Service innovation: An empirical study of antecedents and outcome

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Many service industries often build competitive development of high-quality products and services for reasons of competitive advantage. The objective of this study is to investigate the antecedent factors that affect service innovation and sustainable competitive advantage of the service industry. These antecedent factors consist of learning capability, customer orientation, and innovation orientation. This study was conducted based on empirical data. The sample used in the study was collected from 124 executives of service industry enterprises in Thailand by simple random sampling. Questionnaire was used as a tool to gather data. Subsequently, the data was analysed and reliability was checked by Cronbach alpha, with a value of 0.90. It was confirmed by factor analysis and the consistency of the model influence on the performance of Thai service industry was checked. The research data was analysed using regression analysis. The results verified the prediction of qualitative relationships to be an essential instrument that helped the service industry to improve its sustainable competitive advantage with the proposal of efficient learning capability design, and adaptation of innovation and customer orientation models toward the ever-changing digital economy evolution. Moreover, the results of this study were executed effectively, starting from participation in the management theory to a discussion of suggestions and conclusion for future research directions.

Keywords: Innovation Orientation, Learning Capability, Customer Orientation, Service Innovation, Sustainable Competitive Advantage
Introduction

At present, service industries have a vital role in both global and Thailand’s economy. The service sector can generate substantial income among developed countries and also across the world. Further, the free trade practice has originated novel services and trades to support trade and investment expansion, resulting in an expenditure surge in the service sector.

According to the World Bank report in December 2016, economies of developed countries such as USA and European countries were propelled by the service sector which accounted for 70-80 percent of GDP, wherein product value of the manufacturing sector mostly came from the service sector. In Thailand, the service sector carries great dynamic and growth which are crucial in driving national economy forward. The proportion of Thailand’s service sector has remained at approximately 50 percent over the past two decades, defined mostly by low-productivity industries employing low-skilled labor and having a low share in the export sector, or generally the so-called traditional services. The country’s service sector has not yet maintained a sustainable increase of business share as other ASEAN or non-ASEAN economic and does not compare as well as the developed countries. Presently, the service sector in Thailand has employed as high as 40 percent of the total labor force and made up 50 percent of GDP value, compared to an employment ratio of only 15 percent and a value creation of 35 percent of GDP by the manufacturing sector. Engaging 17 million jobs or 40 percent of the Thai labor force, the service sector encompasses many industries, i.e. tourism, retail trade, health-related business, communications, transportation along with such desirable professions as architects, engineers, lawyers and physicians. Service industries becoming important in the future are medical care, wellness, tourism, logistics and airlines. In addition, other industries dependent on the industrial sector include robotics, future food and smart electronics. Education services also provide training and enhancement of skills necessary for the modern economy and innovation.

The Bank of Thailand’s report on economic and monetary conditions for January 2019 stated that service sector indicators expanded continuously from the same period of 2018. After seasonal adjustment, the service sector indicators accelerated from that of December 2018 due mainly to (1) business services of vehicle and machinery rental, and (2) communication services consistent with continually enlarging demand for data usage. However, merchandise transport business and trade business remained stable, while public services as well as hotel and restaurant business declined from the previous month in line with a decreasing number of foreign tourists over the same period, as per Figure 1.
Therefore, services are regarded as economic activities offered, mostly within a specified time, by one party to another in order to provide recipients with the desired results, objects or other assets under the responsibility of sellers, in exchange for money, time and effort of buyers who expect to derive the value of services from access to goods, labour, professional skills, facilities, networks and systems, whereas the customers do not typically claim ownership of the said physical objects of services (Lovelock and Wright, 2007).

As one of service industries with a significant role, the hotel industry has undergone pressure from intensifying competition in consequence of rapid and worldwide growth of the tourism industry. Hence, hotels across the world need to boost service innovation capacity by means of exploration and improve services by means of appropriate exploitation to bring about multifarious skills that contribute to continual value creation for their customers (Tang, 2014). Such other service industries as hospitals, commercial banks and insurance companies can also face similar form of pressure under the same circumstances, both external and internal, for drastic changes. In this regard, a corporate leader is the key person who enables an organisation to achieve research execution, concept design and alteration, along with innovative inventions through the marketing process, to utilise innovations in handling any changes that affect the organisation, and to successfully manage the organisation toward the determined objectives. Business strategies must be revised to attain immediate survival in the short run and to gain competitive advantage conducive to sustainable survival in the long run. This is in accordance with the resource-based view, a competitive advantage concept which considers that internal resources are more important than external factors in terms of corporate achievement and retention of competitive advantage, and that organisational performance is determined by the internal resources. As stated by Barney (1991), four potential components of internal resources for an organisation to earn sustainable competitive advantage are Value, Rareness, Imperfect Imitability, and Non-Substitutability. Many organisations have promoted and supported innovation (Keskin, 2006; Lee and Tsai 2005).
Furthermore, the concept is consonant with the idea of some scholars who have focused on the Dynamic Capability Theory and given an overview on the use of resources in dynamic markets (Helfat and Peterraf, 2003). They have proposed that the survival of certain appropriate resources is not adequate to maintain competitive advantage in conditions of unpredictably and a changing and volatile market (Teece, Pisano and Shuen, 1997; Eisenhardt and Martin, 2000). These scholars have thus asserted that dynamic capability or potential is a complex process involving identification of constantly turbulent changes in order to respond to abrupt changes in the business environment at one point of time (Teece, Pisano and Shuen, 1997; Eisenhardt and Martin, 2000; Zollo and Winter, 2002; Teece, 2007). It is therefore concluded that the creation of competitive advantage in an industry represents the response to changes. Accordingly, dynamic capabilities are referred to as an organisation’s reaction in a rapidly changing environment. There are studies advocating that organisational resources, which comprise innovation orientation, learning capability and customer orientation, are antecedent factors and have positive effects on service innovation (Cheng and Krumwiede, 2012; Tang, 2014; Sheng and Iting, 2015; Jones et al., 2006), and service innovation has positive effects on sustainable competitive advantage. Questions are then raised as to how these antecedent factors affect service innovation, and whether and how service innovation affects sustainable competitive advantage in the context of Thailand’s service industry. Therefore, the objective of this study is to investigate the antecedent factors and outcome variables of service innovation for the service industry in Thailand.

**Literature Review**

**Innovation Orientation**

Innovation means a success in introducing a product into the market (Im and Workman, 2004). A successful innovation is significant not only in aiding an organisation to achieve a competitive advantage (Chethamrongchai & Jermsittiparsert, 2019), but also in facilitating business survival as well as growth for financial success (Song, et. al., 2015; Grinstein, 2008). Entrepreneurs desiring to develop internal resource potentials for competitive advantage have employed organisational innovation or innovation orientation concepts in adjusting corporate resources to be valuable, rare, imperfectly imitable, and non-substitutable. For instance, Hurley et al. (1997) has defined innovation orientation as the organisation’s openness to or adoption of new ideas or processes for implementation, as well as receptiveness to new products or services, including inclination toward changes. This is based on new technology, resources, skills and internal management systems, with innovativeness and capacity to innovate as key components of organisational success. Meanwhile, Lumpkin and Dess (2001) have defined innovativeness as the intention and inclination to creatively support the experiment and introduction of new products/services, which are arisen from the creation of novelty, technological leadership, research and development of new processes.
The researchers have suitably integrated the innovation orientation variable in line with the conceptual framework, i.e. measuring of organisations that accept, adopt and implement new ideas, processes, products or services, and are inclined toward changes by employing new technologies, resources, skills and management systems (Hurley et al., 2005) in view of organisational innovativeness, overall product innovativeness, and process innovativeness with emphasis on products, marketing and technology. According to prior studies, the innovation orientation will affect organisational performance (Daniel and Raquel, 2011; Cheng and Krumwiede, 2012). Hence, it was hypothesised that:

**H1:** Innovation orientation positively influences service innovation.

**Service Innovation**

Service Innovation is associated with utilisation of new ideas, new processes, new methods and new technologies to operate or prepare new services, and to analyse for new methods that create added service value (Tang, 2014). Service innovation can be founded in customer need in the future (Chang et al., 2011) and can clearly examine that customers gain great satisfaction from experience with customer service. Additionally, Verma and Jayasimha (2014) have reviewed recent prior studies on service innovation, which was divided into two concepts, depending on the theoretical approaches of the resource advantage theory of competition (RA) by Hunt (1995) and the service dominant logic (SDL) by the conceptual framework of Vargo and Lusch (2004). They have concluded about the evolution tendency of both concepts that the resource advantage theory model is the basis for examining the business via its actual performance under the organisational operating resources, while the service dominant logic model becomes the basis for most of the recent published researches in the context of service innovation, from which empirical test results have detected partial relationships such as brand logic, etc. In the context of diversified delivery service innovation models, the examination has been conducted on three resource groups, namely technology, collaborative efforts, and networking of organisational resources.

Service innovation conceptual framework attaches importance to the existing structure of authority, with learning systems being improved according to the necessity for service upgrade. Thus, business performance can be maintained by the cooperation of the manufacturers of services. Collaborative service shall develop into a learning organisation through the betterment of learning constraints of large-scale business employees, the enhancement of innovative capabilities, and the elevation of employee limitations. Collaborations of customers, manufacturers and employees are therefore truly beneficial to business performance (Jermsittiparsert et al., 2019).
Learning Capability

Sinkula et al. (1997) have reviewed and developed the concept of organisational learning, and presented a broad conceptual framework for identifying a specific hypothesis regarding market-based organisation learning. It is concluded from an empirical test result that a learning orientation (a value-based construct) will directly have a highly positive effect in increasing market information generation and dissemination, and pose a direct impact to the extent that an organisation will make changes to its marketing strategies (a behavioural construct), which carries managerial implications. In view of organisational learning capability, it is regarded as the process aiming to develop a business toward growth through new methods by means of technology, production or sale. Knowledge enhancement helps promote, modify and improve behaviours (Trisakhon and Jermsittiprasert, 2019).

Also, there are studies that state that the establishment of a learning organisation affects organisational innovation capability (Liao and Wu, 2010; Alegre and Chiva, 2008; Noruzy et al., 2013) and that learning orientation has a positive effect on organisational innovation capability (Natalia and Carlos, 2019; Hanny et al., 2011; Elena et al., 2015). Hence, it was hypothesised that:

H : Learning Capability positively influences service innovation.

Customer Orientation

Customer orientation refers to organisation-wide gathering of data for inter-functional collaboration as well as organisational coordinative behaviours on an intellectual basis for customers (Narver and Slater, 1990; Song et al., 2005). Customer orientation helps increase the businesses’ (hotels’) understanding of customers and redesign or revamp service solutions to fulfil customer needs (Tang, 2014; Grissemann et al., 2013). In consequence, customer orientation helps improve managerial and financial performance (Tajeddini, 2010; Tajeddini and Trueman, 2012). From the aforementioned, it can be seen that service capability is assumed to be an unbiased and reliable mechanism. Therefore, risks can be mitigated by developing new services (Grissemann et al., 2013) and using feedback to improve current services (Lages and Piercy, 2012). In improvement and development, businesses must understand and be attentive to customer needs in order that service businesses, especially hotels, capably create services with balanced potentials and make improvements to provide satisfaction according to customer needs. Moreover, it is found upon review of literature that customer orientation has a positive influence on service innovation (Scott et al., 2009; Colin and Dennis, 2010; Chao-Hung, 2014). Hence, it was hypothesised that:
H3: Customer Orientation positively influences service innovation.

**Sustainable Competitive Advantage**

Sustainable growth is a measure for assessing strategic success of an organisation after the utilisation of learning capability strategy for organisational enhancement, by putting learning into practice in order for eventual goal achievement of the business. Being a concept which focuses on long-term problems, sustainable development is difficult to be recognised due to private organisations’ disinterest in investments related to sustainable innovation (Van den Bergh et al., 2007). In addition, another definition of sustainability is given as the certification of function in improving business performance or efficiency in order to continually serve influential markets (Font and Harris, 2004).

Business organisations face a challenge in responding to issues of accountability of responsibility. Such challenges in the globalisation era arise as limited resources make organisations become socially responsible, which is a key spur for dialogues between the business network and the government. In the dialogue on corporate social responsibility in the western world, many supporters confirmed and assured that corporate social responsibility does not mean that an organisation must be non-profitmaking. This is quite an essential logic of business operation for extensive-, medium- and small-scale enterprises in order to acquire comparative advantage and sustainable business efficiency in numerous companies. Many studies have proved that social responsibility plays a crucial role in enabling an organisation to attain sustainable competitive advantage (Rajiani and Pypłacz, 2018; Filho et al., 2010), which is in harmony with the notion that social responsibility, values and beliefs are equally significant in attaining sustainable competitive advantage (Haseeb et al., 2019).

Various concepts regarding sustainability literature should be considered for comprehensive application in order to ensure thoroughness. In the context of management and economy for sustainable development, for example, an effort is made to promote paradigms of sustainability management system and corporate social responsibility, which are usually restricted to environmental protection activities. Therefore, social dimension and economic dimension must be included. Some researchers (Hockerts and Wüstenhagen, 2010) have suggested that possible organisational sustainable development or sustainable entrepreneurship can be described by the organisation’s clear demonstration of fast-changing or productively-destructive activities, rather than of gradually-changing innovation, routine processes in gradually-changing environment, social process innovation through adoption of sustainable management systems, ecological efficiency or social responsibility projects. From such literature review, it can be concluded that the ability of entrepreneurs in building both organisational systems and activities suitable to support knowledge transfer and learning is the key to growth toward sustainability (Macpherson and Holt, 2007).
A paradigm that propels sustainable growth means adjustment of opportunities to the current influential paradigm in response to growth, but there are limitations relevant to public engagement in a more interesting environment. In view of dynamically-related sustainability management systems present as guidelines in other practices, low-risk sustainable resource management includes activities such as recycling, hazardous substance disposal and reduction, and energy efficiency (Weaver, 2007; Lawton and Weaver, 2009). Corporate social responsibility is an expectation from a trade utilising resource management innovation in an organisation to generate sustainability (Jones et al., 2006). From literature in other fields such as science or engineering, some scholars suggest that the cycle between fair technological diversification and increasing operating income to sales can be a source of a sustainable growth trend (Watanabe et al., 2004).

Business growth is a foremost aspect of business administration because it reflects market acceptance which leads to business success. However, it is difficult for an organisation to maintain consistent growth in reality (Park and Jang, 2010). These scholars give a view that growth patterns (size of business class and internationalisation) of an industry are important for examining sustainable growth strategy. Moreover, studies have been conducted on sources of change in profitability and growth as well as impacts of manufacturing business, including industrial countries and conglomerates (Goddard, Tavakoli and Wilson, 2009). The research hypothesis could be formulated as below:

H4: Service innovation positively influences sustainable competitive advantage.

Research Method

Population and Sample

Population in this service industry study came from executives in two service industries in Thailand only, comprising 9,514 hotel industry enterprises (source: list of hotels with tax reduction, 2016) and 14 financial institutions (source: The Bank of Thailand, 2016). The simple random sampling technique was employed. The sample group was composed of 400 respondents from the hotel industry by random sampling (Yamane, 1973) and 14 from 14 financial institutions, totaling 414 respondents. Questionnaires returned from the sample group and examined for initial completion and accuracy by the researchers were 124, equal to a response rate of approximately 30 percent against a suitable response rate for questionnaires of approximately 20 percent (Aaker, Kumar and Day, 2001).
Data Collection Method

A questionnaire survey was used as an instrument of data collection by postal mail and electronic mail during April 2016 – May 2018. The questionnaire comprised 48 questions, divided into 5 questions on an innovation orientation variable integrated from the works of Verma and Jayasimha (2014) and Sheng and Iting (2015), five questions on learning capability variable integrated from the work of Sheng and Iting (2015), nine questions on customer orientation variable applied from the work of Verma and Jayasimha (2014), eight questions on service innovation variable integrated from the work of Verma and Jayasimha (2014), and seven questions on sustainable competitive advantage variable integrated from the work of Verma and Jayasimha (2014).

The questionnaire was tested for instrument quality by means of an internal consistency reliability technique using Cronbach’s alpha values for the collected questionnaire data. Cronbach’s alpha coefficients were 0.891-0.954, which indicated that the questions in the questionnaire are reliable or uniformly consistent (Hair et al., 2006). Convergent validity was also assessed by confirmatory factor analysis (CFA) with factor loading values ranging from 0.762 to 0.922 40, which were statistically significant (Hair et al., 2006).

Data Analysis Method

Linear regression analysis was the statistical tool used for testing the hypotheses of this study. A correlation coefficient analysis was conducted as well.

Research Results

Table 1 Correlation Coefficients of All Variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>IO</th>
<th>LC</th>
<th>CO</th>
<th>SI</th>
<th>SCA</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Innovation Orientation (IO)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3.467</td>
</tr>
<tr>
<td>Learning Capability (LC)</td>
<td>0.821**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3.497</td>
</tr>
<tr>
<td>Customer Orientation (CO)</td>
<td>0.774**</td>
<td>0.763**</td>
<td></td>
<td></td>
<td></td>
<td>2.853</td>
</tr>
<tr>
<td>Service Innovation (SI)</td>
<td>0.827**</td>
<td>0.765**</td>
<td>0.778**</td>
<td></td>
<td></td>
<td>1.00</td>
</tr>
<tr>
<td>Sustainable Competitive Advantage (SCA)</td>
<td>0.849**</td>
<td>0.806**</td>
<td>0.733**</td>
<td>0.853**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>3.92</td>
<td>3.80</td>
<td>4.19</td>
<td>3.97</td>
<td>3.98</td>
<td></td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>.0735</td>
<td>.762</td>
<td>.625</td>
<td>.761</td>
<td>.730</td>
<td></td>
</tr>
</tbody>
</table>

** p< 0.01

According to Table 1, correlation coefficient analysis of innovation orientation, learning capability, customer orientation, service innovation and sustainable competitive advantage variables was conducted prior to hypothetical regression analysis. It was found that
correlation coefficients between 4 independent and 1 dependent variable presented 4 pairs of relationships, with values between 0.733 – 0.853 at a statistical significance level of 0.01. All the 4 relationship pairs showed positive values, indicating same-directional relationships. All the independent variables showed correlation coefficients between 0.763 – 0.827 and entirely positive values, thus having same-directional relationships. VIF values ranged between 1.000 – 3.646 which did not exceed 10, thus indicating no issue of multicollinearity (Hair, et al., 2006).

Table 2: Results of Multiple Linear Regression Analysis for Innovation Orientation, Learning Capability and Customer Orientation Variables Influencing Service Innovation

<table>
<thead>
<tr>
<th>Variables</th>
<th>Unstandardised Coefficients</th>
<th>Standardised Coefficients</th>
<th>t</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>β</td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>-0.036</td>
<td>0.242</td>
<td>-0.151</td>
<td>0.880</td>
</tr>
<tr>
<td>Innovation Orientation</td>
<td>0.488</td>
<td>0.092</td>
<td>0.471</td>
<td>5.287</td>
</tr>
<tr>
<td>Learning Capability</td>
<td>0.154</td>
<td>0.087</td>
<td>0.154</td>
<td>1.765</td>
</tr>
<tr>
<td>Customer Orientation</td>
<td>0.360</td>
<td>0.096</td>
<td>0.296</td>
<td>3.750</td>
</tr>
</tbody>
</table>

Dependent Variable: Service Innovation
R = 0.859 , R² = 0.738 , R² adj. = 0.732 , ** p< 0.01

The results of Hypotheses 1 to 3 testing were shown in Table 2, which presented results of multiple linear regression analyses that innovation orientation variable (β=0.471, p < 0.01) and customer orientation variable (β=0.296, p < 0.01) significantly influenced service innovation, while learning capability variable did not influence service innovation (β=0.154, p > 0.01).

Table 3: Results of Simple Linear Regression Analysis for Service Innovation Variable Influencing Sustainable Competitive Advantage

<table>
<thead>
<tr>
<th>Variables</th>
<th>Unstandardised Coefficients</th>
<th>Standardised Coefficients</th>
<th>t</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>β</td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>0.725</td>
<td>0.183</td>
<td>3.951</td>
<td>0.000</td>
</tr>
<tr>
<td>Service Innovation</td>
<td>0.819</td>
<td>0.045</td>
<td>0.853</td>
<td>18.057</td>
</tr>
</tbody>
</table>

Dependent Variable: Sustainable Competitive Advantage
R = 0.853 , R² = 0.728 , R² adj. = 0.725 , ** p< 0.01
Results of Hypothesis 4 testing were shown in Table 3, which presented results of simple linear regression analysis for service innovation variable that it significantly influenced sustainable competitive advantage ($\beta=0.853$, $p < 0.01$).

**Conclusion and Discussion**

The testing results conclude that hypotheses 1 and 3 are true, which means independent variables, consisting of innovation orientation and customer orientation variables, have a significantly positive influence on the service innovation variable, except for learning capability that has no influence on service innovation. Hence, hypothesis 2 is false. Further, hypothesis 4 is true, which means service innovation has a significantly positive influence on sustainable competitive advantage.

Administrative implications are drawn for any organisation capable of differentiating the services better than other organisations. It is difficult for those other organisations to imitate the services as easily as they can imitate the products. Accordingly, distinctive service values help an organisation to achieve greater competitive advantage over other organisations (Colin and Dennis, 2010; Scott et al., 2009).

In building service innovation, a firm should create a corporate culture that facilitates customers, with a focus on sharing of credible information for organisational service enhancement. Consequently, the firm can formulate distinctively better customer-oriented strategies over its competitors, thereby affecting the creation of organisational service innovation (Colin and Dennis, 2010).

Innovation orientation, customer orientation and learning capability are influential variables affecting sustainable competitive advantage for such service industries as hotels and financial institutions like commercial banks. These variables may be further applied to service industries other than the aforementioned sample group. This research produces new findings in that a typical study on the effects of the service innovation variable has been developed into a study on the sustainable competitive advantage variable. Studies on such subjects are scarce in number, especially those tested on the service industrial sector in Thailand. In this regard, the results of this research are in accordance with Hypothesis 4. Meanwhile, most of prior reviewed researches are studies on the service innovation variable affecting organisational performance (probably in financial, economic or marketing terms) (McDermott and Prajogo, 2012; Colin and Krumwiede, 2010), and/or maybe continuity studies on organisational performance variable which affect the sustainable competitive advantage variable.
Limitation of this research lies in data collection, that is, being conducted on an organisational level and by questionnaire. The data gathering was fairly time-consuming (approximately 2 years) due to a low response rate in the first data collection, thereby necessitating the second and third data collections.
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