation and its consequences.

2. Literature Review

2.1 Theoretical Background

The service-dominant logic (S-D logic) was first introduced by Vargo and Lusch in 2004 who published their paper in Journal of Marketing entitled "Evolving to a New Dominant Logic for Marketing". This logic is based on Bastiat's (1964) fundamental idea:

"… the great economic law is this: Services are exchanged for services….It is trivial, very commonplace; it is, nonetheless, the beginning, the middle, and the end of economic science." (pp. 161-162)

This statement means that, in an exchange, all actors are deploying their skills and competencies when they offer their service to one another (Lusch & Nambisan, 2015). Service should be viewed as a broad concept of all exchanges and a transcending concept on which all of economic science should not be built as contradistinction from goods.

S-D logic is a service-centered thinking at a pre-theoretic stage and is an alternative paradigm to the traditional goods-centered paradigm which called good-dominant (G-D) logic (Lusch & Vargo, 2011; Vargo & Akaka, 2009). S-D logic conceptualizes business exchanges from a service-based perspective to understand economic exchange and value creation (Karpen, Bove, & Lukas, 2012; Navarro, Andreu, & Cervera, 2014). S-D logic views service as a process, a stand-alone variable, and a primary focus of exchange (Lusch, Vargo, & O'Brien, 2007). S-D logic's primary views are: people do an exchange to acquire the benefits of specialized competences or services; goods are transmitters of operant resources; the customer is a co-producer of service; value is perceived and determined by the customer; the customer is primarily an operant resource; and wealth is obtained through the application and exchange of specialized knowledge and skills.

2.2 Research Constructs

2.2.1 Service Innovation

In the past few years, scholars have gradually acknowledged the multidimensional and varied nature of service innovation (Argawal & Selen, 2011). Multidimensional approach is also known as synthesis perspective (Rubalcaba, et al., 2012). This study follows a multidimensional approach of service innovation as developed by Janssen, et al. (2015) which was first introduced by den Hertog, et al. (2010). They defined service innovation as "a new service experience of service solution that consists of a new (or considerably changed) service concept, new customer interaction, new value system, new revenue model, new organizational, or technological service delivery system" (Janssen, et al., 2015, p.97).

First dimension of service innovation is new service concept or service offering (Frei, 2008). Service concept or service offering is a value proposed and created by the service provider in collaboration with the customers (den Hertog, et al., 2010). The second dimension is new customer interaction. This interaction shows the role of customers in the value actualization. The interaction process between service provider and customer is an important source of innovation (den Hertog, et al., 2010). The third dimension is new value system or new business partners. Business partners mean actors involved in co-

producing a service (den Hertog, et al., 2010). New service values are actualized by combinationing service functions provided by providers, both parties in the value chain and actors in the wider value network (Chesbrough, 2003, Gawer and Cusumano, 2002; Huston and Sakkab, 2006; Jacobides et al., 2006; Tee and Gawer, 2009).

Furthermore, the fourth dimension is new revenue model. Company may have many new ideas of service concepts, however, only few of them becomes a successful service innovation (den Hertog, et al., 2010). Developing the right revenue model to support new service concept is important (Chesbrough, 2006; Johnson, et al., 2008; Paallysaho & Kuusisto, 2008). Heskett (1986) first introduced the service delivery system which refers to the service company's organizational structure (den Hertog, et al., 2010). This new organizational delivery system refers to innovation which begins from human resources and/or organization side of the company (den Hertog, et al., 2010). Finally, the last dimension is new technological delivery system. Information and communication technologies (ICTs) have supported numerous service innovations such as e-government, e-health, e-banking, self-service concepts, customization of service, and many others (den Hertog, et al., 2010).

2.2.2 Service-Dominant Orientation

In this study, service-dominant (S-D) orientation serves as one of important antecedents of service innovation. S-D orientation was first developed by Karpen, Bove, & Lukas in 2012. It represents a set of strategic capabilities from service-dominant logic perspective. Based on S-D logic, strategy is about choosing the best way to facilitate and enhance value co-creation with network partners (e.g., customers, suppliers, etc.) for mutual and long-term benefit (Karpen, Bove, & Lukas, 2012; Karpen, et al., 2015). Specifically, S-D orientation refers to "a co-creation capability, resulting from a firm's individuated, relational, ethical, empowered, developmental, and concerted interaction capabilities" (Karpen, Bove, & Lukas, 2012, p. 21). S-D orientation enables a company to co-create value in service exchanges with its network partners. Value co-creation can be defined as assisting customers to co-construct and engage in superior experiences (Vargo & Lusch, 2008). S-D orientation consists of six strategic themes such as individuated, relational, ethical, empowered, developmental, and concerted interaction capabilities (Karpen, Bove, & Lukas, 2012).

2.2.3 Dynamic Service Innovation Capabilities

Dynamic capability was first introduced by Teece, et al. (1997) and refers to a "the firm's ability to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments" (p. 516). Dynamic capability offers more dynamic version from resource-based view

(RBV) (e.g., Barney, 1991; Wernerfelt, 1984). Dynamic capability emphasizes more on a firm's ability to constantly adapt, innovate, and reconfigure resources they possessed. Dynamic capabilities have an important role in innovation literature (Crossan & Apaydin, 2010). However, conceptualization of dynamic capabilities in innovation focuses on large firms in manufacturing and high-technology industries (Hogan, et al., 2011). Scholars question whether innovation capabilities encountered in manufacturing and high-technology industries are relevant in a service context (Kindstrom, Kowalkowski, & Sandberg, 2013). In an attempt to conceptualize dynamic capabilities in service innovation, (Janssen, Castaldi, & Alexiev, 2015) developed dynamic service innovation capabilities concept which based on den Hertog, et al. (2010)'s the extended set of capabilities. Dynamic service innovation capabilities can be defined as "those hard to transfer and imitate service innovation capabilities which organizations possess to develop, (re-)shape, (dis-)integrate and (re-)configure existing and new resources and operational capabilities" (den Hertog, et al., 2010, p. 498). These dynamic service innovation capabilities are sensing customer needs, sensing technological options, conceptualizing, co-producing and orchestrating, and scaling and stretching.

2.2.4 Knowledge Resources

According knowledge-based view (KBV), knowledge is a strategic organizational resource (Kogut & Zander, 1992; Nonaka & Takeuchi, 1995). Similar with KBV, S-D logic argues that knowledge is an operant resource and fundamental source of competitive advantage (Vargo & Lusch, 2004). In order to achieve sustainable competitive advantage, knowledge must be unique, rare, valuable, and inimitable (Paswan, D'Souza, & Rajamma, 2014). Knowledge has also been recognized as the source of new value creation (Lusch, Vargo, & O'Brien, 2007). It must be shared or exchanged among value network partners in the value creation process (Kwok & Gao, 2005). Value is co-created and actualized during service delivery by employees and customers. Therefore, having fundamental knowledge-base to enhance the successful interactions with customers is very crucial, especially for employees who directly in contact with the customers (Melancon, et al., 2010).

First knowledge resource is knowledge of customers which refers to "the firm employees' understanding of the firm's current and prospective customers in a competitive market environment" (Melancon, et al., 2010, p. 402). According to S-D logic, service is defined in terms of customer-determined benefit and co-created, thus, it is inherently customer-oriented and relational (Vargo & Lusch, 2004; 2008). Service-dominant companies must be customer-oriented and continuously learn from and adapt to customers' individual needs (Vargo & Lusch, 2004). This study defines knowledge of customers as a company's understanding of current and potential customers' need. Second knowledge is knowledge

of the industry. To gain a competitive strategy, a company must have knowledge of the industry where it competes (Hunt, 2000; Li & Calantone, 1998). Based on competitive dynamic literature, knowledge of the company's competitive environment allows the company to classify its market offering within a benchmarking framework as well as to assess its position and determine competitive actions (Hunt, 2000; Melancon, et al., 2010). Knowledge of the industry also enhances company's absorptive competence which further improves employees' capability to meet customers' needs (Lusch, Vargo, & O'Brien, 2007; Melancon, et al., 2010). This study defines knowledge of the industry as a company's understanding on the industry competitive environments where it competes. Last but not least is knowledge of organizational practices. Knowledge of its organizational practices refers to "the knowledge of the firm's employees related to the firm's policies, procedures, and operational processes" (Melancon, et al., 2010, p. 402). Effectiveness and efficiency in a company's operation can be achieved when its employees have more understanding on the company's practices (Hunt, 200; Li & Calantone, 1998). Having more knowledge about company's practices, may allow employees to serve better service to customers with the correct procedures and processes (Bitner, Booms, & Tetreault, 1990). This study defines knowledge of organizational practices as employees' understanding on company's policies, procedures, and operational practices.

2.2.5 Organizational Performance

This study proposes that organizational performance is the consequence of service innovation. Organizational performance has been widely used as the dependent variable in numerous researches (Morgan & Strong, 2003). The conventional approach of organizational performance assessment has been using profitability most frequently measured by return on investment. However, organizational performance is multidimensional in nature (Morgan & Strong, 2003). Therefore, using only financial measures as organizational performance may be insufficient in handling intangibles and improper valuation of source of competitive advantage (Bharadwaj et al., 1993, p. 87).

There are two important performance measures: financial performance and non-financial performance (Chen, Tsou, & Huang, 2009). Financial performance refers to "a measure of how well a firm uses assets from its primary mode of business to generate revenues" (Chen, Tsou, & Huang, 2009, p. 41). Generating higher profits and reducing costs are its goals. Financial performance may be measured by enhancing sales and profitability of firms, profitable, profit and sales objectives, and market share (Avlonitis, Papastathopoulou, & Gounaris, 2001; Blazevic, et al., 2004). This study defines financial performance as organizational performance assessment from financial-based. In contrast, non-financial performance is "a long-term operational objective that emphasizes the importance of increasing customer

loyalty, attracting new customers, and enhancing the image and reputation of a firm" (Chen, Tsou, & Huang, 2009, p. 42). A company's goals are not only generating higher profits and reducing costs, but also getting loyal customers. In the long-term, the company needs to increase customers' loyalty and attract new customers as well as to maintain its image and reputation (Blazevic & Lievens, 2004). This study defines non-financial performance as organizational performance assessment from customer-based.

2.2.6 Knowledge Sharing

Knowledge sharing is the fundamental mean by which employees can mutually exchange their knowledge and contribute to knowledge application and innovation to further enhance companies' competitive advantage (Wang and Noe, 2010; Wang and Wang, 2012). Based on Polanyi's (1966) conceptualization, Nonaka and Takeuchi (1995) proposed the Socialization, Externalization, Combination, and Internalization (SECI) model which could implicitly explain the function of tacit and explicit knowledge sharing in the knowledge creation process. Knowledge sharing may turn organizational knowledge into individual or group knowledge with the process of internalization and socialization, as well as translating individual and group knowledge into organizational knowledge based on the process of externalization and combination (Wang and Wang, 2012). Knowledge sharing practices in the whole organization are very important to preserve valuable heritage, learn new techniques, solve problems, create core competences, and initiate new situations (Hsu, 2008; Hu, Horng, & Sun, 2009; Huang, Chen, & Stewart, 2010; Law & Ngai, 2008). Tacit knowledge sharing is the foundation of socialization while explicit knowledge sharing makes combination possible in certain organization, as to the process of externalization and internalization, both tacit and explicit knowledge sharing play key roles in the transformation of two types of knowledge (Wang and Wang, 2012).

2.2.7 Knowledge Integration Mechanism

Knowledge acquired from both outside (i.e., customers and business partners) and inside (i.e., employees) of the company often does not become available for innovation purposes due to inadequate mechanism to integrate and share the information throughout the organization (Marinova 2004; Ordanini and Parasuraman, 2011). Knowledge integration mechanism is a formal process and structure that facilitate the capture, analysis, and synthesis and dissemination of various types of knowledge among different functional units—facilities to combine firm capabilities with market knowledge in order to create successful new service offerings, reduce inefficiencies during the innovation process, and help to exploit the acquired knowledge for competitive advantage (Ordanini and Parasuraman, 2011). The criticality of knowledge integration mechanism is also implied by S-D logic because it considers

knowledge renewal as the fundamental source of sustainable competitive advantage through innovation (Lusch, Vargo, and O'Brien 2007).

2.2.8 Organizational Contingencies

In this study, organizational contingencies consist of service climate and service culture. These factors are proposed to serve as moderators that can moderate the relationship between service innovation and its consequences. Service climate is "employees' shared sense of the service quality—focused policies, practices, and procedures they experience and the service quality emphasis which they observe in behaviors that are rewarded, supported, and expected" (Bowen & Schneider, 2014, p. 5). Service climate is contextually service specific, descriptive, and collective. It is suggested that in service climate, top management develops an environment in which employees are aware that their rewards are directly attached to the standards of service quality (Beitelspacher, Richey, & Reynolds, 2011). Service climate is a specific subset of organizational climate (Parker et al., 2003). It is commonly viewed as a set of global perceptions held by employees regarding the environmental aspects which shape expectations for outcomes, contingencies, requirements, and interactions in a work environment (Wang, 2015). Following Schneider, White, & Paul (1998), this study defines service climate as the employees' perceptions of the practices and behaviors which are rewarded, supported, and expected related to customer service and customer service quality.

Furthermore, culture can be defined as the set of norms and values that guide a company and a set of expectations for employees (Hofstede, 1980). The concept of service culture is still new to the services literature. Beitelspacher, Richey, & Reynolds (2011) defined service culture as "a customer-centric culture aimed at exceeding customer expectations and creating superior customer value through the development of service and performance competencies" (p. 216). Service culture emphasizes the role of culture in overall service related success. Service culture is also a mean to create and enhance service values delivery focused on fulfilling customers' needs and wants (Edvardsson & Enquist, 2002; Vargo & Lusch, 2004). Services that customer receives will depend on the culture of a company that motivates its employees to serve better service to the customers (Dunnett, 2007). Service culture may also become a foundation to build up a relationship with other network value partners who emphasize customer based strategy (Beitelspacher, Richey, & Reynolds, 2011). This study defines service culture as the culture of a company which based on customer-centric.

2.2.9 Environmental Conditions

The business environment is frequently characterized by demand uncertainties and market competitiveness (Wong, et al., 2014). In this study, environmental conditions consist of four important factors: environmental munificence, environmental dynamism, environmental heterogeneity, and environmental hostility. These environmental conditions are proposed to serve as moderators that can moderate the relationship between service innovation and its consequences. Environmental munificence is "the scarcity or abundance of critical resources needed by (one or more) firms operating within an environment" (Caruana, Ewing, & Ramashesan, 2002, p. 47). Environmental dynamism refers to "the amount of unpredictability of change in customer tastes, production or service technologies and the modes of competition in the firms' principal industries" (Caruana, Ewing, & Ramashesan, 2002, p. 47). Environmental heterogeneity is "the difference in competitive tactics, customer tastes, product lines, and channels of distribution" (Caruana, Ewing, & Ramashesan, 2002, p. 47). Environmental hostility is "level of competition, severity of regulatory restrictions, shortages, and unfavorable demographic trends" (McGinnis & Kohn, 1993, p. 10).

According to S-D logic, external environments are the resources needed by the company (Lusch, Vargo, & O'brien, 2007). In the dynamic environment, value propositions offered by a company depend on the collection of resources and competences which the company can continually renew, create, integrate, and transform. A company needs to overcome resistances and proactively co-create these environments. A truly S-D company would view the entire community as resources to collaborate with and turn it into the source of competitive advantage (Vargo & Lusch, 2004). This study defines environmental munificence as the scarcity of critical resources needed by a company; environmental dynamism as the unpredictability of the changing of customers' needs and preferences, technologies, and competition in the industry; environmental heterogeneity as the differences of competitive tactics, customers' needs and preferences, and service offerings; and environmental hostility as the level of competition, severity of regulatory restrictions, shortages, and unfavorable demographic trends.

2.3 Hypotheses Development

2.3.1 The Effects of S-D Orientation

According to S-D logic (Vargo & Lusch, 2004; 2008), service is customer oriented and relational. Furthermore, customer is always regarded as the co-creator of value. It implies that customers play an important role on value co-creation (Ordanini & Parasuraman, 2011). S-D orientation is a portfolio of co-creation capabilities including individuated, relational, ethical, empowered, developmental, and concerted interaction capability which enables company to co-create value with its customers (Karpen,

Bove, & Lukas, 2012). S-D orientation companies emphasize value co-creation processes through interactions and resources integrations (Karpen, et al., 2015). These interactions and resources integrations are continuous and interdependent processes for mutual benefit of all involved actors.

This study proposes that S-D orientation enhances dynamic service innovation capabilities and service innovation practices. Companies which emphasize interactions and resource integrations during co-creation process tend to have better dynamic service innovation capabilities. Frequently interacting and collaborating with customers enables company to easily sense customers' needs and technological options as well as to conceptualize, co-produce, orchestrate, scale, and stretch new services (Janssen, Castaldi, & Alexiev, 2015; Karpen, et al., 2015).

Furthermore, during interactions, new service values or ideas may emerge (Arnould & Thompson, 2005). S-D orientation companies conduct value co-creation activities through understanding about, responding to, and empowering individual customers as well as underlining the quality of the interaction process to facilitate enjoyable human relationships, morally acceptable behavior, and pleasurable touch points (Karpen, et al., 2015). Frequent interactions may help companies to understand more about customers' needs and preference and generate new knowledge (Ordanini & Parasuraman, 2011). It allows them to get feedback from customers and come up with innovative service values (Alam, 2002; Prahalad & Ramaswamy, 2004). Therefore, this study hypothesizes:

H1: S-D orientation has a positive effect on dynamic service innovation capabilities.

H2: S-D orientation has a positive effect on service innovation.

2.3.2 The Effects of Knowledge Resources

According to S-D logic, knowledge is an operant resource that helps companies to gain competitive advantage (Vargo & Lusch, 2004). Knowledge is a complex resource that is important for innovation and success (Paswan, D'Souza, & Rajamma, 2014; Serenko & Bontis, 2004). There are three important knowledge resources: knowledge of customers, knowledge of the industry, and knowledge of firm practices (Melancon, et al., 2010). These three knowledge resources are crucial to develop innovative service values. Knowledge is a source for new service value creation (Lusch, Vargo, & O'brien, 2007) and new service values may emerge during knowledge sharing or exchange with customers (Kwok & Gao, 2005).

This study proposes that knowledge resources enhance service innovation. Melancon, et al. (2010) found that knowledge customers and knowledge of the industry enhance the company's ability to meet customers' needs. Furthermore, Paswan, D'Souza, & Rajamma (2014) proposed that knowledge is a key for value co-creation practices. Based on S-D logic foundational premises (FP6), customer is always a

co-creator of value (Vargo & Lusch, 2004; 2008). Having greater knowledge of current and potential customers provides strategic resource for company to create and propose new service values (Kohli & Jaworski, 1990). Well understanding of the industry condition and company' practices help the companies to deliver better new service values to customers because companies may deliver unique service that their competitors do not have as well as implement the correct procedures and operational practices (Melancon, et al., 2010). Thus, this study hypothesizes:

H3: Knowledge resources have positive effects on S-D orientation.

H4: Knowledge resources have positive effects on service innovation.

H5: Knowledge resources have positive effects on dynamic service innovation capabilities.

2.3.3 The Effects of Dynamic Service Innovation Capabilities

Dynamic capabilities play an important role on innovation (Crossan & Apaydin, 2010). It facilitates companies to explore and answer unmet needs of current and potential customers (Gronroos, 2006). Janssen, Castaldi, & Alexiev (2015) introduced dynamic service innovation capabilities which consist of five capabilities: sensing customers' needs capability, sensing technological options capability, conceptualizing capability, coproducing and orchestrating capability, and scaling and stretching capability. Having dynamic service innovation capabilities allow companies to gain competitive advantage by adapting, innovating, and reconfiguring resources they possessed (den Hertog, et al., 2010).

This study proposes that dynamic service innovation capabilities enhance service innovation practices. Kindstrom, Kowalkowski, & Sandberg (2013), through their qualitative study, identified the key of micro-foundations which formed the basis of successful realignment of a company's dynamic capabilities (e.g., sensing, seizing, and reconfiguring) that enhance service innovation activities. According to S-D logic, successful service innovation depends on the continuous renewal, creation, integration, and transformation of resources (Ballantyne & Varey, 2006). A company needs to have capabilities of sensing customer needs, sensing technological options, conceptualizing, coproducing and orchestrating, and scaling and stretching in order to effectively and efficiently deliver innovative service values (Janssen, Castaldi, & Alexiev, 2015). Therefore, this study hypothesizes:

H6: Dynamic service innovation capabilities have positive effects on service innovation.

2.3.4 The Mediating Effects of Dynamic Service Innovation Capabilities

According to Baron and Kenny (1986), mediator variable explains how external physical events take on internal psychological significance which means that mediator intervenes the effect of independent variable on dependent variable. This study proposes that dynamic service innovation

capabilities mediate the effects S-D orientation and knowledge resources on service innovation. S-D orientation companies emphasize the co-creation value processes through interactions and resources integrations with customers (Karpen, et al., 2015). These interactions and resources integrations are continuous and interdependent processes for mutual benefit of all involved actors. The higher a company's interaction capabilities, the better its dynamic service innovation capabilities will be. It further enhances service innovation. Furthermore, knowledge is a source for new service value creation (Lusch, Vargo, & O'brien, 2007) and new service values may emerge during knowledge sharing or exchange with customers (Kwok & Gao, 2005). Knowledge resources are likely to enhance dynamic service innovation capabilities of a company and further enhance service innovation practices. Thus, this study hypothesizes:

H7: Dynamic service innovation capabilities mediate the effects of (a) S-D orientation and (b) knowledge resources on service innovation.

2.3.5 The Effects of Service Innovation

According to Jannsen, et al. (2015), multidimensional service innovation consists of new service concept, new customer interaction, new value system/business partners, new revenue model, new organizational delivery system, and new technological delivery system. The link between innovation and performance is widely studied in the innovation literature, especially the innovation on tangible products (Ordanini & Parasuraman, 2011). Previous studies support the positive link between service innovation and organizational performance (e.g., Avlonitis, Papastathopoulou, & Gounaris, 2001; Chen, Tsou, & Huang, 2009; Ordanini & Parasuraman, 2011).

This study proposes that service innovation enhances organizational performance. Avlonitis, Papastathopoulou, and Gounaris (2001) found that new delivery processes positively influence financial performances, such as profitability and sales. Chen, Tsou, & Huang (2009) revealed that service delivery innovation leads to better financial and non-financial performance. Furthermore, Ordanini & Parasuraman (2011) found that both innovation radicalism and innovation volume have positive effects on performance. Having new service concept, new customer interaction, new value system/business partners, new revenue model, new organizational delivery system, and new technological delivery system lead to greater financial and non-financial performances. Thus, this study hypothesizes:

H8: Service innovation has a positive effect on organizational non-financial performance.

H9: Service innovation has a positive effect on organizational financial performance.

2.3.6 The Effects of Organizational Non-Financial Performance

Organizational performance consists of two types, non-financial and financial performance. This study proposes that organizational non-financial performance enhances organizational financial performance (Chen, Tsou, & Huang, 2009). When a company has good image and reputation, it can obtain more loyal customers and more new customers which means its financial performance is likely to increase. Therefore, this study hypothesizes:

H10: Organizational non-financial performance has a positive effect on organizational financial performance.

2.3.7 The Moderating Effect of Knowledge Sharing

Innovation practices tend to depend heavily on employees' knowledge, skill, and experience in the value creation process (Wang and Wang, 2012). Knowledge sharing can be seen as valuable inputs for innovation because their characteristics are firm-specific, socially complex, and path-dependent (Chiang & Hung, 2010; Dimitris, Konstantinos, Klas Eric, & Gregory, 2007; Gachter, von Krogh, & Haefliger, 2010; Su-Chao & Ming-Shing, 2008). This study proposes that knowledge sharing positively moderate the effect of S-D orientation, knowledge resources, and dynamic service innovation capabilities on service innovation. The positive effects of S-D orientation, knowledge resources, and dynamic service innovation capabilities will be strengthened when a company conducts more knowledge sharing practices. Better service innovation is likely to be achieved by companies' capabilities and resources when they have better shared knowledge among employees. Thus, this study hypothesizes:

H11: Knowledge sharing positively moderates the effects of (a) S-D orientation, (b) knowledge resources, and (c) dynamic service innovation capabilities on service innovation.

2.3.8 The Moderating Effect of Knowledge Integration Mechanism

Knowledge integration mechanism facilitates a company to capture, analysis, and synthesize various type of knowledge (Ordanini and Parasuraman, 2011). The learning literature suggests that knowledge integration mechanism is especially important to exploit the potential of complex and tacit knowledge but not as critical to merely generate new ideas (Nonaka 1991). Previous studies have found that knowledge integration mechanism mediates the link between a firm's knowledge and innovation outcomes for the depth dimension of knowledge, such as sophistication and complexity of knowledge (De Luca and Atuahene-Gima 2007). However, this study suggests that knowledge integration mechanism may moderate the effects of S-D orientation, knowledge resources, and dynamic service innovation capabilities on service innovation. It is because knowledge integration mechanism is

important to exploit both the existing and the new knowledge across functional departments (Nonaka, 1991). The positive effects of S-D orientation, knowledge resources, and dynamic service innovation capabilities will be strengthened when a company does better knowledge integration mechanism. Better service innovation is likely to be achieved by companies' capabilities and resources when they have a better mechanism to integrate the knowledge. Thus, this study hypothesizes:

H12: Knowledge integration mechanism positively moderates the effects of (a) S-D orientation, (b) knowledge resources, and (c) dynamic service innovation capabilities on service innovation.

2.3.9 The Moderating Effects of Organizational Contingencies

Organizational contingencies consist of two contingencies which are service climate and service culture. According to S-D logic, these two contingencies may become competitive resources for companies (Lusch, Vargo, & O'brien, 2007). An effective service climate is likely to lead to positive customer perceptions of the company (Dietz, Pugh, & Wiley, 2004). Service culture emphasizes the role of culture in overall service related success (Edvardsson & Enquist, 2002; Vargo & Lusch, 2004).

This study proposes that service climate and service culture positively moderate the effect of service innovation on organizational performances. The positive effect of service innovation on organizational performance will be strengthened when a company has better service climate and stronger service culture. Better organizational performances are likely to be achieved through better service innovation when a company has better working environmental conditions and its employees shared the same beliefs and values (Beitelspacher, Richey, & Reynolds, 2011). Therefore, this study hypothesizes:

H13: Organizational contingencies positively moderate the effect of service innovation on organizational (a) non-financial and (b) financial performance.

2.3.10 The Moderating Effects of Environmental Conditions

Environmental conditions consist of environmental munificence, environmental dynamism, environmental heterogeneity, and environmental hostility. According to S-D logic, external environments are resources needed by the company (Lusch, Vargo, & O'brien, 2007). The ecosystem may be integrated and collaborated into the co-creation of values and a company needs to overcome resistances and proactively co-create these environments. A truly S-D company would view the entire community as resources to collaborate with and turn it into the source of competitive advantage (Vargo & Lusch, 2004).

This study proposes that environmental munificence, environmental dynamism, environmental heterogeneity, and environmental hostility positively moderate the effect of service innovation on

organizational performances. The positive effect of service innovation on organizational performance will be stronger in higher environmental munificence, environmental dynamism, environmental heterogeneity, and environmental hostility conditions. Better organizational performances are likely to be achieved through better service innovation. It happens when a company is able to integrate the scarcity of critical resources, the change of customer needs and of technology, the differences in competitive tactics and customer preferences, as well as competition and demographic trends (Wong, 2014). Therefore, this study hypothesizes:

H14: Environmental conditions positively moderate the effect of service innovation on organizational (a) non-financial and (b) financial performance.

3. Research Design and Methodology

3.1 Research Model

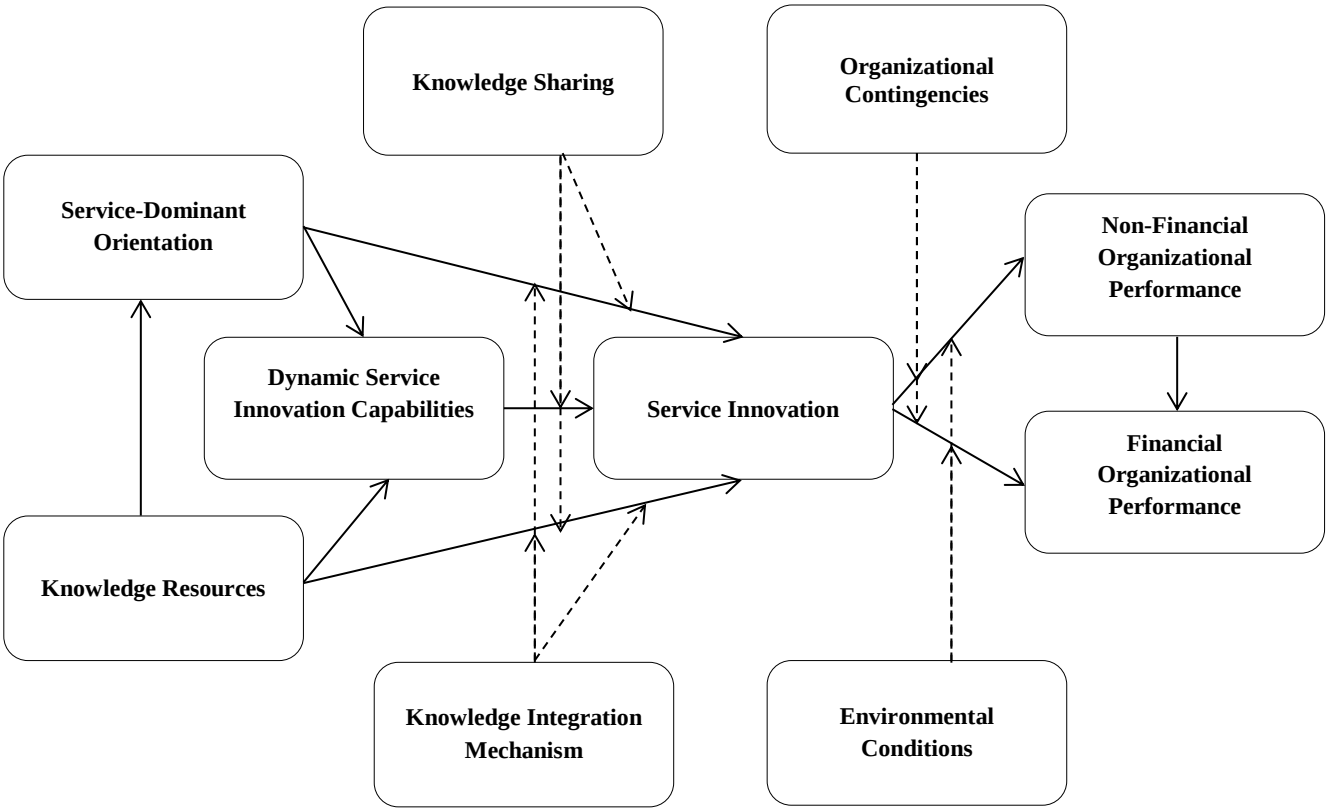

Figure 1. Proposed Framework

This study presents an integrated research framework of service innovation as shown in Figure 1. The antecedents of service innovation are service-dominant orientation and knowledge resources, while

dynamic service innovation capabilities serve as a mediator variable which mediates the relationship between service innovation and its antecedents. Non-financial performance and financial performance of organizations are served as the consequences of service innovation. Furthermore, knowledge sharing and knowledge integration mechanism moderate the relationship between service innovation and its antecedents while organizational contingencies and environmental conditions moderate the relationship between service innovation and its consequences.

3.2 Sampling and Data Collection Procedure

Online and offline questionnaire surveys were distributed to the executive managers of retail companies in Taiwan and Indonesia. Those retail companies are department stores, bookstores, convenient stores, supermarkets, hypermarkets, electronics and appliance retailers, home shopping retailers, furniture and furnishing stores, apparel and footwear specialist retailers and many others. These samples are seen as appropriate to the goals of this research since the unit analysis of this study is at the organizational level. Business owners or top management executives have better understanding about company's practices. Retail industry is chosen as the research settings because previous studies on S-D logic suggested that retail industry has a distinct advantage in being the customer's closest link to the marketplace and it is best characterized as a service-integration function (Lusch, Vargo, & O'brien, 2007). Furthermore, Taiwan and Indonesia are chosen because these countries have different level of economy. According to IMF data, Taiwan is advanced economy and Indonesia is emerging economy. Different economy level may show different research results which is good to test the generalisability for research model. The survey material will include a cover letter from the researcher and the university. Respondents will be asked to express their opinions about research constructs of this study. In this study, 350 respondents from Taiwan and 350 respondents from Indonesia were recruited to participate.

3.3 Construct Measurement

To test the hypotheses, ten research constructs, three control variables, and respondents' demographic information was operationalised. Those constructs are service-dominant orientation, knowledge resources, dynamic service innovation capabilities, service innovation, non-financial performance, financial performance, knowledge sharing, knowledge integration mechanisms, organizational contingencies, and environmental conditions. The measurement scales were developed based on the results of in-depth interview, author co-citation analysis, and literature review. The questionnaire items were also modified in order to fit the purpose of this study.

3.3.1 Service-Dominant Orientation

Following Karpen, et al. (2015), service-dominant orientation consists of six factors and each factor has four items. Those factors are relational interaction, ethical interaction, individuated interaction, empowered interaction, concerted interaction, and developmental interaction. The measurement items of service-dominant orientation were acquired from the open coding and axial coding of in-depth interviews. A preliminary version of measurement items designed by Karpen, et al. (2015) was also referred. All measurement items adopted a seven-point Likert scales from 1=strongly disagree to 7=strongly agree. The potential questionnaire items are as follow:

Relational Interaction

1. Our company makes our customers feel at ease during our dealings.
2. Our company tries to establish good(?) rapport with our customers.
3. Our company encourages two-way communication with our customers.
4. Our company shows genuine interest in engaging our customers.

Ethical Interaction

1. Our company does not try to take advantage of our customers.
2. Our company does not pressure our customers in any way.
3. Our company does not mislead our customers in any way.
4. Our company does not try to manipulate our customers.

Individuated Interaction

1. Our company makes an effort to understand our customers' needs.
2. Our company is sensitive to our customers' situation.
3. Our company makes an effort to find out what kind of offering is most helpful to our customers.
4. Our company seeks to identify our customers' expectations.

Empowered Interaction

1. Our company invites our customers to provide ideas or suggestions.
2. Our company encourages our customers to shape the service our customers receive.
3. Our company provides our customers with control over our customers' experiences.
4. Our company let our customers interact with them in our customers preferred way.

Concerted Interaction

1. Our company works together seamlessly in service to our customers.
2. Our company acts as one unit when dealing with our customers.
3. Our company provides messages to our customers that are consistent with each other.
4. Our company ensures we have smooth procedures for interacting with our customers.

Developmental Interaction

1. Our company shares useful information with our customers.
2. Our company helps our customers become more knowledgeable.
3. Our company provides our customers with the advice our customers need to use our offerings successfully.
4. Our company offers expertise that our customers can learn from.

3.3.2 Dynamic Service Innovation Capabilities

Following Janssen, Castaldi, & Alexiev (2015), dynamic service innovation capabilities consist of five factors: sensing customer needs, sensing technological options, conceptualizing, coproducing and orchestrating, and scaling and stretching. The measurement items of dynamic service innovation capabilities are acquired from the open coding and axial coding of in-depth interviews. A preliminary version of measurement items designed by Janssen, Castaldi, & Alexiev (2015) were referred. All measurement items adopted a seven-point Likert scales from 1=strongly disagree to 7=strongly agree. The questionnaire items are as follow:

Sensing Customer Needs

1. Our company systematically observes and evaluates the needs of our customers.
2. Our company analyzes the actual use of our services.
3. Our company is strong in distinguishing different groups of customers and market segments.

Sensing Technological Options

4. Staying up-to-date by promising new services and technologies is important for our company.
5. In order to identify possibilities for new services, our company use different information sources.
6. Our company follows the technologies used by our competitors.

Conceptualizing

1. Our company is innovative in coming up with ideas for new service concepts.
2. Our company experiments with new service concepts.
3. Our company aligns new service offerings with our current business and processes.

Coproducing and Orchestrating

1. Collaboration with other companies helps our company in improving or introducing new services.
2. Our company is strong in coordinating service innovation activities involving several parties.

Scaling and Stretching

1. In the development of new services, our company takes into account our branding strategy.
2. Our company is actively engaged in promoting its new services.

3. Our company introduces new services by following our marketing plan.

3.3.3 Knowledge Resources

Following Melancon, et al. (2010), knowledge resources consist of three knowledge resources which are knowledge of customers, knowledge of industry, and knowledge of company's practices. The measurement items of service-dominant orientation were acquired from the open coding and axial coding of in-depth interviews. A preliminary version of measurement items designed by Conant, et al. (1990) and Melancon, et al. (2010) were also referred. All measurement items adopted a seven-point Likert scales from 1=strongly disagree to 7=strongly agree. The questionnaire items are as follow:

Knowledge of Customers

1. Our company knows a great deal about our company's customers.
2. Our company is much better than competitors in relation to knowledge of current customers.
3. Our company is much better than competitors in relation to knowledge of prospective customers.

Knowledge of Industry

1. Our company is much better than competitors in relation to knowledge of competitors.
2. Our company is much better than competitors in relation to knowledge of industry trends.
3. Our company has a great understanding of our company's competitors.
4. Our company has a great knowledge of the industry.

Knowledge of Company's Practices

1. The employees of our company know a great deal about the way the company does things.
2. The employees of our company have a great understanding of our company's policies.
3. The employees of our company know a great deal about the practices and procedures of our company.
4. The employees of our company have a great understanding of the way our company operates.

3.3.4 Service Innovation

Following Janssen, et al. (2015), service innovation consists of six dimensions: new service concept, new customer interaction, new value system/business partners, new revenue model, new organizational delivery system, and new technological delivery system. The measurement items of service innovation were acquired from the open coding and axial coding of in-depth interviews. A preliminary version of measurement items designed by Janssen, et al. (2015) were also referred. All measurement items adopted seven-point Likert scales from 1=strongly disagree to 7=strongly agree. The questionnaire items are as follow:

New Service Concept

1. Our company developed new (service) experiences or solutions for customers.
2. Our company combined existing services into a new formula.
3. Our developed a new way of creating value for ourselves and our customers.

New Customer Interaction

1. Our company developed new channels for communicating with customers.
2. The way our company contacts with our customers is renewed.
3. Our company changed the task distribution between ourselves and our customers.

New Value System/Business Partners

1. Our company has collaborated with our partners developed a new value system.
2. The role of external parties in producing our company services is renewed.
3. Our company involved new partners in the delivery of our services.

New Revenue Model

1. Our company has developed a new revenue model.
2. By introducing new services our company changed the way we generate revenues.
3. The way our company get paid (financial construction) is altered.

New Organizational Delivery System

1. Our company has developed a new organizational delivery system.
2. Our company changed our organization in order to produce our new services.
3. Our production of new services requires new skills from our employees.

New Technological Delivery System

1. Our company has developed a new technological delivery system.
2. Technology plays an important role in the renewed production of our services.
3. Our company renewed our service offerings by new or different use of ICTs.

3.3.5 Knowledge Sharing

Following Wang and Wang (2012), knowledge sharing consists of two dimensions: explicit knowledge sharing and tacit knowledge sharing. The measurement items of knowledge sharing were acquired from the open coding and axial coding of in-depth interviews. A preliminary version of measurement items designed by Wang and Wang (2012) were also referred. All measurement items adopted a seven-point Likert scales from 1=strongly disagree to 7=strongly agree. The questionnaire items are as follow:

Explicit knowledge sharing

1. People in my company frequently share existing reports and official documents with members of my company.
2. People in my company frequently share reports and official documents that they prepare by themselves with members of my company.
3. People in my company frequently collect reports and official documents from others in their work.
4. People in my company are frequently encouraged by knowledge sharing mechanisms.
5. People in my company are frequently offered a variety of training and development programs.
6. People in my company are facilitated by IT systems invested for knowledge sharing.

Tacit knowledge sharing

1. People in my company frequently share knowledge based on their experience.
2. People in my company frequently collect knowledge from others based on their experience.
3. People in my company frequently share knowledge of know-where or know-whom with others.
4. People in my company frequently collect knowledge of know-where or know-whom with others.
5. People in my company frequently share knowledge based on their expertise.
6. People in my company frequently collect knowledge from others based on their expertise.
7. People in my company will share lessons from past failures when they feel necessary.

3.3.6 Knowledge Integration Mechanism

The measurement items of knowledge integration mechanism were acquired from the open coding and axial coding of in-depth interviews. A preliminary version of measurement items designed by Ordanini and Parasuraman (2011) were also referred. All measurement items adopted a seven-point Likert scales from 1=strongly disagree to 7=strongly agree. The questionnaire items are as follow:

1. My company uses regular formal reports and memos that summarize learning to capture, interpret, and integrate knowledge and information about market and technology conditions.
2. My company uses information sharing meetings to capture, interpret, and integrate knowledge and information about market and technology conditions.
3. My company uses face-to-face discussions by cross-functional teams to capture, interpret, and integrate knowledge and information about market and technology conditions.
4. My company uses formal analysis of failing service innovation projects to capture, interpret, and integrate knowledge and information about market and technology conditions.
5. My company uses formal analysis of successful service innovation projects to capture, interpret, and integrate knowledge and information about market and technology conditions.

3.3.7 Organizational Contingencies

Organizational contingencies consist of two factors, service climate and service culture. The measurement items of organizational contingencies were acquired from the open coding and axial coding of in-depth interviews. A preliminary version of measurement items of (1) service climate designed by Bowen and Schneider (2014) and Schneider, White, and Paul (1998) and (2) service culture designed by Beitelspacher, Richey, and Reynolds (2011) were also referred. All measurement items adopted a seven-point Likert scales from 1=strongly disagree to 7=strongly agree. The potential questionnaire items are as follow:

Service Climate

1. Job knowledge and skills of employees in our company to deliver superior quality service is excellent.
2. Efforts to measure and track the quality of service in our company is excellent.
3. The recognition and rewards employees receive for the delivery of superior service is excellent.
4. The overall quality of service provided by our company is excellent.
5. The leadership shown by management in our company in supporting the service quality effort is excellent.
6. The effectiveness of our company's communications efforts to both employees and customers is excellent.
7. The tools, technology, and other resources provided to employees to support the delivery of superior quality service are excellent.

Service Culture

1. Our company emphasizes commitment to keeping our service promises to our customers.
2. Our company emphasizes providing services to our customers at the time that we promise to do so.
3. Customers have grown to expect prompt service from our company.
4. Our company emphasizes our ability to respond to customer service requests promptly.
5. Our company emphasizes our commitment to work with partners who are as committed to our end customer as we are.
6. Our company emphasizes the notion that the success of the organization depends on our ability to meet the customer's service needs.
7. Our company's values are focused on providing optimal service to the customers.
8. Our company focuses on responding immediately to customers' service complaints and service concerns.

9. Our company focuses on customer service as a key indicator of performance.

3.3.8 Environmental Conditions

Environmental conditions consist of four factors: environment munificence, environmental dynamism, environmental heterogeneity, and environmental hostility. The measurement items of environmental conditions were acquired from the open coding and axial coding of in-depth interviews. A preliminary version of measurement items designed by McGinnis & Kohn (2003) were also referred. All measurement items adopted a seven-point Likert scales from 1=strongly disagree to 7=strongly agree. The questionnaire items are as follow:

Environmental Munificence

1. Many new opportunities are available to our company in the existing and/or new markets.
2. There are many opportunities available to our company in the form of existing and/or new products.
3. The potential for growth in the markets served by our company is substantial.

Environmental Dynamism

1. Competitive strategies of competitors are not predictable.
2. The markets served by our company are difficult to predict.
3. Our company is competed in a dynamic way.

Environmental Heterogeneity

1. Our company requires working with many different types of suppliers, distributors, and customers.
2. Competitive tactics vary greatly in the markets served by our company.
3. Customers served by our company vary greatly in terms of product preferences, expected service levels, and price expectations.
4. In order to compete effectively in the markets served by our company, several different technologies must be mastered.

Environmental Hostility

1. Competition in the markets served by our company is severe.
2. In the markets served by our company, the firm that eases up usually loses markets/customers to its competitors.
3. The hostility level of competition is high.

3.3.9 Organizational Performance

Following Chen, Tsou, & Huang (2009), organizational performance measurement consists of two types of performance: financial performance and non-financial performance. The measurement items of organizational performance were acquired from the open coding and axial coding of in-depth interviews. A preliminary version of measurement items designed by Chen, Tsou, & Huang (2009) were also referred. All measurement items adopted a seven-point Likert scales from 1=strongly disagree to 7=strongly agree. The questionnaire items are as follow:

Financial Performance

1. Have enhanced sales and profitability.
2. Have been profitable.
3. Have achieved profit objectives.
4. Have achieved sales objectives.
5. Have achieved market share objectives.

Non-Financial Performance

1. Have improved the loyalty of the existing customers.
2. Have attracted a significant number of new customers.
3. Have had an important competitive advantage.
4. Have had a well perceived image.
5. Have had a good reputation.

3.3.10 Control Variables

Control variables consist of three company characteristics variables: company size, company age, and company capital. According to Hsieh and Hsieh (2015), larger companies have more resources to do innovative practices. Company size is a common explanatory variable of innovation and company capital reflects a company's financial resources.

3.3.11 Demographic Information

The questionnaire items which are related to the respondents and their company were presented on the last section of the entire questionnaire. These questions are shown below:

Respondents Information

1. Respondent Gender
2. Respondent Age
3. Position in Company

4. Working Experience
5. Educational Background

3.4 Data Analytical Techniques

3.4.1 Descriptive Statistic Analysis

To better understand the characteristics of research structures and demographic information, descriptive statistics analysis were used to illustrate the means and standard deviation for all research variables, as well as frequency for demographic information.

3.4.2 Purification and Reliability of the Measurement Constructs

Measurement model was evaluated to confirm the reliability and validity of measurement scales. To assess the reliability of the measurement scales, average variance extracted (AVE) and composite reliability (CR) was calculated. All constructs should have AVE value higher than 0.5 and CR value higher than 0.8 as the critical values (Nunnally & Bernstein, 1994). In addition, to assess the validity of measurement scales, convergent validity and discriminant validity were examined. Convergent validity was assessed by factor loading with 0.6 as critical value (Henseler et al., 2009). Furthermore, discriminant validity was assessed by comparing AVE square root value with constructs inter-correlations.

3.4.3 Common Method Variance Issue

To assess the possibility of common method variance which is biased by collecting two measures from the same source using the same method at the same time, the following validity checks will be conducted. First, a Harmon one-factor test will be adopted that loads all the variables into a principal component factor analysis (Podsakoff, et al., 2003). Second, discriminated validity will be performed by comparing the square root of the AVE (average variance extracted) with the Pearson correlations among the constructs. All of the square root of AVE estimation should be greater than the corresponding inter construct correlation estimates (Fornell & Larcker, 1981; Hair, et al., 2010).

3.4.4 Hypotheses Testing Technique

The Partial Least Squares (PLS) path modeling algorithm was adopted in this study for both measurement model and structural model. According to Karin (2009), PLS is less restrictive judging by its normal distribution assumption, sample size restriction, and multicollinearity situation (Anderson & Swaminathan, 2011) than other options. According to Hair et al. (2011), PLS is particularly more appropriate in the following conditions:

1. When the goal of the study is predicting key driven components or constructs;
2. When the structural model is very complex (including many constructs and many indicators);
3. When the sample size is relatively low;
4. When the collected data are to some extent non-normal;
5. When the latent variable score will be used in the subsequent analysis.

3.4.5 Evaluation of the Structural Model

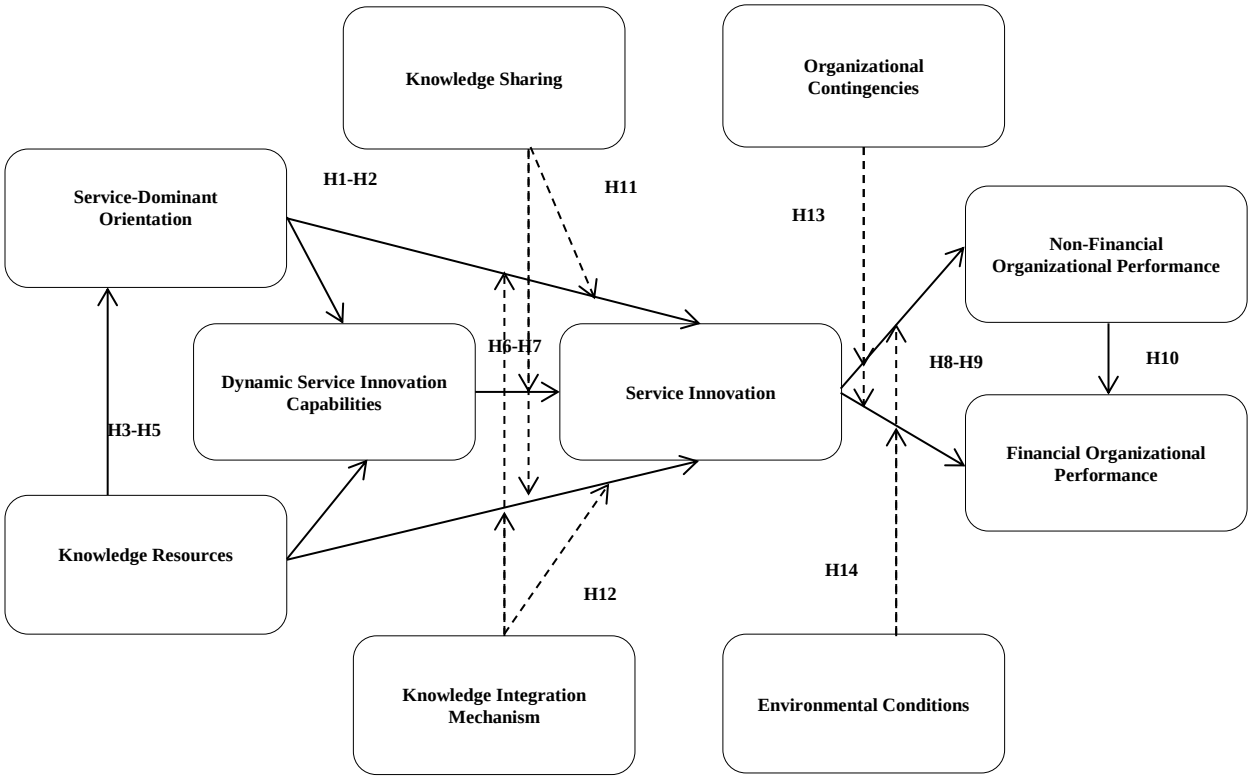

Figure 2. The Proposed Model and Analysis Tools

Hair, et al. (2012) argued that the primary criterion for the PLS model assessment is the coefficients of determination (R2), which represented the amount of explained variance of each endogenous latent variable. According to Chin (1998), an R2 value of more than 0.672 is considered to be substantial; 0.33 is described as moderate, while 0.19 is described as weak. Using the above criteria, the reliability and validity of the measurement model can be verified. When the measurement model and structural model are justified as reliable, then the coefficients of the path parameters (β) is used to test the hypotheses developed in this study. Those (β) values which have $p < 0.05$ are considered as significant values. The PLS procedure will be implemented using SmartPLS2 software package.

4. Results

4.1 Demographic Characteristics

Table 4-1 Descriptive Analysis of Company Information

Demographic Variables		Frequency(n=224)	Percentage
Retail Type	Banking	22	10%
	Bookstore	6	3%
	Automotive Retailer	16	7%
	Fashion Store	52	23%
	Apparel and Footwear	6	3%
	Drugstore	26	12%
	Home Appliance Store	16	7%
	Convenient Store	64	29%
	Supermarket	8	4%
	Hypermarket	0	0%
	Department Store	8	4%
Company Age	≤ 5 years	34	15%
	6 – 10 years	42	19%
	11 – 15 years	30	13%
	16 – 20 years	24	11%
	> 20 years	94	42%
Capital (In Rupiah)	≤ 250 millions	36	16%
	251 – 500 millions	26	12%
	501 million – 750 millions	18	8%
	751 millions – 1 billion	22	10%
	> 1 billion	122	54%
Number of Employees	≤ 50 employees	100	45%
	51 – 100 employees	18	8%
	101 – 150 employees	16	7%
	151 – 200 employees	2	1%
	> 200 employees	88	39%

Questionnaires were distributed to 250 questionnaires to the retailing firms in Taiwan and 250 questionnaires to the retailing firms in Indonesia, respectively. From 500 questionnaires, 232 were

returned, resulting for 46.4% response rate. However, due to some missing data, only 224 data were used for further analyses. Table 4-1 presents the demographic results for company information. Among 224 data, 29% were convenient store, 23% were fashion store, 12% were drugstore, and followed by banking, automotive retailer, home appliance store, supermarket, department store, bookstore, and apparel and footwear store. More than 50% of respondents' companies have operated more than 15 years and more than 60% of those companies had capital more than 751 million rupiah (1$US = 13,255 Rupiah). In terms of the distribution of number of employees, 45% had less than 50 employees, 39% had more than 200 employees, 8% had employees between 51-100 people, 7% had employees between 101-150 people, and 1% had employees between 151-200 people.

Table 4-2 Descriptive Analysis of Respondent Information

Demographic Variables		Frequency(n=224)	Percentage
Gender	Male	130	58%
	Female	94	42%
Age	≤ 25 years old	74	33%
	26 – 35 years old	98	44%
	36 – 45 years old	34	15%
	46 – 55 years old	18	8%
	> 55 years old	0	0%
Education	High school or lower	80	36%
	Bachelor degree	128	57%
	Master degree	14	6%
	Doctoral degree	2	1%
Working Experience	≤ 5 years	98	44%
	6 – 10 years	84	38%
	11 – 15 years	32	14%
	16 – 20 years	8	4%
	> 20 years	2	1%
Current Position	CEO	26	12%
	Owner	10	4%
	General Manager	14	6%
	Marketing Manager	30	13%
	Operational Manager	144	64%

The demographic characteristics of respondents' information are shown in Table 4-2. Approximately 58% of the 224 respondents were male. For age, 44% were between the ages of 26 and

35, 33% were less than 25 years old, 15% were between the ages of 36 and 45, and 8% were between the ages of 46 and 55. With regard to their educational background, 64% of the respondents had obtained at least a bachelor's degree. In terms of working experience distribution, 44% of the respondents have worked for less than or equal to 5 years, 38% have worked from 6 to 10 years, 14% have worked from 11 to 15 years, 4% have worked from 16 to 20 years, and 1% have worked for more than 20 years. More than 50% of the respondents were operational managers, followed by 13% were marketing managers, 12% were CEOs, 6% were general managers, and 4% of the owners.

4.2 Evaluation of Measurement Model

4.2.1 Evaluation of Measurement Model – First Order Constructs

The collected data were analyzed by Partial Least Squares (PLS) using SmartPLS software. PLS is appropriate for causal-predictive analysis when the research model is more complicated (Chin, 1998). Both the measurement model and structural model can be simultaneously examined by PLS (Hair, Ringle, & Sarstedt, 2011). The measurement model was evaluated to ensure the reliability and validity of measurement scales. Table 4-3 shows the results of measurement model. The test of the measurement model involves the estimation of reliability and validity of first-order reflective constructs, which indicate the strength of measures used to test the proposed model (Fornell, 1987).

To assess the reliability of the constructs, Cronbach's α and composite reliability (CR) were calculated (Fornell & Lacrkel, 1981). All constructs have Cronbach's α value higher than its critical value of 0.7 (Hair, William, Babin, & Anderson, 2010) except for Scaling & Stretching (SS) construct which has value 0.695. However, this value is still acceptable. The highest Cronbach's α value is Financial Performance (FP) construct with the value of 0.917. All constructs have CR value higher than its critical value of 0.8 (Hair, William, Babin, & Anderson, 2010). The highest CR value is Sensing Customer Needs (SCN) construct with the value of 0.949 and the lowest CR value is Individuated Interaction (II) construct with the value of 0.818.

Furthermore, both convergent and discriminant validity were examined to assess the validity of the measurement scales. Convergent validity was assessed by factor loading and average variance extracted (AVE). All factor loadings were higher than the critical value of 0.6. The highest factor loading value is ED3 from Environmental Dynamism (ED) construct with the value of 0.959 and the lowest factor loading value is DI4 from Developmental Interaction (DI) construct with the value of 0.601. One item were deleted for further analysis because the value was lower than 0.6. It was SCN3 from Sensing Customer Needs (SCN) construct. All AVE values were higher than the critical value of 0.5. The highest AVE

value is Sensing Customer Needs (SCN) construct with the value of 0.902 and the lowest AVE value is Individuated Interaction (II) construct with the value of 0.530.

Table 4-3 Results of Measurement Scales

Constructs	Research Items	Loadings	AVE	CR	Cronbach's α
Service-Dominant Orientation	**Relational Interaction**				
	[RI1]	0.835	0.621	0.867	0.780
	[RI2]	0.743			
	[RI3]	0.749			
	[RI4]	0.822			
	Ethical Interaction				
	[EI1]	0.623	0.548	0.828	0.725
	[EI2]	0.787			
	[EI3]	0.773			
	[EI4]	0.766			
	Individuated Interaction				
	[II1]	0.653	0.530	0.818	0.703
	[II2]	0.724			
	[II3]	0.802			
	[II4]	0.726			
	Empowered Interaction				
	[EMI1]	0.725	0.599	0.855	0.773
	[EMI2]	0.860			
	[EMI3]	0.854			
	[EMI4]	0.634			
	Concerted Interaction				
	[CI1]	0.685	0.560	0.835	0.736
	[CI2]	0.715			
	[CI3]	0.849			
	[CI4]	0.734			
	Developmental Interaction				
	[DI1]	0.845	0.654	0.881	0.819
	[DI2]	0.918			
	[DI3]	0.836			
	[DI4]	0.601			

Constructs	Research Items	Loadings	AVE	CR	Cronbach's α
Dynamic Service Innovation Capabilities	**Sensing Customer Needs**				
	[SCN1]	0.955	0.902	0.949	0.892
	[SCN2]	0.945			
	[SCN3]	Deleted			
	Sensing Technological Options				
	[STO1]	0.801	0.643	0.843	0.723
	[STO2]	0.879			
	[STO3]	0.718			
	Conceptualizing				
	[CCT1]	0.890	0.765	0.907	0.845
	[CCT2]	0.921			
	[CCT3]	0.811			
	Coproducing and Orchestrating				
	[CO1]	0.895	0.832	0.908	0.800
	[CO2]	0.929			
	Scaling and Stretching				
	[SS1]	0.719	0.621	0.830	0.695
	[SS2]	0.842			
	[SS3]	0.798			
Knowledge Resources	**Knowledge of Customers**				
	[KM1]	0.741	0.683	0.865	0.764
	[KM2]	0.906			
	[KM3]	0.825			
	Knowledge of Industry				
	[KI1]	0.887	0.688	0.898	0.846
	[KI2]	0.883			
	[KI3]	0.817			
	[KI4]	0.720			
	Knowledge of Company's Practices				
	[KCP1]	0.737	0.625	0.869	0.799
	[KCP2]	0.859			
	[KCP3]	0.773			
	[KCP4]	0.788			

Constructs	Research Items	Loadings	AVE	CR	Cronbach's α
		New Service Concept			
	[NSC1]	0.807			
	[NSC2]	0.878	0.732	0.891	0.817
	[NSC3]	0.880			
		New Customer Interaction			
	[NCI1]	0.830			
	[NCI2]	0.860	0.661	0.854	0.742
	[NCI3]	0.745			
		New Value System/Business Partners			
Service Innovation	[NVS1]	0.899			
	[NVS2]	0.919	0.818	0.931	0.889
	[NVS3]	0.896			
		New Revenue Model			
	[NRM1]	0.867			
	[NRM2]	0.876	0.747	0.899	0.831
	[NRM3]	0.851			
		New Organizational Delivery System			
	[NODS1]	0.903			
	[NODS2]	0.912	0.806	0.926	0.880
	[NODS3]	0.878			
		New Technological Delivery System			
	[NTDS1]	0.894			
	[NTDS2]	0.888	0.795	0.921	0.871
	[NTDS3]	0.892			
		Service Climate			
	[SCL1]	0.677			
	[SCL2]	0.716			
	[SCL3]	0.791			
Organizational Factors	[SCL4]	0.836	0.645	0.927	0.907
	[SCL5]	0.874			
	[SCL6]	0.888			
	[SCL7]	0.817			
		Service Culture			
	[SCU1]	0.799			
	[SCU2]	0.861			
	[SCU3]	0.799	0.590	0.928	0.912
	[SCU4]	0.813			
	[SCU5]	0.730			

Constructs	Research Items	Loadings	AVE	CR	Cronbach's α
	[SCU6]	0.665			
	[SCU7]	0.763			
	[SCU8]	0.808			
	[SCU9]	0.653			
		Organizational Learning Orientation			
	[OLO1]	0.796			
	[OLO2]	0.715			
	[OLO3]	0.829			
	[OLO4]	0.578			
	[OLO5]	0.602	0.555	0.925	0.910
	[OLO6]	0.734			
	[OLO7]	0.806			
	[OLO8]	0.749			
	[OLO9]	0.852			
	[OLO10]	0.738			
		Environmental Munificence			
	[EM1]	0.868			
	[EM2]	0.927	0.817	0.930	0.889
	[EM3]	0.916			
		Environmental Dynamism			
Environmental Factors	[ED1]	0.766			
	[ED2]	0.901	0.773	0.910	0.887
	[ED3]	0.959			
		Environmental Heterogeneity			
	[EHE1]	0.796			
	[EHE2]	0.810	0.661	0.886	0.830
	[EHE3]	0.834			
	[EHE4]	0.815			
		Environmental Hostility			
	[EHO1]	0.891			
	[EHO2]	0.862	0.708	0.879	0.802
	[EHO3]	0.766			

Constructs	Research Items	Loadings	AVE	CR	Cronbach's α
		Financial Performance			
Organizational Performance	[FP1]	0.824			
	[FP2]	0.862			
	[FP3]	0.869	0.750	0.938	0.917
	[FP4]	0.914			
	[FP5]	0.859			
		Non-Financial Performance			
	[NFP1]	0.847			
	[NFP2]	0.748			
	[NFP3]	0.801	0.677	0.913	0.880
	[NFP4]	0.904			
	[NFP5]	0.805			

In addition, discriminant validity was assessed by the construct inter-correlations, AVE square root values, and a comparison between these values. As shown in Table 4-4, all construct correlations for first-order construct were lower than 0.7 (Kline, 1998) except for the correlation between first, New Revenue Model (NRM) construct and New Organizational Delivery System (NODS) with the value of 0.732; second, Service Climate (SCL) construct and Organizational Learning Orientation (OLO) construct with the value of 0.734; and the last one is between Service Culture (SCU) construct and Organizational Learning Orientation (OLO) construct with the value of 0.759. However, the AVE square root values of the first-order constructs are still higher than the first-order constructs' inter-correlations in the research model. As such, the measurement model of first-order constructs is considered satisfactory for use in hypotheses testing.

Table 4-4 Inter-correlations among first-order constructs

Construct	1	2	3	4	5	6	7	8	9	10
RI	***0.728***									
EI	0.594	***0.740***								
II	0.556	0.512	***0.728***							
EMI	0.454	0.567	0.546	***0.774***						
CI	0.562	0.672	0.580	0.586	***0.748***					
DI	0.482	0.424	0.542	0.419	0.491	***0.809***				
SCN	0.454	0.442	0.656	0.493	0.484	0.459	***0.950***			
STO	0.411	0.302	0.478	0.428	0.486	0.525	0.489	***0.802***		
CCT	0.463	0.346	0.480	0.469	0.530	0.442	0.537	0.639	***0.875***	
CO	0.145	0.265	0.269	0.534	0.414	0.186	0.415	0.522	0.500	***0.912***
SS	0.363	0.259	0.479	0.426	0.496	0.329	0.561	0.477	0.609	0.505
KM	0.400	0.390	0.474	0.509	0.502	0.405	0.478	0.324	0.426	0.390
KI	0.230	0.292	0.460	0.401	0.423	0.326	0.474	0.438	0.487	0.455
KCP	0.375	0.446	0.468	0.493	0.539	0.430	0.608	0.315	0.527	0.386
NSC	0.544	0.565	0.587	0.616	0.664	0.432	0.531	0.448	0.606	0.414
NCI	0.474	0.382	0.605	0.543	0.512	0.331	0.627	0.559	0.666	0.549
NVS	0.218	0.338	0.405	0.505	0.389	0.196	0.562	0.507	0.365	0.600
NRM	0.211	0.322	0.295	0.498	0.421	0.289	0.519	0.500	0.369	0.552
NODS	0.200	0.303	0.213	0.490	0.388	0.272	0.438	0.415	0.427	0.527
NTDS	0.419	0.332	0.352	0.386	0.467	0.398	0.523	0.521	0.497	0.366
SCL	0.360	0.325	0.496	0.524	0.506	0.431	0.572	0.546	0.635	0.477
SCU	0.433	0.429	0.518	0.382	0.433	0.365	0.594	0.375	0.396	0.373
OLO	0.420	0.451	0.517	0.459	0.531	0.381	0.534	0.480	0.425	0.467
EM	0.460	0.407	0.488	0.416	0.466	0.427	0.605	0.534	0.433	0.397
ED	0.100	0.223	0.283	0.247	0.244	0.101	0.478	0.266	0.125	0.341
EHE	0.471	0.519	0.564	0.560	0.544	0.476	0.374	0.492	0.429	0.450
EHO	0.345	0.398	0.383	0.367	0.375	0.279	0.403	0.381	0.235	0.284
FP	0.334	0.356	0.359	0.423	0.327	0.202	0.393	0.476	0.483	0.413
NFP	0.463	0.461	0.533	0.492	0.416	0.340	0.532	0.447	0.495	0.354

Notes: Below the diagonal = Inter-construct correlations; Diagonal = The square root of the AVE.

Table 4-4 (Continued)

Construct	11	12	13	14	15	16	17	18	19	20
RI										
EI										
II										
EMI										
CI										
DI										
SCN										
STO										
CCT										
CO										
SS	***0.788***									
KM	0.441	***0.826***								
KI	0.404	0.674	***0.829***							
KCP	0.506	0.653	0.553	***0.791***						
NSC	0.461	0.485	0.422	0.552	***0.856***					
NCI	0.530	0.483	0.470	0.602	0.644	***0.813***				
NVS	0.389	0.264	0.353	0.418	0.383	0.644	***0.904***			
NRM	0.363	0.412	0.456	0.485	0.366	0.535	0.670	***0.864***		
NODS	0.319	0.359	0.433	0.410	0.333	0.511	0.623	0.732	***0.898***	
NTDS	0.405	0.464	0.393	0.565	0.428	0.504	0.426	0.633	0.568	***0.892***
SCL	0.467	0.517	0.680	0.595	0.608	0.633	0.397	0.448	0.383	0.480
SCU	0.413	0.452	0.590	0.555	0.541	0.521	0.393	0.424	0.236	0.462
OLO	0.447	0.487	0.579	0.576	0.573	0.490	0.406	0.541	0.368	0.491
EM	0.420	0.483	0.467	0.429	0.473	0.442	0.416	0.553	0.288	0.466
ED	0.149	0.205	0.361	0.258	0.205	0.415	0.577	0.411	0.365	0.191
EHE	0.397	0.571	0.483	0.554	0.540	0.504	0.398	0.434	0.318	0.543
EHO	0.264	0.427	0.358	0.349	0.355	0.361	0.320	0.394	0.290	0.520
FP	0.297	0.355	0.343	0.422	0.220	0.463	0.579	0.545	0.531	0.343
NFP	0.438	0.453	0.504	0.431	0.350	0.334	0.574	0.556	0.562	0.411

Notes: Below the diagonal = Inter-construct correlations; Diagonal = The square root of the AVE.

Table 4-4 (Continued)

Construct	21	22	23	24	25	26	27	28	29
RI									
EI									
II									
EMI									
CI									
DI									
SCN									
STO									
CCT									
CO									
SS									
KM									
KI									
KCP									
NSC									
NCI									
NVS									
NRM									
NODS									
NTDS									
SCL	***0.803***								
SCU	0.655	***0.768***							
OLO	0.734	0.759	***0.745***						
EM	0.526	0.644	0.652	***0.904***					
ED	0.146	0.262	0.254	0.280	***0.879***				
EHE	0.636	0.689	0.697	0.620	0.236	***0.813***			
EHO	0.378	0.582	0.508	0.556	0.339	0.699	***0.841***		
FP	0.577	0.592	0.640	0.411	0.172	0.549	0.405	***0.866***	
NFP	0.597	0.726	0.651	0.545	0.195	0.642	0.538	0.663	***0.823***

Notes: Below the diagonal = Inter-construct correlations; Diagonal = The square root of the AVE.

4.2.2 Evaluation of Measurement Model – Second Order Constructs

4.2.2.1 Service-Dominant Orientation

Service-dominant orientation is conceptualized as a formative second-order construct. Similar to the case of reflective higher order constructs, formative second-order construct reverse the direction of the relationships between the higher and the lower order constructs (Tenenhaus, et al., 2005). Following the suggestions by Chin (1988) and Diamantopoulos and Winklhofer (2001), the measurement quality of the formative second-order construct was examined. First, the correlations among the first-order constructs were assessed. As shown in Table 4-4, the correlations among the six first-order service-dominant orientation dimensions are lower than 0.672. Second, all first-order service-dominant orientation components have significant path coefficients in forming service-dominant orientation. As shown in Table 4-5, concerted interaction ($\beta = 0.228$, $p < 0.001$) is the most important followed by empowered interaction ($\beta = 0.238$, $p < 0.001$), relational interaction ($\beta = 0.213$, $p < 0.001$), individuated interaction ($\beta = 0.198$, $p < 0.001$), ethical interaction ($\beta = 0.195$, $p < 0.001$), and developmental interaction ($\beta = 0.207$, $p < 0.001$).

Third, to assess multicollinearity, the variance inflation factors (VIF) were computed for these first-order service-dominant orientation dimensions. VIF values above ten would suggest the existence of excessive multicollinearity and raise doubts about the validity of the formative measurement (Diamantopoulos and Winklhofer, 2001). As shown in Table 4-5, VIF values for the first-order service-dominant orientation dimensions varied from 1.493 to 2.186. Therefore, multicollinearity is not a concern for the service-dominant orientation construct. Lastly, the discriminant validity among first-order constructs of service-dominant orientation and second-order construct of organizational performance is examined by investigating their correlation matrix as shown in Table 4-9. The results show that the square root of AVE extracted from each construct, is higher than its shared variance (i.e. the correlations between that construct and any other constructs) (Fornell and Larcker, 1981). Therefore, all constructs in the proposed model satisfy the discriminant validity criterion.

Table 4-5 Measurement Evaluation of Service-Dominant Orientation

First Order Construct	Second Order Construct		
	Service-Dominant Orientation		
	Path Coefficient	**t-value**	**VIF**
Relational Interaction	0.213***	51.694	1.752
Ethical Interaction	0.195***	42.655	1.813
Individuated Interaction	0.198***	44.874	1.874
Empowered Interaction	0.238***	58.763	1.730
Concerted Interaction	0.228***	61.106	2.186
Developmental Interaction	0.207***	41.509	1.493

Notes: *** $p < 0.001$

4.2.2.2 Dynamic Service Innovation Capabilities

Dynamic service innovation capabilities are conceptualized as a formative second-order construct. Following the suggestions by Chin (1988) and Diamantopoulos and Winklhofer (2001), the measurement quality of the formative second-order construct was examined. First, the correlations among the first-order constructs were assessed. As shown in Table 4-4, the correlations among the five first-order dynamic service innovation capabilities dimensions are lower than 0.639. Second, all first-order dynamic service innovation capabilities components have significant path coefficients in forming dynamic service innovation capabilities. As shown in Table 4-6, conceptualizing ($\beta = 0.347$, $p < 0.001$) is the most important followed by sensing technological options ($\beta = 0.273$, $p < 0.001$), sensing customer needs ($\beta = 0.251$, $p < 0.001$), coproducing and orchestrating ($\beta = 0.220$, $p < 0.001$), and scaling and stretching ($\beta = 0.164$, $p < 0.001$).

Third, to assess multicollinearity, the variance inflation factors (VIF) were computed for these first-order dynamic service innovation capabilities dimensions. As shown in Table 4-6, VIF values for the first-order dynamic service innovation capabilities dimensions varied from 1.561 to 2.053. Therefore, multicollinearity is not a concern for the dynamic service innovation capabilities construct. Lastly, the discriminant validity among first-order constructs of dynamic service innovation capabilities and second-order construct of organizational performance is examined by investigating their correlation matrix as shown in Table 4-9. The results show that the square root of AVE extracted from each construct, is higher than its shared variance (i.e. the correlations between that construct and any other constructs) (Fornell and Larcker, 1981). Therefore, all constructs in the proposed model satisfy the discriminant validity criterion.

Table 4-6 Measurement Evaluation of Dynamic Service Innovation Capabilities

First Order Construct	Second Order Construct		
	Dynamic Service Innovation Capabilities		
	Path Coefficient	**t-value**	**VIF**
Sensing Customer Needs	0.251***	52.937	1.641
Sensing Technological Options	0.273***	68.368	1.791
Conceptualizing	0.347***	85.819	2.053
Coproducing & Orchestrating	0.220***	45.103	1.561
Scaling & Stretching	0.164***	41.715	1.902

Notes: *** $p < 0.001$

4.2.2.3 Knowledge Resources

Knowledge resources are conceptualized as a formative second-order construct. Following the suggestions by Chin (1988) and Diamantopoulos and Winklhofer (2001), the measurement quality of the formative second-order construct was examined. First, the correlations among the first-order constructs were assessed. As shown in Table 4-4, the correlations among the three first-order knowledge resources dimensions are lower than 0.674. Second, all first-order knowledge resources components have significant path coefficients in forming knowledge resources. As shown in Table 4-7, knowledge of customers ($\beta = 0.318$, $p < 0.001$) is the most important followed by knowledge of industry ($\beta = 0.425$, $p < 0.001$) and knowledge of company's practices ($\beta = 0.413$, $p < 0.001$).

Third, to assess multicollinearity, the variance inflation factors (VIF) were computed for these first-order knowledge resources dimensions. As shown in Table 4-7, VIF values for the first-order knowledge resources dimensions varied from 1.821 to 2.307. Therefore, multicollinearity is not a concern for the knowledge resources construct. Lastly, the discriminant validity among first-order constructs of knowledge resources and second-order construct of organizational performance is examined by investigating their correlation matrix as shown in Table 4-10. The results show that the square root of AVE extracted from each construct, is higher than its shared variance (i.e. the correlations between that construct and any other constructs) (Fornell and Larcker, 1981). Therefore, all constructs in the proposed model satisfy the discriminant validity criterion.

Table 4-7 Measurement Evaluation of Knowledge Resources

First Order Construct	Second Order Construct		
	Knowledge Resources		
	Path Coefficient	t-value	VIF
Knowledge of Customers	0.318***	86.815	2.307
Knowledge of Industry	0.425***	68.047	1.857
Knowledge of Company's Practices	0.413***	66.220	1.821

Notes: *** $p < 0.001$

4.2.2.4 Service Innovation

Service innovation is conceptualized as a formative second-order construct. Following the suggestions by Chin (1988) and Diamantopoulos and Winklhofer (2001), the measurement quality of the formative second-order construct was examined. First, the correlations among the first-order constructs were assessed. As shown in Table 4-4, the correlations among the six first-order service innovation dimensions are lower than 0.732. Second, all first-order service innovation components have significant path coefficients in forming service innovation. As shown in Table 4-8, new technological delivery system ($\beta = 0.222$, $p < 0.001$) is the most important followed by new revenue model ($\beta = 0.216$, $p < 0.001$), new customer interaction ($\beta = 0.207$, $p < 0.001$), new organizational delivery system ($\beta = 0.210$, $p < 0.001$), new service concept ($\beta = 0.204$, $p < 0.001$), and new value system ($\beta = 0.221$, $p < 0.001$).

Third, to assess multicollinearity, the variance inflation factors (VIF) were computed for these first-order service innovation dimensions. As show in Table 4-8, VIF values for the first-order service innovation dimensions varied from 1.670 to 2.999. Therefore, multicollinearity is not a concern for the service innovation construct. Lastly, the discriminant validity among first-order constructs of service innovation and second-order construct of organizational performance is examined by investigating their correlation matrix as shown in Table 4-9. The results show that the square root of AVE extracted from each construct, is higher than its shared variance (i.e. the correlations between that construct and any other constructs) (Fornell and Larcker, 1981). Therefore, all constructs in the proposed model satisfy the discriminant validity criterion.

Table 4-8 Measurement Evaluation of Service Innovation

First Order Construct	Second Order Construct		
	Service Innovation		
	Path Coefficient	**t-value**	**VIF**
New Service Concept	0.204***	52.903	1.670
New Customer Interaction	0.207***	59.877	2.516
New Value System	0.221***	52.017	2.550
New Revenue Model	0.216***	65.274	2.999
New Organizational Delivery System	0.210***	59.804	2.446
New Technological Delivery System	0.222***	68.068	1.862

Notes: *** $p < 0.001$

Table 4-9 Inter-correlations among first- and second-order constructs

Construct	1	2	3	4	5	6	7	8	9	10
RI	***0.728***									
EI	0.594	***0.740***								
II	0.556	0.512	***0.728***							
EMI	0.454	0.567	0.546	***0.774***						
CI	0.562	0.672	0.580	0.586	***0.748***					
DI	0.482	0.424	0.542	0.419	0.491	***0.809***				
SCN	0.454	0.442	0.656	0.493	0.484	0.459	***0.950***			
STO	0.411	0.302	0.478	0.428	0.486	0.525	0.489	***0.802***		
CCT	0.463	0.346	0.480	0.469	0.530	0.442	0.537	0.639	***0.875***	
CO	0.145	0.265	0.269	0.534	0.414	0.186	0.415	0.522	0.500	***0.912***
SS	0.363	0.259	0.479	0.426	0.496	0.329	0.561	0.477	0.609	0.505
KM	0.400	0.390	0.474	0.509	0.502	0.405	0.478	0.324	0.426	0.390
KI	0.230	0.292	0.460	0.401	0.423	0.326	0.474	0.438	0.487	0.455
KCP	0.375	0.446	0.468	0.493	0.539	0.430	0.608	0.315	0.527	0.386
NSC	0.544	0.565	0.587	0.616	0.664	0.432	0.531	0.448	0.606	0.414
NCI	0.474	0.382	0.605	0.543	0.512	0.331	0.627	0.559	0.666	0.549
NVS	0.218	0.338	0.405	0.505	0.389	0.196	0.562	0.507	0.365	0.600
NRM	0.211	0.322	0.295	0.498	0.421	0.289	0.519	0.500	0.369	0.552
NODS	0.200	0.303	0.213	0.490	0.388	0.272	0.438	0.415	0.427	0.527
NTDS	0.419	0.332	0.352	0.386	0.467	0.398	0.523	0.521	0.497	0.366
OP	0.435	0.446	0.486	0.500	0.406	0.295	0.505	0.507	0.536	0.422

Notes: Below the diagonal = Inter-construct correlations; Diagonal = The square root of the AVE.

Table 4-9 (Continued)

Construct	11	12	13	14	15	16	17	18	19	20	21
RI											
EI											
II											
EMI											
CI											
DI											
SCN											
STO											
CCT											
CO											
SS	***0.788***										
KM	0.441	***0.826***									
KI	0.404	0.674	***0.829***								
KCP	0.506	0.653	0.553	***0.791***							
NSC	0.461	0.485	0.422	0.552	***0.856***						
NCI	0.530	0.483	0.470	0.602	0.644	***0.813***					
NVS	0.389	0.264	0.353	0.418	0.383	0.644	***0.904***				
NRM	0.363	0.412	0.456	0.485	0.366	0.535	0.670	***0.864***			
NODS	0.319	0.359	0.433	0.410	0.333	0.511	0.623	0.732	***0.898***		
NTDS	0.405	0.464	0.393	0.565	0.428	0.504	0.426	0.633	0.568	***0.892***	
OP	0.400	0.442	0.468	0.462	0.633	0.604	0.393	0.415	0.315	0.465	***0.769***

Notes: Below the diagonal = Inter-construct correlations; Diagonal = The square root of the AVE

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4.3 Common Method Bias

In order to assess the issues of common method bias, firstly, a Harmon one-factor test was adopted and loaded all variables into a principal component factor analysis (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). The explained variance of one-factor test is 32.57% in the un-rotated solution which is less than 50%. Second, discriminated validity can also be used to identify common method bias. As what explained above, discriminant validity also showed satisfactory results. All the AVE square root values are higher than the constructs' inter-correlations in the research model. These results suggested that the issues of common method bias are still under the accepted level.

4.4 Evaluation of Structural Model

4.4.1 Interrelationship between Service Innovation and Its Antecedents and Consequence

Table 4-10 and Figure 3 shows the results of interrelationship between service innovation and its antecedents and consequence. The results show that service-dominant orientation (β= 0.447; $p < 0.001$) and knowledge resource (β= 0.616; $p < 0.001$) have positive influences on dynamic service innovation capabilities. Service-dominant orientation (β= 0.163, $p < 0.05$) and knowledge resource (β= 0.201, $p < 0.001$) have positive influences on dynamic service innovation capabilities. Knowledge resources (β=0.196, $p<0.001$) have a positive influence on service dominant orientation. Dynamic service innovation capabilities (β= 0.565, $p < 0.001$) has a positive influence on service innovation. Service innovation has a positive influence on financial performance (β=0.296, $p < 0.001$) and non-financial performance (β=0.563, $p < 0.001$). Financial performance has a positive influence on non-financial performance (β= 0.465, $p < 0.001$). Furthermore, for the control variables, company age (β= -0.100; $p < 0.001$) and company capital (β= 0.089; $p < 0.001$) show significant effects on organizational performance. However, these influences are not as strong as the effect of service innovation on organizational performance. Company size (β= 0.001; $p > 0.05$) shows non-statistically significant effect on organizational performance.

The R2 values of service dominant orientation, dynamic service innovation, service innovation, financial performance and non-financial performance are 0.380; 0.588; 0.710; 0.498 and 0.317, respectively, which are higher than its critical value of 0.1 (Falk & Miller 1992), and the goodness-of-fit of the model is 0.510, which is considered as a large effect size for R2 (Vinzi, et al. 2010). According to Vinzi et al. (2010), the goodness of fit index (GoF) greater than 0.36 is considered to be large; 0.25 is described as medium, while 0.10 is described as small. Therefore, H1, H2, H3, H4, H5, H6, H8, H9, H10 are supported.

Table 4-10 Path Coefficients of Service Innovation and Its Antecedents and Consequence

Hyp.	Path	Standardize Estimate	*t*-value
H_1	S-D Orientation → Dynamic Service Innovation Capabilities	0.447***	6.977
H_2	S-D Orientation → Service Innovation	0.163*	1.989
H_3	Knowledge Resources → S-D Orientation	0.196***	9.613
H_4	Knowledge Resources → Dynamic Service Innovation Capabilities	0.616***	6.317
H_5	Knowledge Resources → Service Innovation	0.201***	2.647
H_6	Dynamic Service Innovation Capabilities → Service Innovation	0.565***	6.481
H_8	Service Innovation → Financial Performance	0.296***	4.835
H_9	Service Innovation → Non-Financial Performance	0.563***	8.341
H_{10}	Financial Performance → Non-Financial Performance	0.465***	6.120
	Company Age	-0.100***	5.442
	Company Size	0.001	0.071
	Company Capital	0.089***	5.123
	Construct R^2		
	S-D Orientation	0.380	
	Dynamic Service Innovation Capabilities	0.588	
	Service Innovation	0.710	
	Financial Performance	0.498	
	Non-Financial Performance	0.317	
	Goodness-of-Fit		
	0.510		

Notes: *** $p < 0.001$

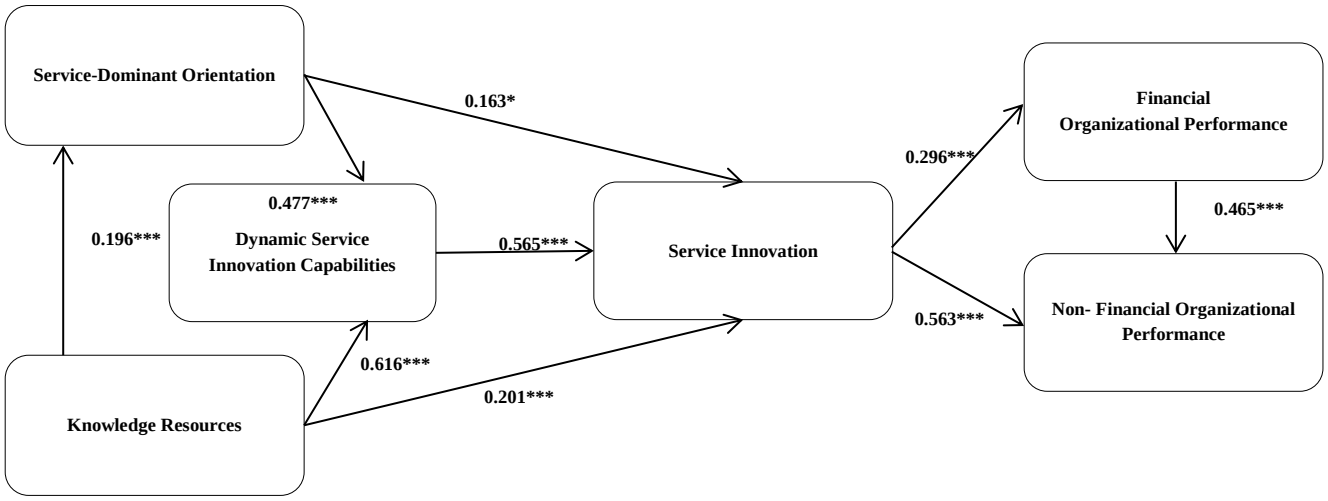

Figure 3. The Interrelationships between Service Innovation and Its Antecedents and Consequence

4.3.2 The Moderating Effect of Knowledge Integration Mechanism

Table 4-11 shows the results of the moderating effects of knowledge integration mechanism (KIM). The results show (M9) that knowledge integration mechanism has no moderating effects on the relationship between service dominant orientation, dynamic service innovation capabilities, knowledge resource and service innovation. In addition, the R^2 value of service innovation is 0.772, respectively, which is higher than its critical value of 0.1 (Falk & Miller, 1992), and ΔR^2 of service innovation is 0.016, respectively

Table 4-11 Path Coefficients of the Moderating Effect of KIM

Hyp.	Path	M1	M8	M9
	SDO → SI	0.163*	0.180***	0.152^{+}
	KR → SI	0.201***	0.077	0.075
	DSIC → SI	0.565***	0.372***	0.386**
	KIM → SI		0.356***	0.331***
	SDO*KIM → SI			-0.223
	DSIC*KIM → SI			0.279
	KR*KIM → SI			-0.109
		Construct R^2		
	Service Innovation	0.670	0.753	0.772

Notes: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

4.3.3 The Moderating Effect of Knowledge Sharing

Table 4-12 shows the results of the moderating effects of knowledge sharing (KS). The results show (M9) that knowledge sharing has no moderating effects on the relationship between service dominant orientation, dynamic service innovation capabilities, knowledge resource and service innovation. In addition, the R2 value of service innovation is 0.816, respectively, which is higher than its critical value of 0.1 (Falk & Miller, 1992), and ΔR^2 of service innovation is 0.044, respectively

Table 4-12 Path Coefficients of the Moderating Effect of Knowledge Sharing

Hyp.	Path	M1	M8	M9
	SDO → SI	0.163*	0.105	0.117***
	KR → SI	0.201***	0.044	0.060^{+}
	DSIC → SI	0.565***	0.432***	0.278**
	KS → SI		0.405***	0.374***
	SDO*KS → SI			0.226
	DSIC*KS → SI			-0.086
	KR*KS → SI			0.026
		Construct R^2		
	Service Innovation	0.670	0.772	0.816

Notes: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

4.3.4 The Moderating Effects of Organizational Contingencies

Table 4-13 shows the results of the moderating effects of organizational contingencies. The results show (M3) that service climate has no moderating effect on the relationship between service innovation and organizational performance (OP) (β= 0.003; $p > 0.05$) while service culture negatively moderates the effects of service innovation on organizational performance (β= -0.084; $p < 0.001$). In addition, all the R2 values of organizational performance are higher than its critical value of 0.1 (Falk & Miller 1992).

Table 4-13 Path Coefficients of the Moderating Effects of Organizational Contingencies

Hyp.	Path	M1	M2	M3
	SI → OP	0.582***	0.315***	0.314***
	SCL → OP		0.435***	0.436***
	SCU → OP		0.569***	0.533***
H_{13a}	SI*SCL → OP			0.003
H_{13b}	SI*SCU → OP			-0.084***
		Construct R^2		
	Organizational Performance (SCL)	0.371	0.484	0.484
	Organizational Performance (SCU)	0.371	0.594	0.600

Notes: *** $p < 0.001$

4.3.5 The Moderating Effects of Environmental Conditions

Table 4-14 shows the results of the moderating effects of environmental conditions. The results show (M9) that environmental munificence (β= 0.028; p < 0.05) and environmental dynamism (β= 0.054; p < 0.01) positively moderate the effect of service innovation on organizational performance while environmental heterogeneity (β= -0.125; p < 0.001) and environmental hostility (β= -0.115; p < 0.001) negatively moderate the effect of service innovation on organizational performance. In addition, all the R2 values of organizational performance are higher than its critical value of 0.1 (Falk & Miller 1992).

Table 4-14 Path Coefficients of the Moderating Effects of Environmental Conditions

Hyp.	Path	M1	M8	M9
	SI → OP	0.582***	0.426***	0.418***
	EM → OP		0.272***	0.284***
	ED → OP		-0.094***	0.088***
	EHE → OP		0.467***	0.427***
	EHO → OP		0.300***	0.252***
	SI*EM → OP			0.028*
	SI*ED → OP			0.054**
	SI*EHE → OP			-0.125***
	SI*EHO → OP			-0.115***
		Construct R^2		
	Organizational Performance (EM)	0.371	0.421	0.442
	Organizational Performance (ED)	0.371	0.378	0.381
	Organizational Performance (EHE)	0.371	0.513	0.527
	Organizational Performance (EHO)	0.371	0.440	0.451

Notes: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

5. CONCLUSION

5.1 Research Conclusions

This study aims to explore an integrative framework of service innovation which consist of antecedents, mediator, consequence, and moderator. The antecedents are service-dominant orientation and knowledge resources, the important mediator is dynamic service innovation capabilities, while the consequence is organizational performance. The moderator consists of four important elements which are knowledge integration mechanism, knowledge sharing, organizational contingencies, and environmental conditions.

Several conclusions can be draw from this study. First, service dominant orientation positively influences dynamic service innovation capabilities and service innovation. As what this study proposed, a company which has service dominant orientation tends to have better dynamic service innovation

capabilities and service innovation. Service- dominant orientation companies emphasize value co-creation processes through interactions and with its value network partners, especially customers (Karpen et al., 2015). It is suggested that during interactions with customers, new service values or idea may emerge (Arnould & Thompson, 2005). Frequent interaction with customers may help companies to understand customer's need and preferences as well as generate new knowledge (Ordanini & Parasuraman, 2011). Therefore, the higher the service dominant orientation that a company has, the better its dynamic service innovation capabilities and service innovation will be.

Second, knowledge resources have a positive influence on service-dominant orientation, dynamic service innovation capabilities and service innovation. These results support the proposed hypotheses. Better knowledge resources that a company has may enhance its service innovativeness because knowledge is a source for new service value creation (Lusch, Vargo, & O'brien, 2007). According to S-D logic, knowledge is an operant resource that helps companies to gain competitive advantage (Vargo & Lusch, 2004). Knowledge is a complex resource that is important for innovation and success (Paswan, D'Souza, & Rajamma, 2014; Serenko & Bontis, 2004). Therefore, having greater knowledge resources is important for a company especially in creating new service values.

Third, dynamic service innovation capabilities positively influence service innovation. This result supports the hypothesis which is better dynamic service innovation capabilities lead to better service innovation. Dynamic service innovation capabilities play an important role on service innovation because it facilitates a company to explore and to answer unmet needs of current and potential customers (Crossan & Apaydin, 2010; Gronroos, 2006). Successful service innovation depends on the capabilities of a company to effectively and efficiently sense customer needs, sense technological options, conceptualize, coproduce and orchestrate, and scale and stretch service values (Ballantyne & Varey, 2006; Janssen, Castaldi, & Alexiev, 2015). Therefore, the better the dynamic service innovation capabilities that a company has, the better its service innovation will be.

Fourth, service innovation has a positive influence on organizational performance. This result is in line with previous studies (e.g., Avlonitis, Papastathopoulou, & Gounaris, 2001; Chen, Tsou, & Huang, 2009; Ordanini & Parasuraman, 2011). Better service innovation tends to enhance organizational performance. Avlonitis, Papastathopoulou, and Gounaris (2001) found that new delivery processes positively influence financial performance such as profitability and sales. Chen, Tsou, & Huang (2009) revealed that service delivery innovation leads to better financial and non-financial performance. Furthermore, Ordanini & Parasuraman (2011) found that both innovation radicalness and innovation volume have positive effects on performance.

Fifth, this study examined the moderating effects of knowledge integration mechanism and knowledge sharing on the relationship between service innovation and its antecedents. The results show that both of knowledge integration mechanism and knowledge sharing have no moderating effect on the relationship between service innovation and its antecedents. These results could not prove the proposed hypotheses. It may be because the sample of this study mostly are small size companies, therefore, they do not really have knowledge integration mechanism and knowledge sharing practice.

Sixth, organization contingencies which consists of service climate and service culture on the relationship between service innovation and its consequence. The results show that service climate has no moderating effect on the relationship between service innovation and organizational performance, while service culture negative moderates the effects of service innovation on organizational performance. It is suggested that better service culture may weaken the effects of service innovation on organizational performance. The results also show that all organizational factors may weaken the effect of service innovation on organizational performance. It is suggested that with better organizational factors do not guarantee better service innovation leads to better organizational performance. It is likely that there are other factors that can strengthen the effect of service innovation on organizational performance, such as environmental munificence and environmental dynamism.

Last, this study examined the moderating effects of environmental factors which consist of environmental munificence, environmental dynamism, environmental heterogeneity, and environmental hostility on the relationship between service innovation and its consequence. The results show that environmental munificence and environmental dynamism positively moderate the effect of service innovation on organizational performance. These results support S-D logic perspective in viewing external environment as resources. According to S-D logic, the ecosystem is something to collaborate with in the co-creation of service as well as integrating firm, individual, and public resources (Lusch, Vargo, & O'brien, 2007). It is suggested that in any environmental conditions (i.e., environmental munificence, dynamism), when a company has better dynamic service innovation capabilities, better service innovation may be achieved. The results also show that environmental heterogeneity and environment hostility negatively moderate the effect of service innovation on organizational performance. From these results, it is suggested that when the critical resources of a company is rare, only interaction capabilities and knowledge are not enough for a company to create innovative service. It is also suggested that when the environmental conditions are too diverse as well as the competition is too fierce, innovative service does not guarantee better organizational performance.

5.2 Suggestion and Implication

This study contributes to both service literature and practitioners. Academic implication and managerial implication are provide below:

5.2.1 Academic Implications

This study contributes to the literature from several aspects. First, this study contributes to service innovation literature by examining an integrative model of service innovation based on service-dominant logic perspective (Vargo & Lusch, 2004) which is still rare in the literature. Based on foundational premise 6 (FP6) of S-D logic which stated that the customer is always a co-creator of value, FP8 which stated that a service-centered view is inherently customer oriented and relational, FP1 which stated that service is the fundamental basis of exchange, and FP4 which stated that operant resources are the fundamental source of competitive advantage (Vargo & Lusch, 2004; 2008), this study proposed and proved that there are three important antecedents of service innovation which are service-dominant orientation, dynamic service innovation capabilities, and knowledge resources.

Second, the results of this study also contribute to the S-D logic literature by proving that S-D logic is appropriate for studying service innovation (Ordanini & Parasuraman, 2011). Since S-D logic offers conceptualization of service as a co-produced process and co-created values that involves the application of competences (e.g., knowledge and skills) which supports new perspective for service innovation (Ordanini & Parasuraman, 2011), this study applied S-D logic as a theoretical foundation. This study proved that the application of competences such as service-dominant orientation, dynamic service innovation capabilities, and knowledge resources leads to better service innovation.

Lastly, this study contributes to the literature by proving that environmental factors such as environmental munificence, environmental dynamism, environmental heterogeneity, and environmental hostility, may support co-producing and co-creating values activities as long as the company can overcome resistances resources and integrate those resources with other organization resources (Lusch, Vargo, & O'brien, 2007). In the unpredictable environment, value propositions that a company offers depend on the collection of resources and competences which the company can continually renew, create, integrate, and transform.

5.2.2 Managerial Implications

Furthermore, this study will contribute to practitioners from following aspects. The results of this study show that service innovation may be enhanced by service-dominant orientation, dynamic service

innovation capabilities, and knowledge resources. Therefore, first, managers should try to build up a service-dominant orientation which is a company's capabilities to interact with value network partners, especially with customers. By having interaction capabilities, a company may create innovative service values that can be offered to customers because through interacting with customers, a company may understand better what customer needs and wants.

Second, managers should also try to build up dynamic service innovation capabilities which consist of sensing customer needs, sensing technological options, conceptualizing, coproducing and orchestrating, and scaling and stretching. These capabilities may help a company to generate service innovation. The two most important capabilities that a company needs to have are sensing customer needs and conceptualizing. After understands what customer needs and wants, it is also important for a company to have the ability to conceptualize new service ideas or values.

Third, it is better for a company to have knowledge resources such as knowledge of customers, knowledge of industry, and knowledge of company's practices. By having these knowledge resources, it is likely that a company can easily generate innovative service offerings. Even though the results of this study show that knowledge of industry and knowledge of company's practices have more influence on service innovation than knowledge of customers, this study still suggests that having knowledge about customers is important and beneficial for a company especially when a company wants to do innovation.

Fourth, the results of this study show that multidimensional aspects of service innovation tend to lead to better organizational financial and non-financial performance. From those six dimensions of service innovation, new service concept, new customer interaction, and new revenue model may lead to greater financial and non-financial performance. Furthermore, using new business partners and the latest technology for service offerings also enhance non-financial performance. Therefore, a company may emphasize more on these types of service innovation in order to generate greater profits and market share as well as to increase customers' loyalty, attract new customers, and build up good image and reputation.

Lastly, conducting business in the dynamic and unpredictable environments should not be a threat for a company. Following S-D logic perspective, a company should view external environments as resources that the company needed. The ecosystem may be integrated and collaborated into value co-creation and a company needs to overcome resistances and proactively co-create these environments. The entire community is resources for a company to collaborate with which can also be the source of competitive advantage.

5.3 Limitations and Future Research Direction

Despite the contributions that this study will give, several research limitations cannot be avoided. First, empirical study was conducted by cross-sectional data in one period of time. The dynamic and evolution of service innovation practices may not be captured. Future study may collect longitudinal data to see the changing of service innovation practices over time. Second, data that were collected only from retail companies in Taiwan and Indonesia. Future research may collect the data from several industries and different countries in order to test the generalizability of research model. Third, this study did not compare different types of retails to test the hypotheses. Future study may compare the differences among different retail companies, such as banking and automotive retail. Fourth, organizational performance was measured by subjective data which could not show the actual performance of companies. Future study may collect objective data to measure organizational performance.

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科技部補助專題研究計畫出席國際學術會議心得報告

日期:106 年 07 月 21 日

計畫編號	MOST 105-2410-H-343-004		
計畫名稱	科-以服務主導邏輯為觀點之服務創新整合模式		
出國人員姓名	吳萬益	服務機構及職稱	國際企業學士學位學程
會議時間	2017/3/8-2017/3/10	會議地點	美國小岩城
會議名稱	(中文) 2017 西南決策科學學會第 48 屆會議 (英文) 2017 Southwest Decision Sciences Institute's 48th Annual Meeting		
發表論文題目	(中文) 服務創新之前置與結果變數 (英文) The Antecedents and Consequence of Service Innovation		

一、參加會議經過

本次前往美國阿肯色州小岩城參加 2017 SWDSI 舉辦之國際學術研討會，深覺獲益良多。首先此會議題是在管理決策領域中相當重要的學術會議，大會對於論文之審查相當嚴格，且參與人數眾多，相關領域學者均能夠聚集在一起交換研究心得。會議進行之過程，不論是在專題演講、論文發表及專題討論之過程安排均井然有序，此次研討會共分為以下幾個主題：(1)Operations Management, (2)Internet of Things and Big data, (3)Innovative Education, (4)Accounting and Enterprise System, (5)Business Analytics, (6) DSS and Expert System, (7)Information Security and Privacy, (8)Finance, (9)Marketing, (10)Management and Organizational Behavior, (11)International Business, (12)Social Media and Social Networking, (13)Management Information System , (14) Healthcare and Economics, (15)The Explosion of Analytics in Health Care, (16)Big Data and Special Topics, (17)E-commerce & Mobile, (18)Supply Chain, Logistics and UAVs, (19)Quantitative Methods, (20)Sustainability and Triple Bottom Line.

本人是 3 月 7 日深夜由桃園機場出發，路經舊金山、芝加哥，於 3 月 8 日上午十一點左右抵達小岩城，大會地點為小岩城之 Marriot Little Rock and Statehouse Convention Center，大會於 3 月 8 日晚上舉辦歡迎晚宴。接著於 3 月 9 日及 10 日於 Marriot Little Rock Convention Center 分五個場次進行論文發表，會中並舉辦 Workshop, Journal Editors' Panel, Business Meeting 及 Student Consortium 等。本人在此次會議中是以「The Antecedents and Consequence of Service Innovation」為主題發表論文，本論文主要是在探討服務創新之前置變數及結果變數，研究結果顯示服務主導導向邏輯、動態服務創新能力及知識支援對於服務創新具有顯著之影響，而服務創新將進一步促進組織績效之提升，由於過去對於服務導向邏輯及動態服務創新能力之議題尚未能

有效整能具體之前置變數與結果變數，本研究之結果可以提供學者進行更進一步的學術實證，也可以提供經理人擬定服務創新策略之參考。

二、與會心得

此次前往美國阿肯色州小岩城參加 2017 SWDSI 國際學術研討會，深覺獲益良多。此會議是由 Decision Science Institute Southwest Region 協會主辦。大會主席是由美國德州大學 Pan-American 分校 Dr. Hong Qin 擔任主席。美國中西部的資源一向缺乏，所以此次大會除了 SWDSI 在此召開之外，其他協會包括 Federation of Business Disciplines, American Accounting Association Southwest Region, Association of Business Communication; Southwestern U.S., Association of Business Information System, Association of Collegiate Marketing Educators, Southwest Academy of Management, Southwest Case Research Association, Southwestern Society of Economists 等均在同一時間在此 Convention Center 召集開會並發表論文，這樣可以吸引更多書商及製作教學軟體的學者能夠前來當場示範，形成經濟規模，而使註冊費大幅降低。此次本人以服務創新之議題發表論文，受到與會學者相當高度的重視，後來 IJSS (Internationl Journal of Standard and Service)主編之邀請投稿，目前該文章以接受，正在進行最後校稿中。

三、發表論文全文或摘要

如附件一所示

四、建議

本人此次在大會中發表論文，主要是提出服務主導導向邏輯及動態服務創新能力之影響立，本研究提出服務創新之前置變數與結果變數之模型，此一發現已引起與會學者的注意，紛紛表示願意進行合作研究，因此利用此次開會的機會，希望能夠針對此議題進行更深入的研究。

五、攜回資料名稱及內容

此次與會本人已帶回大會手冊及論文摘要，將再予詳細研讀，有部分行銷議題或消費者行為相關領域之論文將加以整理作為往後之教材，部分則作為往後研究之參考資料。

THE ANTECEDENTS AND CONSEQUENCE OF SERVICE INNOVATION

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ABSTRACT

Service innovation is a complex field which represents various disciplines. The nature and process of innovation has radically shifted as well in the past decade. Based on service-dominant (S-D) logic, this study developed research model which consists of the antecedents and consequence of service innovation. S-D logic allows us to view service as a transcending mental model for all types and forms of innovation, tangible or intangible. Survey study was conducted. Data were collected by both online and offline questionnaires. Totally, 112 data from retail companies in Indonesia were used for analyses. The results show that first, service-dominant orientation, dynamic service innovation capabilities, and knowledge resources positively influence on service innovation. Second, service innovation positively influences organizational performance. This study contributes to the current literature by examining an integrative model of service innovation based on service-dominant logic perspective, proving that S-D logic is appropriate for studying service innovation.

Keywords: *service innovation, service-dominant orientation, dynamic service innovation capabilities, knowledge resources*

INTRODUCTION

Service innovation is a complex field which represents various disciplines. Many scholars from different disciplines have been paying attention to service innovation research. Those disciplines include marketing (e.g., Berry, et al., 2006; Nijssen, et al., 2006; Oliveira & Von Hippel, 2011), economics (e.g., Cainelli, et al., 2006; Gallouj, 2002; Gallouj & Savona, 2008), information systems (e.g., Alter, 2008; Lyytinen & Rose 2003; Rai & Sambamurthy, 2006), operations (e.g., Metters & Marucheck, 2007; Oke, 2007), and strategy (e.g., Dorner, et al., 2011). They also have been exploring multiple dimensions of service innovation, following unique approaches, building various conceptual and analytical frameworks, and adopting distinct perspectives (Rubalcaba, et al., 2012).

The nature of service innovation is multidimensional and varied (Argawal & Selen, 2011). Therefore, conceptualizing service innovation as multidimensional is appropriate. This study adopts multidimensional service innovation conceptualization from Janssen, et al. (2015) which first introduced by den Hertog, et al. (2010). Multidimensional approach is also known as

synthesis perspective (Rubalcaba, et al., 2012). According to Janssen, et al. (2015) service innovation can be defined as "a new service experience of service solution that consists of a new (or considerably changed) service concept, new customer interaction, new value system, new revenue model, or new organizational or technological service delivery system" (p.97). This multidimensional concept consists of new service concept, new customer interaction, new value system/business partners, new revenue model, new organizational delivery system, and new technological delivery system.

Furthermore, Ordanini & Parasuraman (2011) mentioned about a perspective of service innovation, which is service-dominant (S-D) logic based "synthesis" perspective. They stated that "The SDL is appropriate for studying service innovation because it moves away from perspectives traditionally 'rooted in technological product inventions'" (Ordanini & Parasuraman, 2011, p. 4). S-D logic allows us to view service as a transcending mental model for all types and forms of innovation, tangible or intangible (Lusch & Nambisan, 2015). The distinction between service innovation and product (goods) innovation is no longer appropriate. S-D logic perspective is appropriate for studying service innovations as it nests both services and tangible goods into an integrated overarching service view and is in line with the synthesis approach supported for examining service innovation (Drejer, 2004; Vargo & Lusch, 2006). It offers conceptualization of service as a co-produced process and co-created values that involves the application of competences (e.g., knowledge and skills) which supports new perspective for service innovation (Ordanini & Parasuraman, 2011).

However, previous empirical studies on service innovation have narrow conceptual frameworks which may not able to capture the complexities of service innovation (Baker & Sinkula, 2007). Research on broader frameworks that includes simultaneous examination of multiple antecedents and consequences of service innovation are needed (Szymanski, Kroff, & Troy 2007). Furthermore, empirical findings with regard to the antecedents of service innovation are limited and inconclusive (Ordanini & Parasuraman, 2011). Therefore, this study attempts to extend existing service innovation literature by developing, proposing, and empirically testing an integrated framework of antecedents and consequence of service innovation based on S-D logic (Vargo & Lusch, 2004; 2008). An integrated framework is needed to capture the complexities of service innovation (Baker & Sinkula, 2007). Specifically, the objectives of this study are first, to examine the effects of service-dominant orientation, dynamic service innovation capabilities, and knowledge resources on service innovation; second, to examine the effect of service innovation on organizational performance.

LITERATURE REVIEW

The effects of service-dominant orientation on service innovation

According to S-D logic, service is a customer oriented and relational and customer is always a co-creator of value (Vargo & Lusch, 2004; 2008). It implies that customers play an important role value co-creation (Ordanini & Parasuraman, 2011). S-D orientation is a portfolio of co-creation capabilities including individuated, relational, ethical, empowered, developmental, and concerted interaction capability which enables company to co-create value with its customers (Karpen, Bove, & Lukas, 2012). S-D orientation companies emphasize value co-creation processes through interactions and resources integrations (Karpen, et al., 2015). This study proposes that S-D orientation enhances service innovation practices. During interactions, new service values or ideas may emerge (Arnould & Thompson, 2005). S-D orientation companies

conduct value co-creation activities through understanding, responding to, and empowering individual customers as well as underline the quality of the interaction process and intent to facilitate enjoyable human relationships, morally acceptable behavior, and pleasurable touch points (Karpen, et al., 2015). Frequent interactions may help companies to understand more about customers' needs and preference and generate new knowledge (Ordanini & Parasuraman, 2011). It allows them to get feedback from customers and come up with innovative service values (Alam, 2002; Prahalad & Ramaswamy, 2004). Therefore, this study hypothesizes:
Hypothesis 1. *S-D orientation has a positive effect on service innovation.*

The effects of dynamic service innovation capabilities on service innovation
Dynamic capabilities play an important role on innovation (Crossan & Apaydin, 2010). It facilitates companies to explore and to answer unmet needs of current and potential customers (Gronroos, 2006). Janssen, Castaldi, & Alexiev (2015) introduced dynamic service innovation capabilities which consist of five capabilities, such as sensing customers' needs capability, sensing technological options capability, conceptualizing capability, coproducing and orchestrating capability, and scaling and stretching capability. Having dynamic service innovation capabilities allows companies to gain competitive advantage by adapting, innovating, and reconfiguring resources that they possessed (den Hertog, et al., 2010). This study proposes that dynamic service innovation capabilities enhance service innovation practices. According to S-D logic, successful service innovation depends on the continuous renewal, creation, integration, and transformation of resources (Ballantyne & Varey, 2006). A company needs to have capabilities of sensing customer needs, sensing technological options, conceptualizing, coproducing and orchestrating, and scaling and stretching in order to effectively and efficiently deliver innovative service values (Janssen, Castaldi, & Alexiev, 2015). Therefore, this study hypothesizes:
Hypothesis 2. *Dynamic service innovation capabilities have positive effects on service innovation.*

The effects of knowledge resources on service innovation
According to S-D logic, knowledge is an operant resource that helps companies to gain competitive advantage (Vargo & Lusch, 2004). Knowledge is a complex resource that is important for innovation and success (Paswan, D'Souza, & Rajamma, 2014; Serenko & Bontis, 2004). There are three important knowledge resources such as knowledge of customers, knowledge of the industry, and knowledge of firm practices (Melancon, et al., 2010). These three knowledge resources are crucial for developing innovative service values. Knowledge is a source for new service value creation (Lusch, Vargo, & O'brien, 2007) and new service values may emerge during knowledge sharing or exchange with customers (Kwok & Gao, 2005). This study proposes that knowledge resources enhance service innovation. Melancon, et al. (2010) found that knowledge customers and knowledge of the industry enhance the company's ability to meet customer needs. Furthermore, Paswan, D'Souza, & Rajamma (2014) proposed that knowledge is a key for value co-creation practices. Based on S-D logic foundational premises (FP6), customer is always a co-creator of value (Vargo & Lusch, 2004; 2008). Having greater knowledge of current and potential customers provides strategic resource for company to create and propose new service values (Kohli & Jaworski, 1990). Well understanding of the industry condition and company' practices helps companies to deliver better new service values to customers because companies may deliver unique service that their competitors do not have as well as can

implement correct procedures and operational practices (Melancon, et al., 2010). Thus, this study hypothesizes:
Hypothesis 3. *Knowledge resources have positive effects on service innovation.*

The effects of service innovation on organizational performances
According to Jannsen, et al. (2015), multidimensional service innovation consists of new service concept, new customer interaction, new value system/business partners, new revenue model, new organizational delivery system, and new technological delivery system. The link between innovation and performance is widely studied in the innovation literature, especially innovation on tangible products (Ordanini & Parasuraman, 2011). Previous studies support the positive link between service innovation and organizational performance (e.g., Avlonitis, Papastathopoulou, & Gounaris, 2001; Chen, Tsou, & Huang, 2009; Ordanini & Parasuraman, 2011).This study proposes that service innovation enhances organizational performance. Avlonitis, Papastathopoulou, and Gounaris (2001) found that new delivery processes positively influence financial performance such as profitability and sales. Chen, Tsou, & Huang (2009) revealed that service delivery innovation leads to better financial and non-financial performance. Furthermore, Ordanini & Parasuraman (2011) found that both innovation radicalness and innovation volume have positive effects on performance. Having new service concept, new customer interaction, new value system/business partners, new revenue model, new organizational delivery system, and new technological delivery system leads to greater financial and non-financial performance. Thus, this study hypothesizes:
Hypothesis 4. *Service innovation has a positive effect on organizational performance.*

METHODOLOGY

Research model

Based on the hypotheses developments above, the conceptual framework of this study is shown in Figure 1.

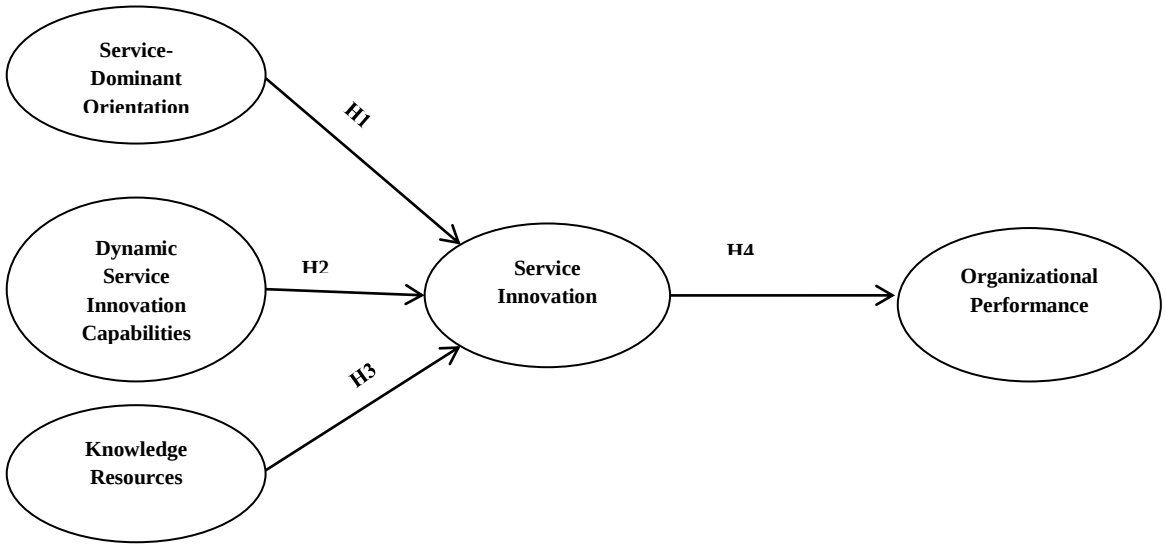

Figure 1 Research Model

Construct Measurement

As the questionnaire items were mainly adopted from English language journal papers they first needed to be translated into Bahasa and then translated back to English by linguistic expert. Two academics were then consulted to check the face validity of the scales (Konuk, Rahman, & Salo, 2015). Scale items were adopted from previous studies' validated scales. The measurement scale items for service-dominant orientation were adopted from Karpen, et al. (2015) (24 items); the scale items for dynamic service innovation capabilities were adopted from Janssen, Castaldi, & Alexiev (2015) (fourteen items); the scale items for knowledge resources were adopted from Melancon, et al. (2010) (nine items); the scale items for service innovation were adopted from Janssen, et al. (2015) (fourteen items); and the scale items for organizational performance were adopted from Chen, Tsou, & Huang (2009) (ten items). All scale items were measured by seven-point Likert-type scales, ranging from "strongly disagree=1" to "strongly agree=7."

RESULTS

Demographic characteristics

Questionnaires were distributed to 300 retail companies in Indonesia. From 300 questionnaires, 116 were returned, resulting for 38.65% response rate. However, due to some missing data, only 112 data were used for further analyses. The demographic results for company information show that among 112 data, 29% were convenient store, 23% were fashion store, 12% were drugstore, and followed by banking, automotive retailer, home appliance store, supermarket, department store, bookstore, and apparel and footwear store. The demographic characteristics of respondents' information show that approximately 58% of the 112 respondents were male. For age, 44% were between the ages of 26 and 35, 33% were less than 25 years old, 15% were between the ages of 36 and 45, and 8% were between the ages of 46 and 55. With regard to their educational background, 64% of the respondents had obtained at least a bachelor's degree. In terms of working experience distribution, 44% of the respondents have worked for less than or equal to 5 years, 38% have worked from 6 to 10 years, 14% have worked from 11 to 15 years, 4% have worked from 16 to 20 years, and 1% have worked for more than 20 years. More than 50% of the respondents were operational managers, followed by 13% were marketing managers, 12% were CEOs, 6% were general managers, and 4% of the owners.

Evaluation of measurement model

Evaluation of measurement model

The collected data were analyzed by Partial Least Squares (PLS) using SmartPLS software. PLS is appropriate for causal-predictive analysis when the research model is more complicated (Chin, 1998). To assess the reliability of the constructs, Cronbach's α and composite reliability (CR) were calculated (Fornell & Lacrkel, 1981). All constructs have Cronbach's α value higher than its critical value of 0.7 (Hair, William, Babin, & Anderson, 2010) except for Scaling & Stretching (SS) construct which has value 0.695. However, this value is still acceptable. All constructs have CR value higher than its critical value of 0.8 (Hair, William, Babin, & Anderson, 2010).

Furthermore, both convergent and discriminant validity were examined to assess the validity of the measurement scales. Convergent validity was assessed by factor loading and average variance extracted (AVE). All factor loadings were higher than the critical value of 0.6 except SCN3. All AVE values were higher than the critical value of 0.5. In addition, discriminant

validity was assessed by the construct inter-correlations, AVE square root values, and a comparison between these values. All construct correlations for first-order construct were lower than 0.7 (Kline, 1998). The AVE square root values of the first-order constructs are higher than the first-order constructs' inter-correlations in the research model. As such, the measurement model of first-order constructs is considered satisfactory for use in hypotheses testing.

Common method bias

In order to assess the issues of common method bias, firstly, a Harmon one-factor test was adopted and loaded all variables into a principal component factor analysis (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). The explained variance of one-factor test is 32.57% in the un-rotated solution which is less than 50%. Second, discriminated validity can also be used to identify common method bias. As what explained above, discriminant validity also showed satisfactory results. All the AVE square root values are higher than the constructs' inter-correlations in the research model. These results suggested that the issues of common method bias are still under the accepted level.

Evaluation of structural model

The results show that service-dominant orientation (β= 0.181; $p < 0.001$), dynamic service innovation capabilities (β= 0.533; $p < 0.001$), and knowledge resources (β= 0.196; $p < 0.001$), have a positive influence on service innovation. Service innovation has a positive influence on organizational performance (β= 0.582; $p < 0.001$). Furthermore, for the control variables, company age (β= -0.100; $p < 0.001$) and company capital (β= 0.089; $p < 0.001$) show significant effects on organizational performance. However, these influences not as strong as the effect of service innovation on organizational performance. Company size (β= 0.001; $p > 0.05$) shows non-statistically significant effect on organizational performance. The R^2 values of service innovation and organizational performance are 0.670 and 0.371, respectively, which are higher than its critical value of 0.1 (Falk & Miller 1992), and the goodness-of-fit of the model is 0.510, which is considered as a large effect size for R^2 (Vinzi, et al. 2010). According to Vinzi et al. (2010), the goodness of fit index (GoF) greater than 0.36 is considered to be large; 0.25 is described as medium, while 0.10 is described as small. Therefore, H1, H2, H3, and H4 are supported.

DISCUSSIONS

Conclusion

This study aims to explore an integrative framework of service innovation which consists of antecedents and consequence. The antecedents are service-dominant orientation, dynamic service innovation capabilities, and knowledge resources while the consequence is organizational performance. Several conclusions can be drawn from this study. First, service-dominant orientation positively influences service innovation. As what this study proposed, a company which has service-dominant orientation tends to have better service innovation. Service-dominant orientation companies emphasize value co-creation processes through interactions and resource integrations with its value network partners, especially customers (Karpen, et al., 2015). It is suggested that during interaction with customers, new service values or idea may emerge (Arnould & Thompson, 2005). Frequent interaction with customers may help companies to understand customers' needs and preference as well as generate new knowledge (Ordanini &

Parasuraman, 2011). Therefore, the higher the service-dominant orientation that a company has, the better its service innovation will be.

Second, dynamic service innovation capabilities positively influence service innovation. This result supports the hypothesis which is better dynamic service innovation capabilities lead to better service innovation. Dynamic service innovation capabilities play an important role on service innovation because it facilitates a company to explore and to answer unmet needs of current and potential customers (Crossan & Apaydin, 2010; Gronroos, 2006). Successful service innovation depends on the capabilities of a company to effectively and efficiently sense customer needs, sense technological options, conceptualize, coproduce and orchestrate, and scale and stretch service values (Ballantyne & Varey, 2006; Janssen, Castaldi, & Alexiev, 2015). Therefore, the better the dynamic service innovation capabilities that a company has, the better its service innovation will be.

Third, knowledge resources have a positive influence on service innovation. This results support the proposed hypothesis. Better knowledge resources that a company has may enhance its service innovativeness because knowledge is a source for new service value creation (Lusch, Vargo, & O'brien, 2007). According to S-D logic, knowledge is an operant resource that helps companies to gain competitive advantage (Vargo & Lusch, 2004). Knowledge is a complex resource that is important for innovation and success (Paswan, D'Souza, & Rajamma, 2014; Serenko & Bontis, 2004). Therefore, having greater knowledge resources is important for a company especially in creating new service values.

Lastly, service innovation has a positive influence on organizational performance. This result is in line with previous studies (e.g., Avlonitis, Papastathopoulou, & Gounaris, 2001; Chen, Tsou, & Huang, 2009; Ordanini & Parasuraman, 2011). Better service innovation tends to enhance organizational performance. Avlonitis, Papastathopoulou, and Gounaris (2001) found that new delivery processes positively influence financial performance such as profitability and sales. Chen, Tsou, & Huang (2009) revealed that service delivery innovation leads to better financial and non-financial performance. Furthermore, Ordanini & Parasuraman (2011) found that both innovation radicalness and innovation volume have positive effects on performance.

Research implications

Academic implications

This study contributes to the current literature from several aspects. First, this study contributes to service innovation literature by examining an integrative model of service innovation based on service-dominant logic perspective (Vargo & Lusch, 2004) which is still rare in the literature. This study proposed and proved that there are three important antecedents of service innovation which are service-dominant orientation, dynamic service innovation capabilities, and knowledge resources. Second, the results of this study also contribute to the S-D logic literature by proving that S-D logic is appropriate for studying service innovation (Ordanini & Parasuraman, 2011). Since S-D logic offers conceptualization of service as a co-produced process and co-created values that involves the application of competences (e.g., knowledge and skills) which supports new perspective for service innovation (Ordanini & Parasuraman, 2011), this study applied S-D logic as a theoretical foundation. This study proved that the application of competences such as service-dominant orientation, dynamic service innovation capabilities, and knowledge resources leads to better service innovation.

Managerial implications

Furthermore, this study will contribute to practitioners from following aspects. First, managers should try to build up a service-dominant orientation which is a company's capabilities to interact with value network partners, especially with customers. By having interaction capabilities, a company may create innovative service values that can be offered to customers because through interacting with customers, a company may understand better what customer needs and wants. Second, managers should also try to build up dynamic service innovation capabilities. These capabilities may help a company to generate service innovation. The two most important capabilities that a company needs to have are sensing customer needs and conceptualizing. After understands what customer needs and wants, it is also important for a company to have the ability to conceptualize new service ideas or values. Third, it is better for a company to have knowledge resources such as knowledge of customers, knowledge of industry, and knowledge of company's practices. By having these knowledge resources, it is likely that a company can easily generate innovative service offerings. Lastly, the results of this study show that multidimensional of service innovation tend to lead to better organizational financial and non-financial performance. Using new business partners and the latest technology for service offerings also enhance non-financial performance. Therefore, a company may emphasize more on these types of service innovation in order to generate greater profits and market share as well as to increase customers' loyalty, attract new customers, and build up good image and reputation.

Limitations and Future Research Directions

Despite the contributions that this study will give, research limitations cannot be avoided. Research limitations that are expected for this study are as follows: first, empirical study was conducted by cross-sectional data in one period of time. The dynamic and evolution of service innovation practices may not be captured. Future study may collect longitudinal data to see the changing of service innovation practices over time. Second, data that were collected only from retail companies in Indonesia. Future research may collect the data from several industries and different countries in order to test the generalizability of research model. Third, this study did not compare different types of retails to test the hypotheses. Future study may compare the difference among different retail companies, such as banking and automotive retail. Fourth, organizational performance was measured by subjective data which could not show the actual performance of companies. Future study may collect objective data to measure organizational performance.

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科技部補助專題研究計畫出席國際學術會議心得報告

日期：106 年 5 月 21 日

計畫編號	MOST 105-2410-H-343-004		
計畫名稱	以服務主導邏輯為觀點之服務創新整合模式		
出國人員姓名	吳萬益	服務機構及職稱	國際企業學士學位學程
會議時間	2017/4/20-2017/4/22	會議地點	越南海防市
會議名稱	(中文) 越南國際化經濟發展進程國際會議 (英文) International Conference Program Vietnam's Economic Development in the Process of International Integration		
發表論文題目	(中文) 利用結構-行為-結果模型探討國際企業之海外子公司經營策略 (英文) An Empirical Study of Subsidiary Strategies Using Structure-Conduct-Outcome Framework		

一、參加會議經過

近年來越南其經濟快速的成長，促進了其在亞洲地區地位越來越重要，對於越南該國經濟的發展，世界各國也都相當關注，且台灣這一兩年來更是提出許多南向政策，將會有更多國人前往越南發展。此次會議是由越南海防大學、越南順化經濟大學、越南外貿大學、南華大學以及韓國貿易研究協會等五個單位所共同舉辦之國際研討會議。

大會以「International Conference Program Vietnam's Economic Development in the Process of International Integration」為主題，希望能夠更深入探討越南經濟發展之國際化趨勢議題。會議從 2017 年 4 月 20 開始，當天主辦單位舉辦晚宴來歡迎各界嘉賓，接著再 4 月 21 日由海防大學校長 Prof. Pham Van Cuong 發表開幕致詞，及各共同主辦學校代表分別致詞之後，由於本校也是大會的主辦單位之一，本校也是大會的主辦單位之一，本人代表學校上台致詞，首先感謝越南商業大學及越南海防大學的支持，讓南華大學能夠在近兩年來在越南經濟發展與國際貿易的議題中參與多項會議，我們看到最近十幾年來越南經濟發展快速，全民團結努力進行國際貿易及吸引外資前來投資，使越南之國民所得不斷提高，各項建設突飛猛進，今天我們討論越南在國際化在經費發展的進程中所扮演之角色，尤其今天有這麼多位國外的學者參加來參與討論，相信透過大家的腦力激盪，必能為越南經濟發展國際貿易發展階段有更為有效的途徑。

接著在分組討論中本人「An Empirical Study of Subsidiary Strategies Using Structure-Conduct-Outcome Framework」為題發表論文，本論文主要探討海外子公司如何利用網絡架構來開展其策略，首先探討公司在集權化、正式化及母子公司依賴程度對於子公司策略在標準化及顧客化兩方面之影響，接著在探討公司標準化及顧客化如何與正式化、集權化及依賴程度互相連結而達到較高之經營績效。研究結果顯示集權化、正式化及依賴之程度越高時，則其使用標準化之子公司策略將達到更高的績效，反之，若集權化、正式化及依賴之程度越低，則採用顧客化之子公司策略將更容易達到較好的績效。本論文雖然不是以使用越南公司經理人的資料，但對於國際企業子公司之經營模式英有些啟發作用。

二、與會心得

此次前往越南海防大學、越南順化經濟大學、越南外貿大學、南華大學以及韓國貿易研究協會所共同舉辦之國際學術研討會，其中來自世界各國學者與會的參與，透過每位學者採用不同角度去分析越南經濟情況，深覺獲益良多。越南人口已超 9500 萬，最近幾年其經濟發展非常順利，此次有幸能夠與越南各界專家學者進行短暫交流，對於未來國際合作之開展有很深之幫助。南華大學管理學院的研究團隊近年來在本人的領導下，積極與越南洽談合作辦學及合作研究事宜，希望未來有進一步開花的結果。

三、發表論文全文或摘要

ABSTRACT

One of the most important issues of multinational operations is the decision making of the global marketing strategy. Managers of multinational corporations (MNCs) must coordinate the implementation of their firms' strategies among various subsidiaries in different parts of the world. This study adopted a Structure-Conduct-Outcome (S-C-O) framework to measure the outcome of strategy by structure variables (centralization, formalization, and dependencies) and conduct variables (integration and responsiveness) and to identify the interrelationships among network structure, conduct of subsidiary and outcome of subsidiary. The results of this study indicated that the comprehensive model is valuable and presented that high level of centralization, formalization and dependencies will result in better integration and responsiveness, which further enhance the performance of the subsidiary.

Keywords: Multinational Corporations, Network Structure, Integration, Responsiveness, Subsidiary Strategy, Performance

(全文如附件一)

四、建議

此次與會人員來自越南、台灣、中國、韓國、菲律賓、日本、法國、德國、澳大利亞及美國的企業和學者的代表參與出席，然其論文篇數約有 100 餘篇，但大多數論文著作採用越南語言書寫，因此在研讀上較為困難，口頭發表方面，其更採用兩種語言進行發表，因此對於越南學者使用越南語進行發表，在認知了解上與原意有所差異，因此期望再發表或是文章撰寫上能夠擁有更多以英語進行較為恰當。

五、攜回資料名稱及內容

此次與會本人帶回大會手冊及 International Conference Program Vietnam’s Economic Development in the Process of International Integration 論文集紙本及 CD。

An Empirical Study of Subsidiary Strategies Using Structure-Conduct-Outcome Framework

ABSTRACT

One of the most important issues of multinational operations is the decision making of the global marketing strategy. Managers of multinational corporations (MNCs) must coordinate the implementation of their firms' strategies among various subsidiaries in different parts of the world. This study adopted a Structure-Conduct-Outcome (S-C-O) framework to measure the outcome of strategy by structure variables (centralization, formalization, and dependencies) and conduct variables (integration and responsiveness) and to identify the interrelationships among network structure, conduct of subsidiary and outcome of subsidiary. The results of this study indicated that the comprehensive model is valuable and presented that high level of centralization, formalization and dependencies will result in better integration and responsiveness, which further enhance the performance of the subsidiary.

Keywords: Multinational Corporations, Network Structure, Integration, Responsiveness, Subsidiary Strategy, Performance

1. Introduction

One of the most important issues of an MNC’s international business operations is its decision on its global strategy. Global strategy refers to the corporate competitive principles that are adopted when multinational corporations compete with global competitors and local firms in worldwide markets. It is comprised of building and operating of the global value chain activities, allocating resources, and establishing subsidiaries all over the world (Yip, 1995; Mudambi & Puck, 2016). Managers of MNC must coordinate the implementation of their firms' strategies among various subsidiaries in different parts of the world with different time zones, cultural contexts and economic conditions to increase their performance. (Bartlett & Ghoshal, 1989; Ghoshal & Nohria 1993; Yip, 1995). Thus, it is important for us to understand the network structure between headquarter (HQ) and subsidiaries in different countries to show how MNCs managers coordinate between headquarter and subsidiaries to implement appropriate strategy.

In the past three decades, a lot of scholars suggested different framework to explain what MNC strategy

should be. For example, Prahalad and Doz (1987) used the integration-responsiveness framework to describe MNC strategy. After that, because of the variety between subsidiaries, scholars shift their focus on the subsidiary side. For example, Jarillo and Martinez (1990) use the same framework but identify different types of strategies and roles of subsidiaries. Although there are lots of articles discussing about what the MNC strategy is, but few of them use an integrated framework to show the way for HQ manager to implement or affect these strategy from HQ to the subsidiaries. Therefore, it is necessary to develop a framework to explain how HQ should implement different strategy for subsidiaries.

Ghoshal and Bartlett (1991) and Korzynski (2015) explained that the network relationships can be divided into internal and external networks. For subsidiaries in MNC, external network including the relationships with local competitors, customers, government, academia and so on, it is called “embedded relationships” (Uzzi, 1997 and Gammelgaard et al 2016). Internal network is including the relationships with headquarter and other subsidiaries (Ghoshal and Bartlett, 1991; Giroud & Scott-Kennel, 2009). Internal network aspect is widely used for several fields, such as supply chain management (e.g., McEvily and Zaheer, 1999) but few scholars apply it for international marketing. Besides, it lacks of integrated dimensions to present how internal network affect subsidiary strategy. Thus, in this study, we use the levels of responsiveness of the subsidiary to represent internal network of subsidiary.

Ungerer and Cayzer (2016) argued that the purpose of developing and implementing competitive strategy for subsidiary is to improve performance in some measurable way. Performance is widely used to measure the outcome of strategy in the international marketing field (e.g., Taggart, 1999; Tsai, Yu and Lee, 2006). In this study, we divided the construct of performance into two variables, financial performance and strategic performance. Strategic performance refers to a firm’s global market share and competitive position relative to major rivals, while financial performance involves the firm’s efficiency in carrying out global marketing, including its cost position, sales growth, and profitability in the global market (Zou & Cavusgil, 2002).

In this article, we try to use S-C-O (Structure – Conduct - Outcome), an integrate framework provided by Molm (1990) and modified by Geyskens et al. (1999), to link up the relationship between internal network structure, subsidiary conduct and performance of subsidiary. Molm (1990) proposed that structural power in networks affects exchange outcomes indirectly, through strategic action. Strategic action affects outcomes directly, independent of structure. Following Molm (1990), Geyskens et al. (1999) make a deeper explain

about this framework. they argued that channel structure refers to the patterned or regularized aspects of relationships between channel participants; conduct refers to strategies and patterns of behavior that emerge in a relationship; and outcomes refer to relational, qualitative outcomes that result from the relationship. We used questionnaire survey to prove S-C-O framework. Given that there remains a lot of research questions unanswered in the relationships between internal network structure, subsidiary conduct and subsidiary performance, this study firstly integrates relevant literature and develops a comprehensive research model. Secondarily, this study also empirically tests the research model through conducting a survey research.

2. Literature review and hypothesis development

2.1 The S-C-O framework

Ozsomer and Prussia (2000) and Lin (2014) claimed that the growth of overseas markets and global competition pressure MNCs to develop and implement a global strategy through a structure that is high formalization, centralization and dependence. Contingency theory (Ginsberg & Venkatraman, 1985; Lin, 2014) argued that “there is no best way”, and it is crucial for MNCs managers to critically evaluate the local environment. Additionally, we also apply an integrated dimension which is proposed by Geyskens, Steenkamp, and Kumar (1999) who used meta-analysis classified into three main dimensions of network structure: centralization, formalization and dependence. Centralization is defined as the degree to which subsidiary decision-making authority is concentrated by the headquarter. Formalization is the extent to which subsidiary decision making is regulated by explicit rules and procedures. Dependence is the extent to which sources from headquarter and other subsidiaries and the value received by the subsidiary through its relationship with the headquarter and other subsidiaries.

Due to the complexity of decision making which is resulted from the expansion of organization and rapid changes of market, MNCs managers are required to understand the global competition and translate that perspective into practical strategy. Thus, S-C-O framework is useful in demonstrating the importance of how companies generate and conduct their strategy which will affect the outcome or organization’s performance as the ultimate result (Dörrenbächer and Geppert, 2016). Thus, this study clearly demonstrates the relationship among MNCs strategies, structure, implementation process and expected performance. More importantly, this paper presents the insight that top managers in large multinational corporations need to simultaneously cope

with global market evolvement and the diversity of local market which result in the increasing complexity of decision making. With a view to aligning subsidiary strategies with the global strategies to reach global goals, organization that attempts to reach globally are highly advised to come up with a supportive and sustainable strategy, structure and process to maintain their survival on the global market (Jelavić and Aleksić, 2017). Extent research also have recognized that subsidiaries need to develop consistent and supportive strategy, structure and processes to achieve positive performance (Aagaard, 2016; Dikova et al., 2017). Significantly, previous researchers stated that the mutual reinforcement between the strategy and how companies execute would create the significant fit and strengthen the operation effectiveness which ultimately generate superior outcome (Hsieh and Chen, 2011). In that sense, the aim of this study is to determine how MNCs can deliver their understanding of utilize their internal resources, organizational structure and appropriate strategy to achieve overall fit and higher level of performance.

2.2 Network Structure

The conception of "network" comes from social science and inter- organizational theory (Benson, 1975; Yang et al. 2016). There are three levels in network structure relationship including people to people, people to organization, and organization to organization. This research is focused on the third relationship – "organization to organization". The network structure, as we mentioned above, explained the three dimensions which are centralization, formalization and dependence. One of the most ultimately crucial conditions supporting the decision-making process is the transparency from upstream to downstream management, or from headquarter to subsidiaries. It is widely recognized that headquarter have significant impact on the operation efficiency of subsidiary, no matter what it is direct or indirect influence (Chang and Smale, 2014). Taking the resource allocation factor as a typical example, in the context of multinational enterprises, managers from headquarter office need to understand the current competencies, challenges that subsidiary is facing to generate helpful human resource orientation policy or to provide appropriate development strategy. However, in order to sustain the whole operation efficiency, the confusion among a firms' decision of centralization, decentralization or formalization is still left as a challenge for global companies (Brahm and Tarziján, 2015).

It is inevitable to mention integration- responsiveness paradigm introduced by C.K. Prahalad and Yves L. Doz in 1971 as powerful tool in supporting MNCs managers define the implementation or conducting process

in S-C-O framework. The purpose of integration-responsiveness paradigm is to show the challenge that top manager in MNCs face among the companies' scale expansion and increasing global competition (Dörrenbächer and Geppert, 2016). Importantly, this paradigm plays as a tool in analyzing the diversity of national market as well as their own global business and deliver that understanding into subsidiaries to decide the most appropriate management that adopts to local presence. Thus, in this study, the paradigm is utilized to justify the relationship between the network structure and how companies implement the strategy.

Integration concept depicts the growing trend happening in MNCs that allows sharing centralized resources which leads to the exploitation of economies of scale and scope for the MNCs as a whole (Ciabuschi et al., 2011; Meyer and Estrin, 2014). Hence, production cost can be reduced and the capability would be strengthened thanks to the integration of core competencies from the whole organization and local practice. Several scholars use the integration - responsiveness framework to segment subsidiary into several roles. Jarillo and Martinez (1990) segment them into three groups; they are receptive subsidiary, active subsidiary and autonomous subsidiary. Taggart (1997) explains that there is the fourth group in the integration – responsiveness framework and it is quiescent subsidiary. However, Tsai et al. (2006) argued that there were only three subsidiary roles in Taiwan. Active subsidiaries are highly integrated and responsive. Autonomous Subsidiaries have high responsiveness but low integration. Respective Subsidiaries have low responsiveness but high integration. Moreover, companies that aim to reach the integrated technical knowledge/resources also pursue the integration structure philosophy (Dörrenbächer and Geppert, 2016). As a matter of fact, businesses whose management system is highly centralized would depend on the control of top management that encourage the sharing of resources such as knowledge and skills through subsidiaries (Silver, 2015; Dörrenbächer and Geppert, 2016). Besides, scholars broadly concur that integration is primarily driven by parent-level factors and is largely independent of local considerations, in another word, there is a positive relationship between centralization and integration (Meyer and Estrin, 2014; Alonso et al., 2015). We are convinced by this argument that since the operation is globally integrated, company scale would be expanded, the decision making would be more concentrated into the top management. As a consequence, it is hypothesized that:

H1: The levels of centralization will have positive influence on the levels of integration, both in terms of production and technology.

However, the dilemma has been raised since most of the highly-centralized structure firms are not able to adapt to the local demands or local responsiveness. Whilst that structure mode is most effective in integrating geographically dispersed units to assist in achieving the benefits of global scale, scope and learning (Egelhoff, 1988; Udalov, 2014), responsiveness pursuits the philosophy of 'all business is local' (Quelch and Jocz, 2012) and emphasizes the high degree of local adaptation. We are convinced by this thoughts in the sense that companies operating in various nations need to pay serious attention to the local needs, local market and eve competitors in the host country. Due to the characteristics of different places, the companies are suggested by extant researchers to have appropriate response to the local market in customizing their products/services or come up with relevant strategy to gain competitive advantages over the rivals. For this reason, hypothesis 2 is developed as follow:

H2: The levels of centralization will have negative influence on the levels of responsiveness.

While working a firm characterized by centralization, employees need to align their own with the business culture that decision-making process is concentrated at the top level of management, formalization value the decision-making and the firm's actions are made within the business unit (Krush et al., 2016). In this paper, we would emphasize the crucial role of formalization in the organizational operation of MNCs. Firstly, high-level-formalization companies aim to build up the system of control on top managers and the organizations' procedure, rules, regulations are all highly standardized enacted and complied (De Clercq et.al, 2013). Firms with highly formalized structure expect that employee's performance would be based on standardized policies and requirements or job guidelines and evaluations to ensure the consistency of work outcomes quality. By the same token, companies operating with high level of integration would encourage the sharing centralized resources as well as the coordination between subsidiaries (Marabelli and Newell, 2014; Rao, 2016). The formalization corporation structure would generate the consistency and the integrated functions throughout the countries, from management perspective to implementation.

In this study, we assume that there is a negative relationship between centralization and responsiveness because centralization indicates the whole control of top management in making decisions in the business operation process. It is contradicted to the philosophy of decentralized business structure in which decision-making power is located in subsidiaries or lower level of management (Richter, 2014; Krush et.al., 2016). In the context of MNCs, decentralization strategy would be beneficial in understanding and satisfying the local

needs. Moreover, the local or regional managers could have more chances to have appropriate reaction to market needs, demands and force while they are supposed to follow the guidelines of headquarter offices (Mahmood, 2015). It is undeniable that decentralization strategy costs the business in information sharing, however, it strengthens an organization's ability to quickly respond to the alternatives of local market (Zammuto and O'Connor, 1992). Through decentralized structures organizations faster respond to changing technological, customer and market needs (Teece, 2007)

Based upon the above statements, hypotheses are developed as follows:

H3: The levels of formalization will have significantly positive influence the levels of integration.

H4: The levels of formalization will have significantly negative influence the levels of responsiveness.

Beside with centralization and formalization, various MNCs have been pursuing the structure of dependence. As a matter of fact, competition does not only exist within the large organizations only but also happens between the subsidiaries whose functional power is different (Mudambi et al., 2014). Subsidiaries compete with each other to obtain and enhance their roles in the corporation and as result to influence the shaping of strategy made by HQ. Subsidiary functional specialization is heavily dependent on the subsidiary's location and operational reality (Cantwell and Mudambi, 2011), thus extant studies have emphasized the dependence of subsidiaries on their HQ and network in MNCs that strengthens the knowledge and resource sharing between HQ and its sub-units (Mudambi, 2011; De Clercq et al., 2013). By the same token, this study demonstrates that business usually value the integration of subsidiaries into the MNCs network through the use of external and internal resources. Aforementioned studies believed that the subsidiaries size is seen as one of the main factors which could decide the dependence of them on their HQs (Peng and Beamish, 2014). The smaller size subsidiaries own which means the internal resource is limited, the higher tendency in depending upon the headquarters they have to obtain more internal resource. On the other hand, although larger subsidiaries possess more resources, they would be more dependent on the HQs in the context of building or expanding network (Kumar and Seth, 1998; Peng and Beamish, 2014). This demonstrates the role of expatriate resources in maintaining the sustainability of a multinational companies. Consequently, we hypothesize that:

H5: The levels of dependence will have significantly positive influence the levels of integration.

H6: The levels of dependence will have significantly negative influence the levels of responsiveness.

2.3 Interrelationships between Network Structure, Global Marketing Strategy and Business Performance

Birkinshaw, Morrison, and Hulland (1995) used 12 industries to identify the relationship between global marketing strategy and outcomes. They used the aspect from Porter (1986) that business performance is contingent on the fit between environments and conduct (strategy) and found that the global integration of business activities is positively associated with performance. By the same token, Tang (2010) highlighted that the success of multinational businesses is significantly dependent upon the functional integration among HQ and subsidiaries, especially when it comes to the influence of marketing implementation on company's performance.

From the market perspective, although it is sometimes neglected but there is an undeniable relationship between operation and marketing execution and thus, it is such a competitive advantage if the business has the ability to improve this kind of interaction (Karmarkar, 1996; Marques et al., 2014). By the same token, Tang (2010) highlighted that the success of multinational businesses is significantly dependent upon the functional integration among HQ and subsidiaries, especially when it comes to the influence of marketing implementation on company's performance. On this premise, extant studies have revealed that decisions regarding operations and marketing could have considerable influence on the performance of manufacturing (Dikova et al., 2017). The performance impact of a competitive dimension, like delivery, may affect the company's image in the market and, consequently, its future results (Brown and Ozgur, 1997). We are convinced by this argument since the integrated operation would generate the standardized market knowledge sharing among subsidiaries or business units, which potentially appropriate marketing strategy. Similarly, according to the knowledge-based resource theory, capabilities (marketing information management) and decision making are the significantly competitive advantages of the integration mechanism (Grant, 1996; Krush et al., 2016). Thus, the MNCs smartly adopt the significant standardization strategy would bring a positive effect on the subsidiary's marketing performance.

On the other hand, in an inspiring paper, Mollenkopf et al. (2011) emphasized the high importance role of operations which should be properly designed to meet the objectives of marketing area and create competitive market differences. By following that idea, this study indicates that beside pursuing the economics

of scale and scope, it would be beneficial for the company, especially for the multinational ones that make attempt to satisfying the local market demand and develop marketing strategy based on market-oriented view. By the same token, earlier studies also noted that in a global enterprise, the local subsidiaries play an active role as potential strategic partners that influence the success of the whole business (Franko, 1989; Cantwell and Mudambi, 2005; Zhaleh et al., 2014). For this reason, MNEs opting for a strategy of local adaptation typically achieve their strategic objectives by manufacturing their products or services in response to the various differences in terms of local consumers' preference, industry trends or access to specific distribution channels (Benito, 2005; Schleimer et al., 2014; Slangen and Dikova, 2014). Consequently, the appropriate response to the host country's needs through marketing activities would build up the positive public image for the firm and as a certain result, generate high level of performance. Based on this view, we develop the following hypotheses:

H7: The levels of integration will have significantly positive influence the global marketing strategies

H8: The levels of responsiveness will have significantly positive influence the global marketing strategies

3. Research design and methodology

3.1 The Conceptual Model

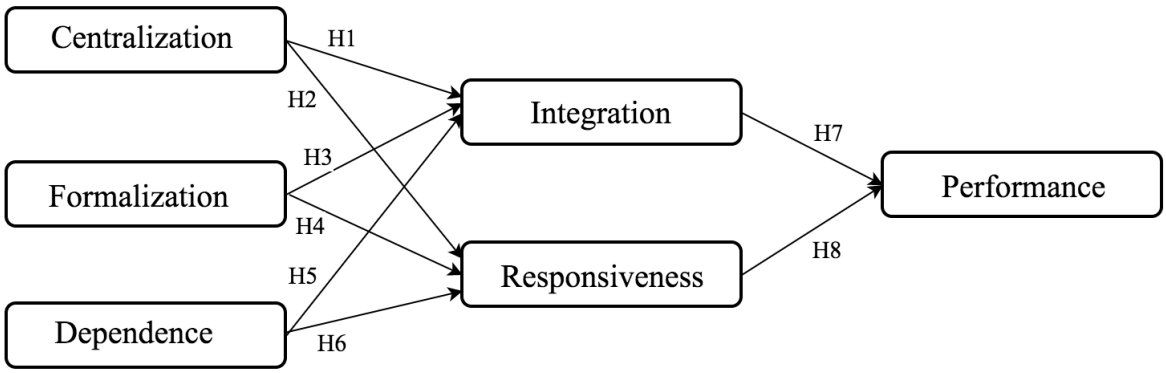

Figure 1 The Research Model of this Research

The purposes of this study are firstly to integrate relevant literature and develop a comprehensive research model of international marketing to identify the interrelationships among relevant research constructs. Secondarily, the study also empirically test the research model through conducting survey research. The research model of this study is shown in Figure 1.

3.2 Construct Measurement

For the purposes of this study, the following six major constructs are operationalized in this study: (1) centralization, (2) formalization, (3) dependence, (4) integration, (5) responsiveness, and (6) performance. When possible, items previously found valid and reliably by other researchers were employed in existing or slightly modified form.

3.3 Questionnaire Design

As discussed above, an 81-item survey questionnaire was developed to obtain the responses from managers who currently pursue their MBA degree (from the questionnaire of this study is consisted of six constructs: “centralization (16 items),” “formalization (15 items),” “dependence (16 items),” “integration (12 items),” “responsiveness (15 items),” and “performance (7 items).”

A preliminary version of this questionnaire was designed by the author and discussed with the Ph.D. students and thesis advisor. The questionnaire was pretested through a pilot study by the MBA students of National Cheng Kung University. Questionnaire items were revised based upon the results of the pilot study before being put into the final form. The detailed contents of the questionnaire, including the statement of the questionnaire items and the ranging or the scale were shown in Appendix.

4. Results and descriptive analysis

4.1 Data collection

We collect the data primary through the part time graduate students in National Cheng Kung University, Southern Taiwan University of Technology and Feng Chia University in Taiwan. The survey began in the middle of April of 2006 and ended in the early of June 2006, including one pilot test and one final survey. For the final survey, a total of 247 survey questionnaires are collected, 31 of them have either missing data or are unusable, 216 questionnaires are used in the hypotheses testing.

4.2 Characteristics of respondents

Table 1 shows the basic attributes of the respondents, including nine major items in the study: (1) gender, (2) age, (3) industry (4) department, (5) position, (6) enterprise history, (7) labor number of the enterprise, (8) capital of the enterprise, (9) global locations of the enterprise. It shows that more than 47% of the respondents

are male and more than 45% of the respondents are less than 30 years old. When it comes to the occupation, more than 40% of the respondents are working in the service industry while 17% of the respondents working in the marketing department. There are 37% and more companies operating less than 10 years and more than 31% of the enterprise labors are more than 1000 labors. It is reported that there are about 30% of the enterprise have a capital of investment of 10 million NT or less. Finally, more than 52% of the respondent expanding their business into another host country.

Table 1 Characteristics of the Respondents (n=216)

Question	Frequency	Percentage (%)
Gender		
Male	103	47.68
Female	113	52.32
Age		
< 30 years old	98	45.38
31-40 years old	53	24.54
41 to 50 years old	50	23.14
>51 years old	15	6.94
Industry		
Hi-tech Manufacture	35	16.21
General Manufacture	45	20.83
Service Industry	88	40.74
Others	48	22.22
Department		
Marketing	37	17.12
Manufacture	28	12.96
Innovation and Development	23	10.64
Engineering	25	11.57
Human Resource	5	2.32
Information	5	2.32
Administration	5	2.32
Financial and Accounting	10	4.64
Others	78	36.11
Position		
High-level Supervisor	25	11.58
Middile-level Supervisor	60	27.78
Low-level Supervisor	30	13.88
Staffs	83	38.42

Others	18	8.33
Enterprise History		
Less than 10 years	80	27.05
11 to 25 years	58	26.85
26 to 50 years	38	17.59
More than 51 years	40	18.51
Enterprise employees		
Less than 250 employees	93	43.06
251 to 500 employees	30	13.88
501 to 1000 employees	25	11.58
More than 1000 employees	68	31.48
Capital of the Corperation		
Less than 330 thousand US dollars	65	30.09
336 thousand to 1,6 million US dollars	10	4.62
1,6 to 3,3 million US dollars	20	9.25
3,3 to 33 million US dollars	45	20.83
33 to 66 million US dollars	18	8.33
66 to 165 million US dollars	8	3.74
More than 165 million US dollars	50	23.14
Enterprise Global Locations		
Located in 1 country	113	52.34
Located in 2 to 5 countries	63	19.16
Located in 6 to 10 countries	30	13.88
Located in more than 10 countries	10	4.62

4.3 Reliability and validity of the construct

Table 2 shows the internal consistency for the factors of centralization, formalization, dependence and integration of the network. It is shown that all variables within a factor tend to have a high coefficient of item-to-total correlation. In addition, the high coefficient of Cronbach's on each factor further confirms the reliability of the measurement items. Cronbach's for each factor exceed the generally accepted guideline of 0.60 (Hoir, et al., 2006). This suggests a high degree of internal consistency for each dimension and the factors of the network are highly dependent.

Table 2 Summary of construct measurement

Constructs and items	**Factor Loading**	**Cronbach's Alpha**
Centralization		

Level of HQ control	0.732-0.833	0.8886
Level of Financial centralization	0.767-0.904	0.8713
Level of HQ influence	0.924-0.928	0.8527
Formalization		
Formalization of structure and value activities of subsidiary	0.730-0.882	0.9066
Formalization of headquarter and subsidiary	0.652-0.867	0.8935
Dependence		
Dependence of other subsidiaries in the group	0.667-0.880	0.8603
Dependence of HQ finance	0.871-0.922	0.9309
Dependence of HQ staffs	0.794-0.916	0.8985
Dependence of HQ information	0.698-0.847	0.8149
Integration		
Integration of technical skills	0.708-0.816	0.7971
Integration of product	0.791-0.864	0.7931
Responsiveness		
Level of localization	0.841-0.909	0.9034
Responsiveness to customers	0.850-0.892	0.8391
Responsiveness to competitors	0.921-0.933	0.8514
Performance		
Strategic performance	0.913-0.946	0.9503
Financial performance	0.930-0.962	0.9382

4.4 Structure Equation Model (SEM)

The purpose of this study is to find out the relationships between centralization of the network, formalization of the network, dependence of the network, integration of the subsidiary, responsiveness of the subsidiary and performance of the subsidiary. For such an objective, structure equation model is employed to test the interrelationships of all the variables in the entire model. The proposed structural equation model is shown in Figure 2.

Before evaluating the structural or measurement models, the overall fit of the model to ensure that the model should be evaluated. In this study, five indices were used to test the fit of the model. The first one was the chi-square test, the essential for the nested model comparison. The chi-square value of 93.543 with 72 degrees of freedom is statistically significant at the 0.045 significance level.

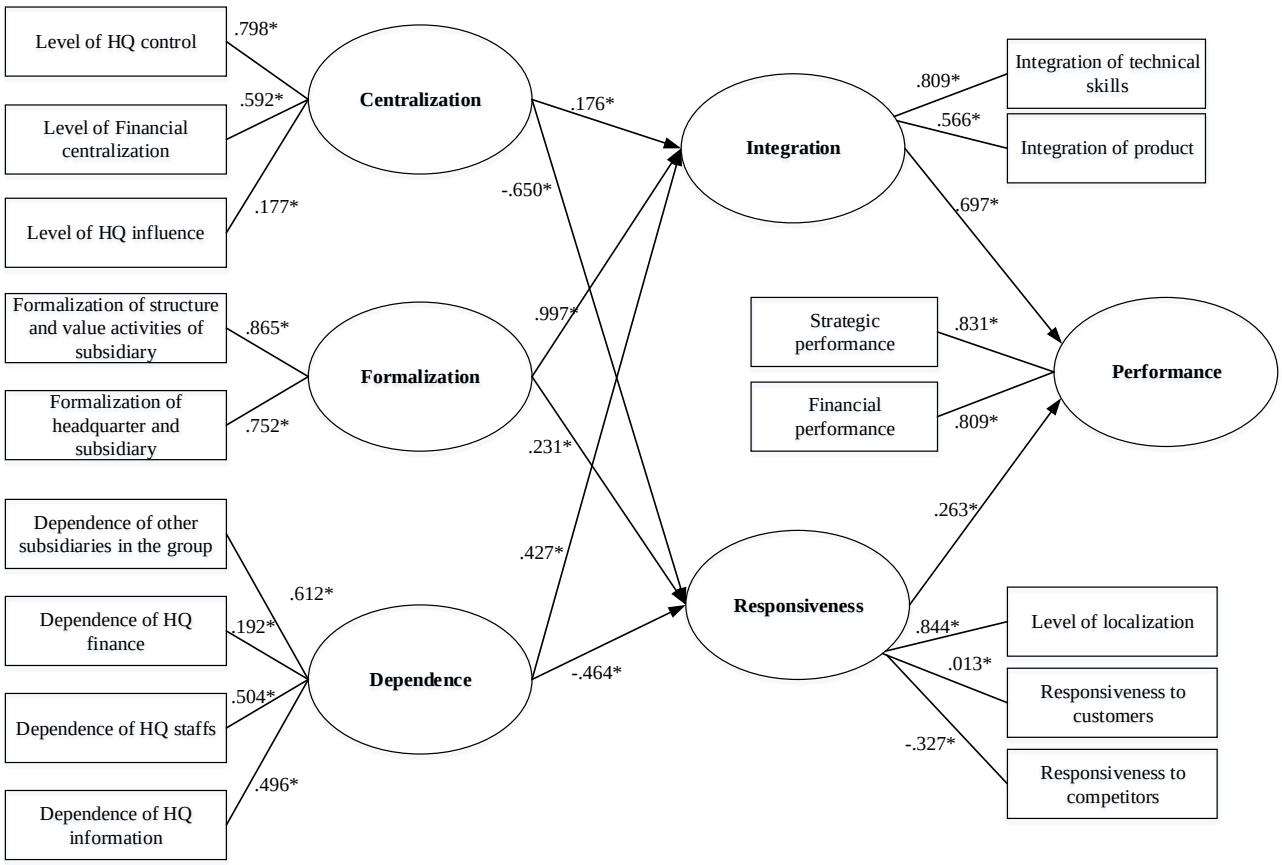

Figure 2 Structure Equation Model of this Study

The rest of the fit indices adopted in this study were the root mean square residual (RMR), the goodness of fit index (GFI), and the adjusted goodness of fit index (AGFI). The smaller the RMR is, the better the fit of the model. A value of 0.05 is suggested as a close fit (Arbuckle & Wothke, 1999). GFI and AGFI will not be influenced by the sample size explicitly and they were adopted to test how much better the model fits than no model at all. A very good fit of research model would require GFI and AGFI to be higher than 0.9 (Arbuckle & Wothke, 1999). The quality of the apriority alternative models should rely on the fit indices. However, it does not necessarily mean that one model is superior or the corrected causal model. Another important criterion for the quality of the model is the plausibility criterion (Joreskog & Sorbom, 1994). It means that the path coefficients in the model adhere to the general theoretical conception and to the hypotheses. Therefore, a model that fits the data well, but with many unsupported hypothesized paths, cannot be defined as correct. Hence, the fit indices and the theoretical predictions should be taken into consideration. As the overall goodness of fit is promising, it is encouraged to further identify the magnitudes and significance of the path structural coefficients of the model.

As the overall goodness of fit is promising, it is encouraged to further identify the magnitudes and significance of the path structural coefficients of the model. As shown in the Figure 2, it indicates that centralization of the network is significant influenced both integration and responsiveness of the subsidiary (Υ=0.176, Υ=-0.650). It supports our hypotheses 1 and 2. These results are consistent with those of previous

studies (Ozsomer & Prussia 2000; Kim et al. 2003; Dahlstrom & Nygaard, 1999; Kim et al., 2003). Furthermore, formalization of the network presents a significant relationship with integration of the subsidiary. (ϒ=0.997), which is consistent with the hypothesis 3. On the other hand, there is no significant relationship between formalization of the network and responsiveness of the subsidiaries (ϒ=0.231), which indicates that the hypothesis 4 is not supported.

The results also show that dependence of the network has significant impact on integration of the subsidiary and responsiveness of the subsidiary (ϒ=0.427, ϒ=-0.464), which is consistent with our hypotheses 5 and 6. These results are in line with those of previous studies (Gupta & Govindarajan, 2000; Kim et al., 2003).

Finally, the performance of subsidiary is significant influenced by the integration of subsidiary and responsiveness of the subsidiary (ϒ=0.697, ϒ =0.263), which is consistent with our hypotheses 7 and 8. These results seem to indicate that the interrelationships among centralization, formalization, dependence, integration, responsiveness and performance are significant specifically.

5. CONCLUSIONS AND SUGGESTIONS

5.1 Research Conclusions

The major objective of this study is to identify the interrelationships among centralization of the network, formalization of the network, dependence of the network, integration of the subsidiary, responsiveness of the subsidiary and performance of the subsidiary. Based on the results of this study, several conclusions can be drawn. The first conclusion is that there are significant relationships among centralization of the network, integration of the subsidiary and responsiveness of the subsidiary. It indicates that centralization of the network tends to positively impact on the integration of technical skills and product, and has a negative impact on the level of localization, responsiveness to customers and responsiveness to competitors. In addition, the results also show that the levels of indicators for centralization of the network tend to significantly influence the levels of integration of the subsidiary including integration of technical skills and integration of product.

The second conclusion is that there are significant relationships among formalization of the network, integration of the subsidiary and responsiveness of the subsidiary. It indicates that formalization of the subsidiary tends to positively impact on the integration of technical skills and product. In addition, the results also show that the levels of indicators for formalization of the network tend to significantly influence the levels of integration of the subsidiary including integration of technical skills and integration of product, and also tend to significantly influence the levels of responsiveness including level of localization, responsiveness to customers and responsiveness to competitors.

The third conclusion is that there are significant relationships among dependence of the network, integration of the subsidiary and responsiveness of the subsidiary. It indicates that dependence of the network tends to positively impact on the integration of technical skills and product, and has a negative impact on the

level of localization, responsiveness to customers and responsiveness to competitors. In addition, the results also show that the levels of indicators for dependence of the network tend to significantly influence the levels of integration of the subsidiary including integration of technical skills and integration of product, and also tend to significantly influence the levels of responsiveness including level of localization, responsiveness to customers and responsiveness to competitors.

In summary, the conclusions we described before indicate that the network structure between headquarter and subsidiary has a significant influence on the conduct of subsidiaries, including the degree of integration in the subsidiary and the degree of responsiveness in the subsidiary. Taggart (1997) explains that there is the fourth group in the integration – responsiveness framework and it is quiescent subsidiary. But Tsai et al. (2006) find that there are only three subsidiary roles in Taiwan, they are the same with Jarillo and Martinez (1990). Finally, the fourth conclusion in this study is that the integration and responsiveness have a positive and significant effect on a subsidiary's performance, including strategic performance and financial performance. Our findings help substantiate the fundamental relationship between subsidiary conduct and subsidiary performance, and offers empirical support for the fundamental conduct-performance link in the global market context. It reaffirms the fundamental tenet of the global marketing literature and provides an empirical foundation for further research in the global marketing field.

5.2 Research Suggestions

The findings in this study have several implications for MNCs' managers in global industries. First of all, SCO model should be considered as a powerful and practical tool for businesses that provide a whole picture towards the relationship business structure, strategies and company's overall performance. The model offers the managers unique perspective on both micro level which indicates the core competencies, capabilities and firm strategies. Moreover, by utilizing this model in management would bring the leaders knowledge at macro level which help they understand the opportunities and constraints that they might face. More importantly, since integration of the subsidiary, including skills and product, and responsiveness of the subsidiary, including response to customer, competitors and level of localization, affects subsidiary's performance positively and significantly, the following actions could help managers to gain benefits from it. First, managers should carry on activities or conduct in the key regions or market carefully. The previous study suggests that the key regions or market tend to be those where major customers and / or competitors are located and where new technologies and product are produced. Operating in the key markets or areas supports MNCs the opportunity to response the customer needs and monitor the competitors to counter their moves with timely action. Second, Zou and Cavusgil (2002) refer that the key regions or markets of the world are now tightly interlinked. Managers can integrate their promotional mix and skills in these markets which can enable MNCs to gain worldwide efficiency. It does not represent that subsidiaries should not adapt their advertising themes, appeals, or media choice to the conditions of the local markets. Instead, it implies that a firm should adapt its promotional efforts only when it is necessary to respond to local customer preferences, media use patterns, and advertising regulations. Third, a key determinant of performance in global markets lies in manager's ability to establish

common needs among the customer segments worldwide so that core product can be accepted. A standardized product will provide MNCs with substantial efficiency in the global operations, and will bring scale economics, synergies and efficiencies (Yip,1995). In addition, it can simplify worldwide planning and afford the firm's brands a consistent image with global customers.

Several limitations of this study should be noted and pointed to the need for future research. First, because of the limitation of sampling resources, the composition of the sample means that the generalization of present findings needs further testing. Future research might direct more resources to data collection to increase the sample size and consider different types of firms or industries. Second, the research design is not longitudinal, and all information was obtained from survey in school. Therefore, the causal attribution of relationships is relatively weak. Further work should consider adopting a longitudinal design to future test the causal order of the factors.

Third, because only subsidiaries based in the Taiwan were surveyed, the findings may have limited generalization to other countries. For this reason, further research should test the applicability of this structure in other countries. Any limitation factors (culture, social, political, and economic) should be investigated. Fourth, in this study, we test how network structure influences performance through subsidiary strategy, future research should take the direct relationship between network structure and performance into account. Fifth, we analyze network structure through three constructs, but there may exist any interrelationships between these constructs in the international marketing field, further research needs to test the independency of these constructs.

Finally, although certain internal organization attributes were examined here, they are not exhaustive. Building on our theoretical framework, further research should explore the relevance of other external and internal factors for the MNCs global marketing strategy and performance. Additionally, it should be investigated that the possibility of the globalization potential of an industry may moderate the relationship between global marketing strategy and MNCs performance.

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APPENDIX

Constructs	Items	Citation
Centralization	**Level of HQ control**	Phillips (1982), Dwyer and Oh (1987), Taggart (1997), Robert and Arne (1999), and Geyskens et al. (1999).
	[CEN1] Headquarter decides long-term strategy planning of subsidiaries	
	[CEN2] Headquarter decides internal organizational structure of subsidiaries	
	[CEN3] Headquarter decides resource allocation of subsidiaries	
	[CEN4] Headquarter decides product design of subsidiaries	
	[CEN5] Headquarter decides sales and promotion plan of subsidiaries	
	Local of financial centralization	
	[CEN6] Headquarter decides product price of subsidiaries	
	[CEN7] Headquarter decides annual budget of subsidiaries	
	[CEN8] Headquarter decides financial plan of subsidiaries	
	[CEN9] Headquarter decides the salary and welfare policy of subsidiaries	
	Level of HQ influence	
	[CEN10] Headquarter sends supervisors to manage the subsidiaries	
	[CEN11] Local subsidiary yield to the recommendation of headquarter	
Formalization	**Formalization of structure and value activities of subsidiary**	Phillips (1982), Dwyer and Welsh (1985), Robert and Arne (1999), and Geyskens et al. (1999)
	[FOR1] There are standard procedures to be followed in marketing products	
	[FOR2] Local company follows strict operating procedures	
	[FOR3] Headquarter gives explicit reference of product pricing	
	[FOR4] Headquarter give explicit salary and welfare policy	
	[FOR5] There are explicit rules, policies, description, and standard procedures in subsidiary's process.	
	[FOR6] Headquarter establishes explicit employment policies for subsidiaries to follow.	
	Formalization of headquarter and subsidiary	
	[FOR7] As for most work, headquarter gives explicit rules and policies.	
	[FOR8] In the description of working process, there are explicit explanations to mention what actions should take in different situation.	
	[FOR9] Headquarter monitors if subsidiaries follow the rules and policies.	
	[FOR10] In general, the information routines from the headquarter are very clear	

Dependence	**Dependence of other subsidiaries in the group**	Frazier (1983), Taggart (1997), and Geyskens et al. (1999).
	[DEP1] Subsidiary depends on others in the group due to the difficulty of resource acquirement	
	[DEP2] The size of the contribution that internal networks make to the firm's profits is high	
	[DEP3] Percentage of inputs that comes from the group (headquarters plus other subsidiaries) is very high	
	[DEP4] Percentage of locally produced goods over the total sales is very high	
	[DEP5] The difficulty in effort and cost faced by an internal network in attempting to replace the other as a source of supply or as a customer is high	
	Dependence of HQ finance	
	[DEP6] Most of the research budget of subsidiary comes from headquarter	
	[DEP7] Most of the expansion budget of subsidiary comes from headquarter	
	[DEP8] Most of the operation budget of subsidiary comes from headquarter	
	Dependence of HQ staffs	
	[DEP9] Most of the supervisors of subsidiary comes from headquarter	
	[DEP10] Most of the key technologies of subsidiary come from headquarter	
	[DEP11] Most of the technical staffs of subsidiary come from headquarter	
	Dependence of HQ information	
	[DEP3] Most products of subsidiary are from headquarter	
	[DEP4] Most of the marketing skills of subsidiary come from headquarter	
	[DEP5] Most of the marketing information of subsidiary comes from headquarter	
Integration	**Integration of technical skills**	Taggart (1997, 1998), and Kim et al. (2003)
	[INT1] Proportion of local R&D. out of the total R&D' is very low	
	[INT2] Integration of the R&D function with the group is very low	
	[INT3] Local supervisors are assigned by the HQ	
	[INT4] People in the subsidiary often transfers to different locations	
	Integration of product	
	[INT5] Centralization of production planning, inventory and quality control is high	

	[INT6] Integration of purchasing with the rest of the group (joint purchase, for instance) is high	
	[INT7] Integration of the manufacturing processes is high	
Responsiveness	**Level of localization**	Taggart (1997, 1998), and Kim et al. (2003)
	[RES1] Local content in locally produced goods is very high	
	[RES3] Subsidiary has close interactions with local develop and research center	
	[RES4] Subsidiary follows the regulation made by the local government	
	[RES5] Subsidiary has close interactions with local supply chain members	
	Responsiveness to customers	
	[RES6] Needs are clearly identified and vary little between market	
	[RES7] Customers have a clear perception of the value of the product	
	[RES8] Customer decision processes are well established and familiar	
	Responsiveness to competitors	
	[RES10] Competitors strategies can be distinguished and understood	
	[RES11] Competitors can be recognized as sharing some typical characteristics	
Performance	**Strategic performance**	Zou and Cavusgil (2002)
	[PER1] The strategic position of our business unit in the global market is very strong.	
	[PER2] Relative to our major competitors, our business unit is very competitive in the global market.	
	[PER3] Our global market share is very high relative to our major competitors.	
	[PER4] We have been able to build a global leadership position in our industry.	
	Financial performance	
	[PER5] Compared to major competitors, global sales of our business unit have been increasing rapidly.	
	[PER6] The global operations of our business unit are very profitable relative to our major competitors.	
	[PER7] Our return on investment (ROI) is higher than that of our major competition.	

105年度專題研究計畫成果彙整表

計畫主持人：吳萬益					**計畫編號：**105-2410-H-343-004-	
計畫名稱：以服務主導邏輯為觀點之服務創新整合模式						
成果項目					量化	單位	質化 （說明：各成果項目請附佐證資料或細項說明，如期刊名稱、年份、卷期、起訖頁數、證號...等）
國內	學術性論文	期刊論文			0	篇	
		研討會論文			0		
		專書			0	本	
		專書論文			0	章	
		技術報告			0	篇	
		其他			0	篇	
	智慧財產權及成果	專利權	發明專利	申請中	0	件	
				已獲得	0		
			新型/設計專利		0		
		商標權			0		
		營業秘密			0		
		積體電路電路布局權			0		
		著作權			0		
		品種權			0		
		其他			0		
	技術移轉	件數			0	件	
		收入			0	千元	
國外	學術性論文	期刊論文			1	篇	Wu，W. Y. & Anridho，N. (2017), The Antecedents and Consequence of Service Innovation, Internationl Journal of Standard and Service, (接受正在進行最後修改中)
		研討會論文			2		Wu, W. Y. & Anridho, N. (2017), The Antecedents and Consequence of Service Innovation, 2017 Southwest Decision Sciences Institute’s 48th Annual Meeting, 3/8-3/10 Wu, W. Y. & Chang, L. K. (2017), An Empirical Study of Subsidiary Strategies Using Structure-Conduct-Outcome Framework, Vietnam’s Economic Development in the Process of International Integration, 4/20-4/22
		專書			0	本	
		專書論文			0	章	

		技術報告			1	篇	An Integrative Model of Service Innovation from Service-Dominant Logic Perspective
		其他			0	篇	
	智慧財產權及成果	專利權	發明專利	申請中	0	件	
				已獲得	0		
			新型/設計專利		0		
		商標權			0		
		營業秘密			0		
		積體電路電路布局權			0		
		著作權			0		
		品種權			0		
		其他			0		
	技術移轉	件數			0	件	
		收入			0	千元	
參與計畫人力	本國籍	大專生			0	人次	
		碩士生			0		
		博士生			2		1.南華大學企業管理學系管理科學博士班 賴彥廷 2.南華大學企業管理學系管理科學博士班 陳俞閔
		博士後研究員			0		
		專任助理			0		
	非本國籍	大專生			0		
		碩士生			2		1.柬埔寨籍碩士學生 歐妮塔 2.越南籍碩士學生 陳杜慶齡
		博士生			5		1.厄瓜多籍博士學生 安蔓雅(已畢業) 2.印尼籍博士學生 宮菲月(已畢業) 3.印尼籍博士學生 堤雅 4.越南籍博士學生 杜氏燕 5.越南籍博士學生 武明君
		博士後研究員			0		
		專任助理			0		
其他成果 （無法以量化表達之成果如辦理學術活動、獲得獎項、重要國際合作、研究成果國際影響力及其他協助產業技術發展之具體效益事項等，請以文字敘述填列。）							

科技部補助專題研究計畫成果自評表

請就研究內容與原計畫相符程度、達成預期目標情況、研究成果之學術或應用價值（簡要敘述成果所代表之意義、價值、影響或進一步發展之可能性）、是否適合在學術期刊發表或申請專利、主要發現（簡要敘述成果是否具有政策應用參考價值及具影響公共利益之重大發現）或其他有關價值等，作一綜合評估。

1. 請就研究內容與原計畫相符程度、達成預期目標情況作一綜合評估
   ■達成目標
   □未達成目標（請說明，以100字為限）
   　□實驗失敗
   　□因故實驗中斷
   　□其他原因
   說明：

2. 研究成果在學術期刊發表或申請專利等情形（請於其他欄註明專利及技轉之證號、合約、申請及洽談等詳細資訊）
   論文：■已發表　□未發表之文稿　□撰寫中　□無
   專利：□已獲得　□申請中　■無
   技轉：□已技轉　□洽談中　■無
   其他：（以200字為限）

3. 請依學術成就、技術創新、社會影響等方面，評估研究成果之學術或應用價值（簡要敘述成果所代表之意義、價值、影響或進一步發展之可能性，以500字為限）
   本研究發展一整合性的服務創新模式。S-D邏輯引導我們將所有種類及型式的創新、有形及無形的服務視為超越心理的模式。利用224位零售業之經理人作為研究樣本，本研究之主要結論如下：首先服務主導導向邏輯及知識資源為影響動態服務創新能力及服務創新之最重要因素。動態服務創新能力及服務創新將進一步影響組織績效，知識分享及知識整合機制扮演很重要的干擾作用，能夠強化動態服務創新能力對於服務創新之影響。環境要素及組織要素是另外兩個重要之干擾變數，能夠強化服務創新對於組織績效之影響。
   隨著國家經濟發展，服務創新之重要性越來越高，本研究提出以服務主導邏輯為觀點之創新整合模式，對於服務業者有一些啟發作用。首先，服務創新的能量，必須經由宣導服務主導邏輯及建立服務創新能力，才能夠發揮服務創新之整合。其次，知識分享及知識整合對於服務創新及組織績效之關係具有很重要之干擾作用，換言之，當公司之知識分享及知識整合機制未能有效建置及推動，則服務創新再怎麼努力對於組織績效之影響仍然有限。另外,環境要素及組織要素也是兩項非常重要的干擾因子，服務業之領導者必須了解環境及組織的變化，進而利用變化的契機來掌握機會，創造服務創新。

4. 主要發現

本研究具有政策應用參考價值：■否　□是，建議提供機關

（勾選「是」者，請列舉建議可提供施政參考之業務主管機關）

本研究具影響公共利益之重大發現：□否　□是

說明：（以150字為限）