

AN INTEGRATIVE MODEL OF SERVICE INNOVATION FROM SERVICE-DOMINANT LOGIC PERSPECTIVE

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ABSTRACT

Based on service-dominant (SD) logic, this study develops an integrated model of service innovation that 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 which consists of antecedents, mediator, moderators, and consequences of service innovation. This study 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.

224 managers from retailing industry were chosen as survey sample, it has been found out 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.

Keywords: Service Innovation, Service-Dominant Orientation, Dynamic Service Innovation Capabilities, Knowledge Resources, Organizational Performances.

INTRODUCTION

Service innovation is a complex field which represents various disciplines, including marketing (e.g., Berry, et al., 2006; Oliveira & Von Hippel, 2011), economics (e.g., Gallouj & Savona, 2008), information systems (e.g., Rose 2003; Rai & Sambamurthy, 2006), operations (e.g., Metters & Marucheck, 2007), and strategy (e.g., Dorner, et al., 2011). 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). However, previous empirical studies on service innovation have

narrowed conceptual frameworks which may not be able to capture the complexities of service innovation (Baker & Sinkula, 2007).

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).

LITERATURE REVIEW

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. S-D orientation is a co-creation capability which results from a company's individualized, 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 of 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). 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 cocreate 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 contributes 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. 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 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. 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 coproducing 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).

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 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). 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). 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 nonfinancial performance.

RESEARCH DESIGN AND METHODOLOGY

Research Model

This study presents an integrated research framework of service innovation as shown in Figure 1.

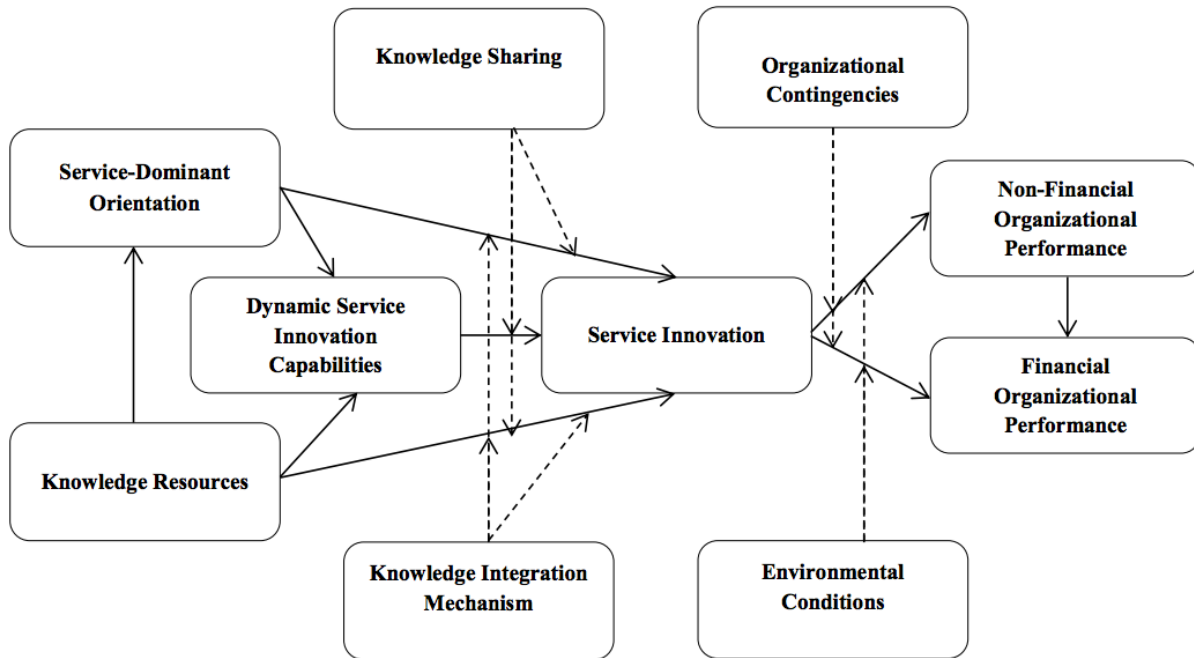


Figure 1. Proposed Framework

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. 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). The survey material included a cover letter from the researcher and the university. Respondents were asked to express their opinions about research constructs of this study. In this study, 250 respondents from Taiwan and 250 respondents from Indonesia were recruited to participate.

RESULTS AND DISCUSSIONS

Demographic Characteristics

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.

. 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 8 by 13% were marketing managers, 12% were CEOs, 6% were general managers, and 4% of the owners

Evaluation of Measurement Model

The collected data were analyzed by Partial Least Squares (PLS) using SmartPLS software. 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 & Larcker, 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.

The results show that service-dominant orientation ($\beta= 0.447$; $p < 0.001$) and knowledge resource ($\beta= 0.616$; $p < 0.001$) have positive influences on dynamic service innovation capabilities. Service-dominant orientation ($\beta= 0.163$, $p < 0.001$) and company capital ($\beta= 0.089$; $p < 0.001$) show significant effects on organizational performance. The R² values for the construct 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.

The Moderating Effect of Knowledge Integration Mechanism

Table 1 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.

Table 1 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
		<i>Construct R²</i>		
	Service Innovation	0.670	0.753	0.772

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

The Moderating Effect of Knowledge Sharing

Table 2 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

Table 2 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
				0.026
	KR*KS → SI			
		<i>Construct R²</i>		
	Service Innovation	0.670	0.772	0.816

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

The Moderating Effects of Organizational Contingencies

Table 3 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) ($\beta = 0.003$; $p > 0.05$) while service culture negatively moderates the effects of service innovation on organizational performance ($\beta = -0.084$;

$p < 0.001$). In addition, all the R^2 values of organizational performance are higher than its critical value of 0.1 (Falk & Miller 1992).

Table 3 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 R²				
	Organizational Performance (SCL)	0.371	0.484	0.484
	Organizational Performance (SCU)	0.371	0.594	0.600

Notes: *** $p < 0.001$

The Moderating Effects of Environmental Conditions

Table 4 shows the results of the moderating effects of environmental conditions. The results show (M9) that environmental munificence ($\beta = 0.028$; $p < 0.05$) and environmental dynamism ($\beta = 0.054$; $p < 0.01$) positively moderate the effect of service innovation on organizational performance while environmental heterogeneity ($\beta = -0.125$; $p < 0.001$) and environmental hostility ($\beta = -0.115$; $p < 0.001$) negatively moderate the effect of service innovation on organizational performance. In addition, all the R^2 values of organizational performance are higher than its critical value of 0.1 (Falk & Miller 1992).

Table 4 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 R²				
	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: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

RESEARCH CONCLUSION AND CONTRIBUTIONS

Several conclusions can be drawn from this study. First, as what this study proposed, a company which has service dominant orientation tends to have better service innovation. This study also supports the conceptualization of service dominant orientation (Karpen et al., 2012, 2015) as higher order formative construct which consists of six dimensions. Second, dynamic service innovation capabilities positively influence 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). 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. 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). 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. Fifth, 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. Last, the findings of this study 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.

This study contributes to practitioners from following aspects. First, managers are advised to build up a service-dominant orientation which is a company's capabilities to interact with value network partners, especially with customers. 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.