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# From customer value co-creation behaviour to customer perceived value

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## ABSTRACT

This study investigates the chain effect of customer value co-creation behaviour on the customerization capability and service capability of service firms and, ultimately, customer perceived value. The study evaluates the moderating roles of the level of technologization and relationship marketing orientation in the relationship between customer value co-creation behaviour and the capabilities of firms. The data were collected from dyadic interaction between customers and the service staff of service firms in Vietnam through surveys. The results show that customer citizenship behaviour and participation behaviour are differentially linked to the customerization capability, and service capability of service firms, which in turn affect customer perceived values. Relationship marketing orientation serves as a significant moderator for customerization capability, yet it is not a significant moderator for service capability. Surprisingly, the level of technologization does not significantly moderate for both customerization capability and service capability. The study advances the literature of value co-creation and offers useful managerial implications.

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## KEYWORDS

Customer value co-creation behaviour; customerization capability; service capability; customer value; level of technologization; relationship marketing orientation

## Introduction

The advancement of technology accompanied by intense competition in the economy results in necessary changes in doing business. Changes in the temporary economy, particularly emerging economies, make conventional business practices unsuitable. These new economic conditions also force companies to shift their focus in doing business from largely enhancing internal efficiency to integrating external resources (Pralhad & Krishnan, 2008; Zhang & Chen, 2006, 2008). Recently, models of value co-creation have been highlighted as crucial for firms in order to create desirable values (Lambert & Enz, 2012; Zwass, 2010). Accordingly, values can be contributively created by a variety of stakeholders, such as customers, suppliers, and other external partners (Lin et al., 2017). Of the actors involved in the value co-creation process, customers have been identified as a particularly significant contributor that firms should effectively exploit (Healy & McDonagh, 2013; Jaakkola & Mathew, 2014; Merz et al., 2018; Plé, 2016; Prahalad & Ramaswamy, 2004). This suggests that an insight about customers' involvement in the value co-creation process will be a timely response to the new economic

situation, and therefore beneficial for companies, specifically the ones that operate businesses in emerging economies with growing competition in the market. According to Zhang and Chen (2008), a firm's focus on co-creation with customers can help to gain new competences, and so achieve a more competitive advantage.

Despite the considerable amount of research on customers' participation in value co-creation processes, several research gaps have been identified. First of all, a majority of the studies are conceptual works with untested research models (Gebauer et al., 2010; Hamidi et al., 2020; Hatch & Schultz, 2010; Hidayati & Novani, 2015; Laamanen & Skalen, 2015; Lambert & Enz, 2012; Merz et al., 2018; O'Hern & Rindfleisch, 2008; Prahalad & Ramaswamy, 2004; Ramaswamy & Ozcan, 2016; Zwass, 2010), while there exists limited empirical evidence of how customers' value co-creation behaviour affects firms' performance. While firms' performance can be accounting-based and market-based (Gentry & Shen, 2010), differential measures of performance may validate the association between value co-creation and the performance of firms. In a business world characterised by customer orientation and value-based marketing, insights about customers have been relentlessly pursued by firms, while values are increasingly encouraged to be evaluated from the customer's rather than the firm's perspective (Kotler & Armstrong, 2018). In this way, customer-based performance, like perceived value by customers, is a noteworthy performance measure for the evaluation of the effects of value co-creation, especially when there exists little empirical evidence on this specific linkage.

Moreover, though previous research has documented the linkage between customer value co-creation behaviour and the value created, the mechanisms involved in this process are obscure. Zhang and Chen (2008) and Braun et al. (2017) indicated that research on co-creation with customers is still in an early stage, and the mechanisms in the process are under-researched. Meanwhile, identifying and measuring the critical mechanisms for the creation of significant values, and so winning a new competitive advantage, is crucial to operationalise the new strategy of value co-creation (Liu et al., 2018; Zhang & Chen, 2008). Through the existing models of value co-creation, it is clear that customer involvement in value co-creation may catalyse firms' capabilities, which then trigger desirable value for customers (Baumann & Le Meunier-FitzHugh, 2015; Ngugi et al., 2010; Sheth, 2019). As such, firms' capabilities can function as mechanisms in the relationship between customers' value co-creation behaviour and accrued value. In market conditions where there is intense competition and increasing demands from customers, among a wide range of capabilities that service companies should strive for, customerization capability and service capability are the most crucial and relevant for service firms' success (Zhang & Chen, 2008). According to Zhang et al. (2011), while flexibility and delivery are two established capabilities for firms, service capability and customerization capability are identified as the two new capabilities for service companies, and they are supportive in value co-creation. If customer value co-creation behaviour is relevant to firms' significant capabilities (Ng et al., 2010), which lead to values, while the most important capabilities of firms are customerization capability and service capability (Zhang & Chen, 2008; Zhang et al., 2011), it is necessary to examine whether the customerization capability and service capability of companies serve as prominent mechanisms for values resulted from customer behaviours or not.

In addition, prior studies have recognised the intervention of value co-creation situational factors. The proposals from these studies show that the phenomenon of value co-

creation, including value co-creation from customers, is fluctuated by situational or environmental factors of value co-creation (Verleye, 2015). Regrettably, research on this path is rather scarce, especially empirical research. In the service industries with the viability of the context of Technology 4.0 and the intense competition, companies are subject to a high possibility of the adoption of technological devices for facilitating interactions in doing business (Chen et al., 2014; Sawhney et al., 2005), and an orientation of relationship marketing (Sin et al., 2005). This suggests that the level of technologization and relationship marketing orientation are two viable factors among service companies (Verleye, 2015, Tzokas et al., 2015) which may influence the value co-creation process (Ramaswamy & Ozcan, 2016), like the effect of customer value co-creation behaviour on firms' capabilities. Identifying the moderating influences of these factors will enable companies to control the value co-creation situations more effectively and to execute proper focus as well as strategy in managing value co-creation processes.

This study firstly aims at examining the chain effect of customer value creation behaviours on firms' capabilities, and the resultant values. With this aim, the study purposefully investigates the mediating role of two key capabilities of service firms including customerization capability and service capability. Moreover, the study aims to explore the moderating effects of two co-creation environmental factors including level of technologization and relationship marketing orientation, on the effect of customer value creation behaviour and firms' capabilities. Last but not least, based on empirical findings, the study suggests useful managerial implications for companies to foster customer involvement in co-creating values and to strategically manage the value-creation process.

## Theoretical background

### *Customer co-creation values*

Value has been identified as the comparison of benefit relative to cost, and it is the fundamental basis for marketing activities (Holbrook, 1994). As such, value is different from quality, which only captures the benefit side (Zeithaml, 1988). Prior studies reckoned that values created from co-creation processes include values for customers and values for companies (Mustak et al., 2013). A rigorous literature review suggests that a considerable number of types of values have been proposed by prior research, and there has been little agreement from studies on the set of values resulted from value co-creation processes. Some studies proposed that typical customer co-created values consist of transactional value and relational value (Baumann & Le Meunier-FitzHugh, 2015; Chan et al., 2010). Similarly, by attending to airlines services, Chen and Wang (2016) presented customer values with these two types and a new component, namely enjoyment value. Based on the two dimensions of motivation and personal orientation, Holbrook (2006) presented a typology of customer value with four components: economic, social, hedonic, and altruistic value. Mustak et al. (2013) conducted a review of customer value outcomes as a consequence of customer participation in value creation and conceptually introduced that values for the customer comprise superior value through better fit of the offering to the customer, like improved perceived service quality, economic value, and customer skill enhancement, to accrue value from an offering like networking capabilities. These values were recognised by prior research (Anderson &

Sullivan, 1993; Bitner et al., 1997; Gronroos, 2008). With a discussion on the service-dominant logic (SDL) (Vargo & Lusch, 2004) that emphasises the interaction of customers in the service delivery process, Luu et al. (2016) proposed a conceptualisation of customer value with two elements: outcome value and process value. Accordingly, outcome value is perceived at the conclusion of the service, and process value refers to the value that is created during service delivery. Outcome value entails the benefits that are perceived by customers at the end of the service encounter when compared to the amount of time, money, and effort they have spent (Luu et al., 2016). Meanwhile, process value represents the positive experience that a customer may perceive during the process of the service interaction/encounter when compared to the amount of money, time and effort they have sacrificed (Luu et al., 2016). This conceptualisation is advanced, since customer interaction is critical to the co-creation process (Normann & Ramirez, 1993). It is also in congruence with prior studies' proposed notion that value can be functional and/or non-functional (Chen & Kao, 2010; Gronroos, 1982). Following this reasoning, the current study adapts Luu et al.'s (2016) category of customer value.

### ***Customer value co-creation behaviour***

Much research has elaborated on customers' contribution in the value co-creation process. As an example, Merz et al. (2018) show that customers may contribute to value co-creation through motivations and customer-owned resources. The motivations that customers likely bring to value co-creation encompass trustworthiness, commitment, and passion, while customer-owned resources added to value co-creation comprise knowledge, skills, creativity, and connectedness. This categorisation does not attend to the behavioural element of customers, which may be more explicitly captured while at the same time are more likely to offer managerial implications for firms. Concerning behavioural contribution, customer behavioural participation in value co-creation has been paid much attention to, and many of the prior studies in this domain have treated customer value co-creation participation as a uni-dimensional construct (Auh et al., 2007; Bendapudi & Leone, 2003; Brodie et al., 2013; Chan et al., 2010; Chen & Wang, 2016; Mustak et al., 2013). Yi and Gong (2013) introduced a conceptualisation of customer value co-creation behaviour with two dimensions: citizenship behaviour and participation behaviour. Customer participation behaviour encompasses in-role or required actions that are vital for service co-creation, and customer participation was coined with four behavioural components: information seeking, information sharing, responsible behaviour, and personal interaction. Meanwhile, customer citizenship behaviour entails customer extra-role or discretionary behaviours that are beyond in-role or required performances for value co-creation (Bove et al., 2009). Operationally, customer citizenship behaviour includes four behavioural components: providing feedback, advocacy, helping, and tolerance. A group of studies used the term customer engagement behaviour to represent customer involvement in value co-creation process (Jaakkola & Mathew, 2014). Studies have conceptualised customer engagement behaviour as either a uni-dimensional construct or multi-dimensional variable (Jaakkola & Mathew, 2014). Nevertheless, there is a lack of measures for components of customer engagement behaviour (Jaakkola & Mathew, 2014). Remarkably, Gebauer et al. (2010) presented customer engagement as a sub-dimension of customer value co-creation activities in

public transport services akin to four other activities: self-service, customer involvement, problem-solving, and co-design. Based on the relevance of the conceptualisation of customer co-creation behaviour to service industries and the availability of measures, the present study employs the conceptualisation of Yi and Gong (2013).

The association between customers' contribution in the value co-creation process and organisational performance has been documented. Much research has evaluated customer satisfaction and customer loyalty as the outcome that enterprises achieved when integrating customers' contributions (Chen & Wang, 2016; Vargo, 2008). More specifically, Cossio-Silva et al. (2015) detected the connection of customer value co-creation contribution to attitudinal loyalty and behavioural loyalty. Similarly, with a focus on the tourism industry, Grisseemann & Stokburger-Sauer (2012) discovered the impact of customers' contributions to value co-creation on customer satisfaction, customer loyalty, and service expenditure. Interestingly, a considerable number of studies have examined the relevance of customers' value co-creation to perceived value, and then to organisational performances. For instance, by attending to the dyadic interactions of service staff and customers in Hong Kong and the US, Chan et al. (2010) specified that the perceived value created includes economic value and relational value, which then are associated with performance outcomes including customer satisfaction, employee job satisfaction, and job performance. Chen and Wang (2016) found similar results with economic, relational, and enjoyment values, and, ultimately, customer satisfaction, and customer loyalty as performance outcomes of customer participation in value co-creation. Akin to customer satisfaction, Dong et al. (2008) identified customers' intention to co-create value in the future as a performance outcome resulted from customer contribution and perceived value. Mustak et al. (2013) discussed that customer value co-creation leads to both resultant value for the customer (superior value through better fit of the offering, economic value, and skill enhancement to accrue value from an offering) and value for the enterprise, including economic, and relationship value related to innovation and development, and also negative value outcomes, but the study did not provide empirical evidence for the effects. Clearly, customer value co-creation is conducive to performance outcomes of enterprise, and the most popular outcomes studied comprise customer perceived value (i.e. economic and relational value), customer satisfaction and customer loyalty. Other types of performance, like the enhancement of specific capabilities of enterprises and new forms of values, like outcome value and process value, have not received adequate attention in prior research.

### ***Firms' capabilities***

Firms' capabilities have been acknowledged to be influential to the value co-creation process. Zhang et al. (2011) disclosed that there exists established capabilities (i.e. flexibility and service delivery) in service firms, and new capabilities that firms should attend to include service capability and customerization capability. Nevertheless, while acknowledging the significance of new capabilities, the study conceptually proposed that new capabilities and established capabilities are mutually supportive in value co-creation processes. By concentrating on other industries like software, some studies have stressed the relevance of information and communication technology capabilities (Peña et al., 2014), digitalisation capability (Lenka et al., 2017), and marketing alliance capability

(Filiari, 2013). With an interest in destination marketing organisations, Tussyadia and Zach (2013) signified three types of capabilities of firms that are relevant to customer value co-creation, which are explorative capability, transformative capability, and exploitative capability. Apart from this scant amount of research, existing studies have only shown recognition of the significant role of firms' capabilities by integrating them in conceptual models of value co-creation. Since the present study concentrates on service industries while acknowledging the new characteristics of a contemporary economy with intense competition and increasing customer demands, it intentionally attends to the two proposed new capabilities of service firms, namely customerization capability and service capability.

According to Zhang and Chen (2008), customerization capability is known as a firm's unique capabilities of precisely targeting customer groups, providing exactly what customers want, having clean organisational bureaucracy, identifying more market opportunities, and increasing collaboration with customers. Customerization of a firm includes both mass customisation and elicitation of individual demand information by involving customers. Service capability is operationally conceptualised as a firm's capabilities of creating new service, providing a unique service experience for customers, providing various services, and providing value-adding service (Zhang & Chen, 2008). With customerization, the firm implements their operational activities based on customers' needs and wants. Meanwhile, with a focus on service capability, firms may place more emphasis on standard service specifications while giving less consideration for customers' specific needs and wants. Empirical evidence from the study by Zhang and Chen (2008) suggests that the service capability of a firm is conducive to customerization capability because a solid service capability represents a significant chance for firms to cater to customers' individual preferences. Nevertheless, the two capabilities are distinctly different because the approaches and practices embedded in these capabilities are various, which cannot be interchanged or replaced for each other. Prior studies have indicated that these two foci are not the same, and that they can be differentially pursued by companies (Lai, 2004; Russo-Spena & Mele, 2012). This recognition is in line with the marketing philosophies of companies known as a focus on customers (i.e. customer needs and wants) and/or a focus on products/services (i.e. product/service attributes and characteristics) (Lamb et al., 2018).

### ***Value co-creation environments***

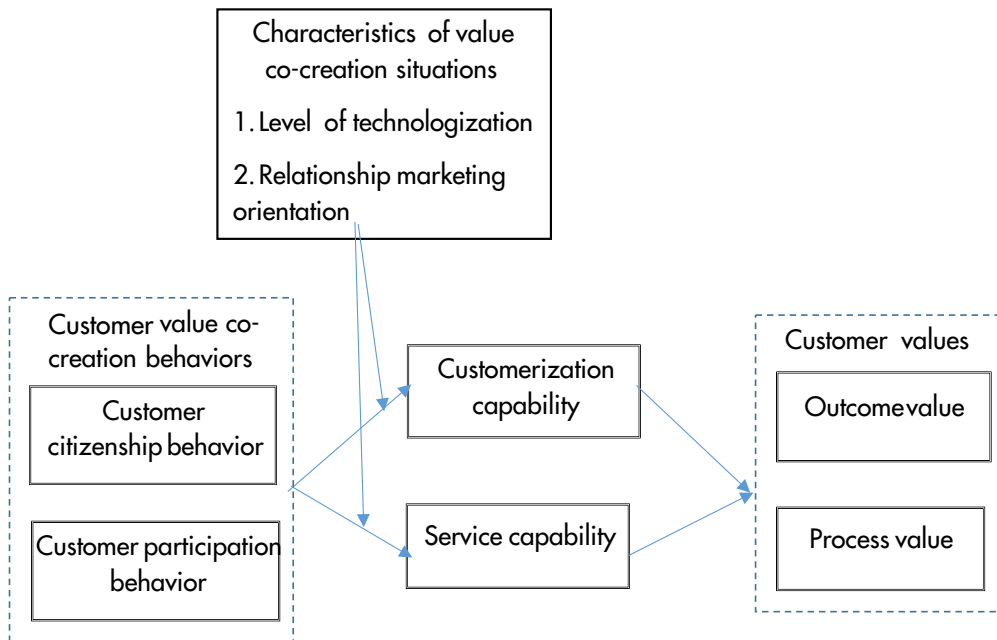
Characteristics of the value co-creation environment have sparingly been identified to influence the value co-creation phenomenon (Verleye, 2015). Nonetheless, rare evidence has been detected on the specific factors affecting the co-creation process, particularly firms' capabilities in the value co-creation process. Though a variety of environmental factors may simultaneously exist in the business process, inclusive of the value co-creation process, in the temporary economy, with the recent emergence of technology 4.0 and the typical intense competition in service industries, the level of technologization and relationship marketing orientation by firms can be viable. Technologization refers to the availability of tools and devices that aid in achieving a co-creation task. Recent literature has stressed the significant relevance of co-creation environments with high levels of technologization, for example, an environment with the availability of self-design tools

and user innovation toolkits. In an environment with high levels of technologization by firms, customers have more opportunities to be involved in designing their own products and services (Franke & Schreier, 2010; Thomke & Von Hippel, 2002). Such environments also facilitate customers to share new product ideas and service ideas with other customers (Füller, 2006, 2010; Nambisan & Baron, 2009, 2010). The concept of relationship marketing was formally introduced by Berry (1983), who defined it as ‘attracting, maintaining, and enhancing customer relationships’ (p. 25). The concept has been renewed by later research (Grönroos, 1991; Harker, 1999), but from a firm’s perspective, the relationship marketing concept can be viewed as a philosophy of doing business successfully, or as a distinct organisational culture/value that puts the buyer – seller relationship at the centre of the firm’s strategic or operational thinking.

### ***Research model and hypothesis development***

The premise of Resources-Based Theory (Barney, 1991) suggests that the value co-creation behaviour of customers, including customer citizenship behaviour (extra-role behaviour) and customer participation behaviour (in-role behaviour), are related to the core capabilities of a service firm, such as customerization capability and service capability, which are in turn conducive to customer perceived value, as customers are key receivers of value co-creation processes executed by the firm. This is in line with the call to evaluate values from the customer’s perspective (Kotler & Armstrong, 2018). Additionally, SDL posits that the customer and firm are akin to other partners like supplier are entities of service system for value co-creation. By joining the system of value co-creation, all entities (e.g., customer and firm), while making necessary contributions to the system, also gain some benefits for themselves (Spohrer, 2011; Vargo & Lusch, 2011). Being involved in the system, customers may engage in behaviours of value co-creation and gain value (i.e. benefits compared to costs incurred), while the firm may gain benefits from the contributions of customers for calibrating its capabilities to serve businesses (Blaschke et al., 2018). In this sense, the tenets of SDL underscore the linkage of the contributions of resources by actors like the customer, and the leverage of competencies, capabilities of enterprises, and the triggering of resultant values for actors (e.g., customer perceived value) (Vargo & Lusch, 2011). With such a theoretical foundation, the study purposefully attends to the relevance of customer value co-creation behaviour to the customerization capability and service capability of the firm, and ultimately to customer perceived value. With the proposed linkages, the study hypothesises customerization capability and service capability as mechanisms explicating the influence of customer value co-creation behaviour on customer perceived value. Additionally, with the relevance of the level of technologization and relationship marketing orientation relentlessly pursued by most service firms in the contemporary business world, that may affect the business operational activities of the firm, the study garners an interest in the moderating roles of these two factors in the process of the integration of customer value co-creation into fostering capabilities of service firms (i.e. customerization capability and service capability). The study proposes a theoretical framework and addresses specific relationships in the model illustrated in [Figure 1](#).





**Figure 1.** The proposed research model.

Customer performance of citizenship behaviour towards a firm has been widely found to be relevant to the performance of the firm (Groth, 2005; Rosenbaum & Massiah, 2007). This linkage suggests a leverage of capabilities of the firm. Voluntary helpful behaviours embedded in citizenship behaviours is beneficial for the firm and enables them to gain more information about customers' needs and wants. Providing elicited responses is a part of customer citizenship behaviour, which shows customer willingness to provide helpful information to the company and employees (Balaji, 2014), and in light of Resources-Based Theory (Barney, 1991), information provided by customers serves as a favourable resource enabling the company to properly tailor products and/or services to customers' preferences. Choi and Lotz (2016) disclosed that customers' providing feedback to a company regarding services/products, and suggesting constructive ideas to improve the business are forms of customer citizenship behaviour. Such behaviours facilitate the firm's learning about customers' tastes, and making necessary modifications in products/services to suit those identified tastes (Spohrer et al., 2008). Understanding customers' needs and preferences enables the firm to have more capability for precisely targeting customers (Zhang & Chen, 2008). The more a firm knows about customers' preferences and needs, the better it can provide exactly what customers want (Zhang & Chen, 2008). In addition, suggestions from customers have been used for identifying new market needs, and the development of new products/services, the sub-constructs of the capability of the customerization of the firm.

H1a: Customer citizenship behaviour positively affects firms' customerization capability.

Zhang et al. (2011) showed that customer value co-creation behaviour positively affects firms' customerization capability. In light of Zhang and Chen (2006) customer participative chain model, a company can involve customers with a variety of co-creating activities, and this involvement turns into a new capability. Customer participation and contribution into the activities of a company afford opportunities for the company to get to know more about customers' needs and preferences. This serves as a desirable condition for the development of customerization capability, as the company may tailor its services better to customers. Pine et al. (1995) also disclosed that customer active involvement in interactions and communication with a company allows for its enhanced understanding about customers' requirements, which improves its capability to provide exactly what customers want. The capability of a company for offering personalised services to customers is known as customerization capability. Navarro et al. (2016) supported that customers who actively participate in the co-creation of value tend to experience more satisfaction compared to those that do not show an active participation. In the same vein, Yim et al. (2012) found an association between customer citizenship behaviour and customers' enhanced satisfaction with the products/services received. Also, Revilla-Camacho et al. (2015) revealed that participation behaviour can reinforce customers' satisfaction with meeting their needs, and such behaviour provides them with the exact benefits that they seek. The reason can be that rich inputs from customers facilitate firms' capability to properly attune to customers' requirements. Zhang and Chen (2008) reckoned that customer inputs (e.g., efforts and knowledge) can be turned into new capability for the firm. Firat et al. (1995) presented that firms in which customers participate actively are more likely to create personalised offers. This phenomenon seems obviously robust in service industries (Yi & Gong, 2013). Therefore, the study proposes:

H1b: Customer participation behaviour positively affects firms' customerization capability.

Customers' voluntary behaviours in the production and delivery of services help companies generate knowledge-based solutions directly from the information provided by their customers (Bailey et al., 2001; Rosenbaum & Massiah, 2007), which then can be translated into better performances for the firm (Anaza & Zhao, 2013), necessarily comprising performances of service delivery like developing unique services. Customers' willingness to help the firm as a form of citizenship behaviour by providing useful information also allows the firm to improve future service performance because the company uses much of the information generated from customers in developing future services (Anaza & Zhao, 2013). Additionally, customers' provision of feedback on products/services as an aspect of citizenship behaviour contributes to improve the process of service creation by the firm (Groth et al., 2004) because customers have experiences with the products/services, and customers are also experts from the customer perspective (Yi & Gong, 2013). Since customers are on the receiving end of a firm's services, the firm can benefit greatly from customers' feedbacks and suggestions for better services (Yi & Gong, 2013). In this way, firms' capability of both developing new services and unique service is leveraged. Besides, customers' tolerance or willingness to be patient when the service delivery does not meet their expectations of adequate service is also beneficial for the firm in order to calibrate service capability (Lengnick-Hall et al., 2000) as customers' patience facilitates the firm's process of recovery from service failures and trials of new services. With the aforementioned reasons, the study proposes:

H2a: Customer citizenship behaviour positively affects firms' service capability.

The interaction of customers with the firm allows it to design services that differentiate their offerings (Pine et al., 1995). Specifically, customer participation in marketing, service development, and service care of the firm facilitates the creation of new, value-adding service offerings and a unique service experience for customers, and so improving the service capability of the firm (Zhang et al., 2011). In the same vein, Youngdahl (1996) acknowledged that in the service environment that demands a high level of customerization, the firm should employ a high involvement structure, which results in an emphasis on service capability to gain competitive advantage. Meanwhile, a high involvement structure prioritises customer involvement and contribution into activities of firm. This suggests that customer participation in co-creation activities is conducive to the firm's enhanced service capability. Customer participation improves the ability of the firm to provide a good quality of service (Amorim et al., 2014; Heinonen et al., 2013). The information and data generated from interaction with co-created customers allows the firm to create unique approaches to serve customers (Zhang & Chen, 2008). Therefore, the study proposes:

H2b: Customer participation behaviour positively affects firms' service capability.

According to Zhang et al. (2011), an enhanced capability of the customerization of the firm benefits customers such that they may obtain customised products and services. This indicates that customer outcome values are achieved, as customised products and services that customers receive are forms of outcome values (Luu et al., 2016). The reasoning is that the capability of the firm to offer services in accordance with customers' personal needs and wants likely makes customers satisfied with the outcomes received as their needs are satisfactorily met. There exists paramount evidence of prior research that firms' capability of fulfilling customers' personal needs and wants result in customers' perception of a better quality and value of services (Kotler & Armstrong, 2018; Wirtz et al., 2013). Moreover, with strong capability to target specific groups of customers, a firm can provide customers with customised products/services, which increases their perception of values compared with their expenditure (Zhang & Chen, 2008). Therefore, the study proposes:

H3a. Firms' customerization capability positively affects customer outcome values.

The customerization capability of a firm has been linked to customers' perceived experiences of service (Zhang et al., 2011) while customers' experience has been identified as an indicator of customer process values (Luu et al., 2016). Customerization capability can be relevant to customer process value in two ways. First, firms closely attending to customers' needs and preferences likely suits customers' expected experiences. With fulfilment of customers' expectations of the service processes involved, customers may become more positive when evaluating process of service delivery. Second, with the capability of precisely targeting groups of customers, the firm becomes more competent at tailoring the service delivery processes to those groups, leading to high satisfaction with customers' experience of the service process. Firms that precisely attune to customers' needs may maximise customers' satisfaction with the process of service delivery because they likely perceive the process is right and effective. In this way, customers perceive more

values or benefits pertinent of the service process. Also, more collaboration with customers as a characteristic of the customerization capability of the firm (Zhang & Chen, 2008) allows for more ties between company and customers which may buffer the effect of possible service failures to customers and add to customer's positive evaluation of service processes (Wirtz et al., 2013).

H3b: Firms' customerization capability positively affects customer process values.

The capability of firms to offer a good service adds value to the physical product (Vickery et al., 1995). An enhanced service capability of firm entails that firm is better at providing value-added services (Zhang & Chen, 2008). These services either offer more benefits or reduce the costs incurred for customers, or both (Kotler & Armstrong, 2018). Customer perception of receiving more benefits in the service is an indicator of customer perceived outcome value (Luu et al., 2016). The capability of a firm to provide multi-kind service allows customers to have more options of the services they can receive, which likely adds values to their overall service received (Wirtz et al., 2013). Besides, the capability to create new service embedded in a firm's service capability results in customers' perception of value, as a new service is often superior in offering benefits and solutions to customer problems and/or contributing to reduced costs for customers, which are forms of perceived value of the service received (Kotler & Armstrong, 2018). Furthermore, since customers increasingly become innovative and knowledgeable, new services created by a firm are appreciated and championed by customers. Customers tend to attribute higher quality and values for new services provided. As such, firms' ability to produce new services is relevant to customer perceived value of services received. Hence, the study proposes:

H4a: Firms' service capability positively affects customer perceived outcome value.

An improved service capability of firms also triggers a smoother, more effective process of service delivery to customers (Zhang et al., 2011). The customers are more likely to experience the perception of attainment of benefits in the process of receiving services. Capability to create unique service experiences to customers possibly results in customer delights and satisfaction with the experience (Wirtz et al., 2013). Unique experiences increasingly become the relentless pursuit of service firms since it offers both compelling differentiation, apart from the clutters of products and services, and caters to customers' interest in their experiences of the service process in the contemporary business world. The capability to create new services necessarily includes an ability to make meaningful innovations for process of services as a large number of services are experience-oriented. In this sense, the stronger the capability of a firm to innovate processes of service delivery, the more likely customers become satisfied with the service experiences during the process. The connection of improved service process to customer satisfaction with the experience has been championed with the practices of 7Ps for service industries, and evidence has been well-confirmed in studies of customer experiences in services. Thus, the study proposes:

H4b: Firms' service capability positively affects customer perceived process values.

Research has documented the linkage between customers' in-role, extra-role contributions and customerization capability of a firm (Zhang & Chen, 2008; Zhang et al., 2011),

and the connection between the capability of customerizing products/services and values perceived by customers (Kotler & Armstrong, 2018). These associations partly show the mediating effect of the customerization capability of the firm. The present study proposes that the firm's customerization capability may play a mediating role in the effect of customer value co-creation behaviour and customer value for two main reasons. First, following the tenet of Resources-based Theory, customer involvement in value creation activities with a firm serves as a favourable resource for the firm to leverage capabilities for resultant performances. Customers' in-role and extra-role contributions offer ample opportunities for the firm to gain insight about customers' needs and preferences. These favourable resources enable the firm to improve the capability of precisely catering to customers' desires, properly targeting groups of customers which in turn result in an increase in customer perception of values received. Prior studies have stressed the value of information generated from customer interactions and touch points for increasing firms' capability of meeting customers' preferences, and such a solid capability is translated into value for customers because customers benefit from efforts made by the firm. The premise of SDL (Vargo & Lusch, 2004) also supported that customers as service system entities offer contributions of value co-creation (i.e. citizenship behaviour and participation behaviour) that are beneficial for enterprises (e.g., improving capability in targeting and serving customers) as both entities experience a win-win situation. Meanwhile, enterprise as a service system entity co-created values for customers. These linkages, in part, show that a firm's capability pertaining to the performance of their service can be a mechanism bridging the customer value co-creation behaviour and customer co-created value received. Thus, the study proposes:

H5: Firms' customisation capability mediates the relationship between customer value co-creation behaviour (a. citizenship behaviour; b. participation behaviour) and customer values (a. outcome value; b. process value).

Similarly, the association between customers' contributions with customer citizenship behaviour, customer participation behaviour and firms' customerization capability (Zhang et al., 2011) and the relevance of the firm's capability to offer customerized products/services to customers' perception of value (Wirtz et al., 2013) have been well-addressed. Such linkages partly suggest the mediating role of the customerization capability of the firm. Customer citizenship behaviour and participation behaviour as two forms of customer value co-creation behaviour afford opportunities for firms to understand their customers. Prior studies have shown that the more information a company has about its customers through interactions with them, the better services it can later deliver, since such knowledge can be integrated into the service design process and the service delivery process. These connections explicate the contribution of customer value co-creation behaviour towards improving the service capability of the firm. Yang et al. (2014) reckoned that the engagement of customers in the service process benefits the service firm such that it leverages the firm's capability of improving service quality, and this capability of service improvement fosters customers' positive outcomes (Dagger et al., 2007). In addition, service encounter involves inseparability between service provider and customer. Once customers are active in being involved in and contributing to the service encounter process, like cooperating with service provider for facilitating service delivery or suggesting better solutions, the service provider as

the representative of service firm may experience positive learning. To a larger scale as well as for a certain amount of time, the service delivery capability of service staff will be dramatically leveraged and so there is an improvement in the service capability of the firm. Such an improved service capability enables service staff to satisfactorily conduct services with customers, which results in bettering customer service consequences (e.g., high level of success of service) and customer service encounter processes (e.g., saving time). In addition, in accordance with premises of SDL, actors (e.g., customers) provide input to the value co-creation processes for benefiting the other actor (i.e. enterprise) (Spohrer, 2011; Vargo & Lusch, 2011). Then, with a focus on service, enterprise as an actor applies specialised competences and capabilities through deeds, processes, and performance for the benefit of another actor (e.g., customer) or the actor himself (Lusch & Nambisan, 2015). Blaschke et al. (2018) proposed a model based on S-D Logic to which the firm as an actor integrates resources from other actors (e.g., customers) into processes and activities of service provision to create values. These discussions entail the connections among customers' contributions of resources, capabilities of enterprise for provision, development of services, and resultant customer perceived value. Hence, the study proposes:

H6: Firms' service capability mediates the relationship between customer value co-creation behaviour (a. citizenship behaviour; b. participation behaviour) and customer values (a. outcome value; b. process value).

Customer involvement in value co-creation activities may be conducive to a firm's customerization capability since the firm has ample opportunity to understand about customers' needs and wants, and so become more capable of tailoring their services to customer's personal needs and wants. The level of the relationship marketing orientation of a firm may serve as a moderating factor for the magnitude of the effect. The underlying reason is that with a high level of relationship marketing orientation, the firm becomes more attentive to sustaining relationships with customers (Sin et al., 2005), which enhances their awareness and sensing of customers' needs and wants. With more quality information generated from customers thanks to strong relations (Kotler & Armstrong, 2018), a firm likely leverages its ability to precisely target groups of customers and accurately tailors its services to customers' needs and wants (Wirtz et al., 2013). In contrast, for a firm with a low level of relationship marketing orientation, the information generated from customers' contributions of value co-creation will have low quality due to the limited nature of relationships that prevent firms from gaining a comprehensive understanding of their customers (Sin et al., 2012), and hence reducing firms' capability of accurately identifying customer groups as well as tailoring their services exactly to the customer's needs. In addition, in a firm with a low degree of relationship marketing orientation, its attention to customers' personal needs and wants will be accordingly low as the firm does not strive to strengthen relationships with customers by satisfying their personal requirements (Sin et al., 2002). This lack of attention to meeting customers' personal demands may mitigate the impact of customer involvement, and the participation in value creation on the capability of the firm for attending to customers' specific needs. This is opposite to the firm with a high degree of relationship marketing orientation, where attention to customers' inputs is intensified, allowing for efficiency in translating the contributions of customers, both in-role (participation behaviour) and extra-role

(citizenship behaviour), into the capability of a service performance, like customerization capability. Therefore, the study proposes:

H7a: Level of relationship marketing orientation moderates the effect of customer value co-creation behavior (a. citizenship behavior; b. participation behavior) on firms' customerization capability such that the effect of customer value co-creation behavior (a. citizenship behavior; b. participation behavior) on firms' customerization capability is larger when the level of relationship marketing orientation is high.

Customer contributions with citizenship behaviour and participation behaviour in the value co-creation process can be conducive to a firm's service capability, thanks to valuable customer information inputs (Zhang & Chen, 2008). For a firm with a higher level of relationship marketing orientation, the inputs provided by customers through value co-creation behaviour can be more attentively exploited as the firm with an orientation to building and sustaining relationships with customers likely makes efforts in calibrating the information of customers into business operations (Palmatier et al., 2008). More focus on customer inputs can leverage the effect of customer contributions on a firm's capability to develop new services and/or value-adding services, which are forms of service capability (Wirtz et al., 2013). In contrast, for a firm with a lower level of customer relationship marketing orientation, input from the contributions of customers are less effectively exploited to turn into service capability. This is due to the limited quality of the input captured by the company. Capability for developing unique, diverse, and new services may not be maximised when a firm lacks insights from customers or quality input generated from customers (Kotler & Armstrong, 2018). Additionally, for a firm with a focus on developing relationships with customers or a high level of relationship marketing orientation, they likely have superior know-how and a system to turn customers' input, through their contributions, into competencies, like better performance of services (Wirtz et al., 2013). With the advanced and strategic practices of relationship marketing, the contributions of customers to the value co-creation process can be effectively translated into the capabilities of the firm in developing services. Therefore, the study proposes:

H7b: Level of relationship marketing orientation moderates the effect of customer value co-creation behavior (a. citizenship behavior; b. participation behavior) on firms' service capability such that the effect of customer value co-creation behavior (a. citizenship behavior; b. participation behavior) on firms' service capability is larger when the level of relationship marketing orientation is high.

Customer behavioural involvement in the value co-creation process of a firm can be relevant to the customerization capability of the firm (Zhang et al., 2011). In an environment with a high level of technologization or a condition with available technological devices for facilitating activities of service, firms are more likely to sense and interpret customer behaviours, and so gain an accurate understanding of customers' needs and wants (Tzokas et al., 2015) resulting in more amplification of capability for providing customised services to customers. Second, with the availability of advanced technological equipment for service environment, firms encounter more favourable conditions for attending to and catering to customers' personal requirements (Verleye, 2015). Therefore, they have more possibilities for maximising customerization capability. According to Franke et al. (2008), high technologization – with available toolkits for

innovation – helps to facilitate trial-and-error experimentation for customers. This situation provides ample opportunities to learn their preferences iteratively (Franke & Schreier, 2010), and so allowing firms to have deeper insight into customers' needs. Thus, the study proposes:

H8a: Level of technologization moderates the effect of customer value co-creation behavior (a. citizenship behavior; b. participation behavior) on firms' customerization capability such that the effect of customer value co-creation behavior (a. citizenship behavior; b. participation behavior) on firms' customization capability is larger when the level of technologization is high.

Customer value co-creation behaviour can be relevant to the service capability of a firm, and in the context of a high level of technologization, the connection becomes more prominent. With more available technological devices in the service environment, a service firm is more likely to integrate customers' value co-creation behaviour into leveraging its capability for serving customers. With support from technological devices, a firm may effectively capture resources from customers, and turn these resources into the capability to develop services (Wirtz et al., 2013). Availability of technological devices often facilitates communication and interaction between customers with employees and firm (Thomke & Von Hippel, 2002), therefore leveraging the firm's capability of developing competencies like capability of service. Opposite to this, in the organisational service context with a low availability of technological devices for service operations, a firm may become less effective in exploiting the contributions of customers in the value co-creation process. In other words, their integration of resources as contributed by customers is not ideally effective for triggering the capability of developing new services with the information generated from customers or adding proper value-added services to suit the customers. This is because technologization allows for a firm to have more access to customer information thanks to effective interactions and communication (Füller, 2010; Nambisan & Baron, 2010). Besides, a high availability of technological devices in the service context amplifies opportunities for customers to contribute (Franke et al., 2008), and so increasing the effectiveness to provide desirable services to customers. Therefore, the study proposes:

H8b: Level of technologization moderates the effect of customer value co-creation behavior (a. citizenship behavior; b. participation behavior) on firms' service capability such that the effect of customer value co-creation behavior (a. citizenship behavior; b. participation behavior) on firms' service capability is larger when the level of technologization is high.

## Research method

### *Samples*

With the intended purposes, the study intentionally targeted customers and managers of service firms in Vietnam. Specifically, the study aimed at firms of education, dining, hospitality service, health, and telecommunication sales services. Precisely, 6 educational service companies, 21 companies of dining service (10 restaurants and 11 coffee shops), 9 tourism agencies, 12 companies of health service (4 spas and 8 clinics), and 3 telecommunication sales service companies were targeted. The number of companies for contact



of data collection in each service type was considered to reflect the representativeness of the service distribution. These types of service firms were selected for two reasons. First, they warrant customer involvement in activities with firms. Second, in these service sectors, a focus on attending to and meeting customers' personal needs and wants is crucial to firms, and so customerization capability and service capability are specifically focussed on. Focussing on these diverse service sectors also allows for a more generalised evaluation of the phenomenon. All of these firms that were contacted for data collection were operating in big cities including Hanoi, Ho Chi Minh, and Da Nang. The reasons for selecting service companies in big cities rather than small cities or rural areas are three-fold. First, the competition level is intense in these cities which pushes these companies to attend to customers' personal needs and wants. Second, customers in well-developed cities are knowledgeable, so they are more likely to engage in activities of firms for creating values. Third, the customers are more densely populated in big cities, so by dedicating to these big cities, the study reflects the most dominant group of customers in Vietnam.

As for the profile of the respondents, two thirds of service providers are female. 69% are in the age range of 25–39, and 15 are aged less than 25. The remaining 17% are aged over 40. In terms of educational qualification, 72% have an undergraduate degree while 17% have a Master's degree. Nearly half of the service staff (45%) have worked for more than 2 years in their current organisation. 24% have worked in their organisation for one to two years, while 31% have worked there for only 1 year. The percentages featured in the sample denote the representativeness of the population as the majority of the personnel in the field are female with a bachelor's degree. For the customers, most of the customers are female (over half) and young, with the age range of 25–39 (68%), an undergraduate degree (67%) or a Master's degree (23%). 36% of the customers have used the services of the current service companies for 6 to 12 months, while 34% have used the services from the companies for more than 13 months. 32% have used the services from the companies for less than 6 months.

### ***Data collection procedure***

Prior to data collection, the measures of the study's variables were generated from previous research. The measures in the questionnaires were checked for suitability of the study target context by four marketing professors. Then, these measures were combined with questions about the demographics of respondents to form two questionnaires: one for customers and the other for service providers. These two questionnaires were translated through a back translation process to warrant meaning compatibility of the measuring items. The translated questionnaires in Vietnamese were piloted on 30 service providers and 30 customers of service companies to check for clarity of meanings for measuring items and feasibility of answers. Then the questionnaires were revised based on the generated comments from the respondents. The revised questionnaires were then distributed to 400 respondents including 200 service providers paired with 200 customers in three of the biggest cities of Vietnam: Hanoi, Da Nang, and Ho Chi Minh City. Three research assistants were involved in data collection. Prior to the official data collection, they were briefed on the purpose of the research, the approach to contact respondents, and the meanings of the measuring items in the questionnaires. The research assistants delivered the questionnaires in person to both

the service providers and customers. Each pair, consisting of a customer and a service provider, was targeted following the service delivery process. The criteria for the selection of the dyads is twofold: (1) The dyads warrant a high level of involvement and contributions from customers; (2) the dyads belong to core services of company/store. For example, for dining service, only the dyads between serving staff and customers are targeted, while the dyads between customers and counter staff are not. The information for the dyads was provided by the store/company prior to the process of data collection from the dyads in each store. Then, the questionnaire for each pair was coded as a data unit and entered for data analyses. The data collection process lasted two months. Six pairs of questionnaires were excluded due to wrong and/or missing answers. 194 pairs of questionnaires were valid for subsequent data analyses.

## Measures

Customer co-creation value behaviour was measured with two dimensions, customer citizenship behaviour and customer participation, that were adapted from Yi and Gong (2013). These two measures were widely adapted from several previous studies. Customer citizenship behaviour was measured with 16 items covering four components: information seeking (3 items), information sharing (4 items), responsible behaviour (4 items), and personal interaction (5 items). An example item of customer citizenship behaviour is 'I clearly explained what I wanted the employee to do.' Meanwhile, customer participation behaviour was measured with 13 items of 4 components: feedback (3 items), advocacy (3 items), helping (4 items), and tolerance (3 items). A sample item of customer participation behaviour is 'When I receive good service from the employee, I comment about it.' Outcome value was measured with two items, while process value was measured with three items. These items were adapted from Luu et al. (2016). A sample item for outcome value is 'the benefits we receive from the store are good.' An example item of process value is 'we have an enjoyable time during the time we use the service.' Relationship marketing orientation was measured with 19 items reflecting the relationship marketing orientation of firms proposed by Sin et al. (2005). A sample item is 'we both try very hard to establish a long-term relationship.' The measure of the level of technologization was adapted from Verleye (2015), with two levels: high versus low availability of online tools and devices to aid in achieving tasks. The measures of customerization capability and service capability were adapted from Zhang and Chen (2008). Customerization capability and service capability were measured with 9 items. These items were designed to make the comparison between the target firms and their major competitors on a five point scale where 1 is much lower than the competitor and 5 is much higher than the competitor. A sample item of customerization capability is 'provide exactly what customers want.' An example item of service capability is 'the capability to provide a unique service experience.' All of the measures are included in the Appendix.

The items of customer value co-creation behaviour and customer perceived value were measured on customers, while items of relationship marketing orientation, level of technologization, customerization capability, and service capability were evaluated by service employees. The use of service staff for an evaluation of the firm's resources (i.e. relationship marketing orientation and level of technologization applied) and capabilities for performing the services (i.e. customerization capability and service capability) is

suitable because frontline staff have been identified as being capable of examining the resource and process factors underlying the provision of customer services (Gudergan et al., 2008).

### **Common method bias**

In an attempt to control for common method bias, in the questionnaire and during data collection, the study assured respondents of complete confidentiality and anonymity. This reassurance allows respondents to feel confident and to be honest when answering the questions (Podsakoff et al., 2003). Besides, the measurement items were carefully constructed through the back translation process and pilot test to avoid item ambiguity and complexity to allow for comprehension of the questions (Podsakoff et al., 2003). In addition to procedural controls, this study checked for the presence of common method variance with variance inflation factor (VIF). The inner VIF ranged from 1.066 to 1.995 (under the threshold of 3.3), suggesting that there exists no common method bias (Hair et al., 2019). Outer VIF values ranged from 1.433 to 2.422, indicating that multi-collinearity issues did not affect this analysis (Hair et al., 2019).

### **Results**

The Cronbach's alpha of all of the constructs ranges from .713 to .884, suggesting adequate reliability for the measures. Composite reliability of the constructs was also tested, and the results in Table 1 show that except for relationship marketing orientation with a value of .50, all of the measures have the composite reliability values of above .70. These obtained results demonstrate sufficient convergent validity for the constructs' measures. Then, the validity of the measures was re-tested with Confirmatory Factor Analysis in Amos. Except for four items of customer citizenship behaviour and two items of customer participation behaviour, all of the measuring items of the study's constructs have loadings of above .50, and so confirming adequate convergent validity for all of the measures of the constructs. The study also tested the heterotrait-monotrait (HTMT) ratio of the correlations to check the discriminant validity of the study's scales. The obtained HTMT values ranged from .126 to .561, suggesting adequate discriminant validity for the constructs (Hair et al., 2019).

Then, structure equation modelling was carried out for testing the direct relationships amongst the constructs. The model of six factors yields an acceptable fit with the fit indices of  $\chi^2$  is 916.807;  $df = 548$ ;  $\chi^2/df = 1.673$ ; CFI = .867; IFI = .869; TLI = .855; RMSEA = .059. Two alternative models with the addition of the link between customerization capability and service capability and vice versa were tested, and the fit indices are not as good as the indices generated for the initially proposed model. This suggests that the proposed model has a better fit with the empirical data. The results in Table 2 show that both customer citizenship behaviour and customer participation behaviour are significantly relevant to customerization capability with the coefficients of .258 ( $p < .01$ ) and .312 ( $p < .01$ ), respectively. Similarly, customer citizenship behaviour and customer participation behaviour are positively related to service capability, with the effect coefficients of .195 ( $p < .05$ ) and .412 ( $p < .001$ ) respectively. As such, customer participation

**Table 1.** Correlational matrix.

Variables	Mean	STD. Devia	C. R.	1	2	3	4	5	6	7	8
1. Customer citizenship behaviour	3.54	.638	.869	.884							
2. Customer participation behaviour	3.63	.577	.849	.244**	.857						
3. Customerization capability	3.65	.655	.849	.282**	.247**	.850					
4. Service capability	3.72	.726	.878	.251**	.292**	.219**	.878				
5. Outcome value	3.77	.823	.778	.272**	.389**	.289**	.203**	.777			
6. Process value	3.67	.858	.871	.495**	.272**	.148**	.235**	.157*	.871		
7. Relationship marketing orientation	3.84	.267	.504	.295**	.240**	.297**	.225**	.100	.231**	.713	
8. Level of technologization	.95	.541	1.000	.087	-.023	.118	.117	.255**	.171*	.019	1.000

N = 194; The numbers in diagonal are the Cronbach's  $\alpha$  reliability coefficients, \*\*p < .01; \*p < .05

behaviour is more strongly relevant to service capability and customerization capability. These results supported Hypothesis 1 and Hypothesis 2.

The results also show the significant effect of the customerization capability of enterprises on perceived outcome value ( $\beta = .372$ ;  $p < .001$ ) but not on perceived process value ( $\beta = .202$ ;  $p > .05$ ). As a result, hypothesis 3 is partially supported. In contrast, service capability is significantly associated with both outcome value ( $\beta = .184$ ;  $p < .05$ ) and process value ( $\beta = .286$ ;  $p < .01$ ). Hence, hypothesis 4 is supported.

To test the moderating effects of relationship marketing orientation and the level of technologization, the study used structural equation modelling in Amos. The interaction terms were formed by mean centred values. The results show that relationship marketing orientation is a significant moderator in the relationship between customer citizenship behaviour and the service capability of enterprises ( $\beta = 1.819$ ;  $p < .001$ ). In contrast, relationship marketing orientation does not significantly moderate the effect of customer citizenship behaviour on customerization capability. Therefore, hypothesis 7 is partially supported.

**Table 2.** Estimates from structural models.

Direct effects	Coefficients	T-values	Outcomes
<b>Paths</b>			
Customer citizenship behaviour → Customerization capability (H1a)	.258**	2.990	supported
Customer citizenship behaviour → Service capability (H1b)	.195*	2.049	supported
Customer participation behaviour → Customerization capability (H2a)	.312**	3.042	supported
Customer participation behaviour → Service capability (H2b)	.412***	4.440	supported
Customerization capability → Outcome value (H3a)	.372***	3.428	supported
Customerization capability → Process value (H3b)	.202 n.s.	1.799	unsupported
Service capability → Outcome value (H4a)	.184*	2.255	supported
Service capability → Process value (H4b)	.286**	3.041	supported
<b>Moderating effects</b>			
Customer citizenship behaviour * relationship marketing orientation → Customerization capability (H7a)	-.415 n.s.	1.836	unsupported
Customer citizenship behaviour * relationship marketing orientation → Service capability (H7b)	.299***	4.307	supported
Customer participation behaviour * level of technologization → Customerization capability (H8a)	.290 n.s.	1.304	unsupported
Customer participation behaviour * level of technologization → Service capability (H8b)	-.146 n.s.	.687	unsupported

$\chi^2$  is 916.807;  $df = 548$ ;  $\chi^2/df = 1.673$ ; CFI = .867; IFI = .869; TLI = .855; RMSEA = .059.

\*\*p < .01; \*\*\*p < .001.

**Table 3.** Estimates from bootstrapping tests.

Mediating effects	Coefficients		Type of mediation
	Indirect	Direct	
Customer citizenship behaviour → customerization capability → Outcome value (H5a)	.099**	.394***	Partial mediation
Customer citizenship behaviour → Customerization capability → Process value (H5b)	.006 <sup>n.s.</sup>	.709***	No mediation
Customer participation behaviour → customerization capability → Outcome value (H5c)	.080*	.470***	Partial mediation
Customer participation behaviour → Customerization capability → Process value (H5d)	.044 <sup>n.s.</sup>	.399*	No mediation
Customer citizenship behaviour → Service capability → Outcome value (H6a)	.045*	.394***	Partial mediation
Customer citizenship behaviour → Service capability → Process value (H6b)	.045 <sup>n.s.</sup>	.709***	No mediation
Customer participation behaviour → Service capability → Outcome value (H6c)	.044 <sup>n.s.</sup>	.470***	No mediation
Customer participation behaviour → Service capability → Process value (H6d)	.097*	.399*	Partial mediation

\*\*p < .01; \*\*\*p < .001

Interestingly, the level of technologization of the service firms does not serve as a significant moderator for the effect of customer citizenship behaviour as well as customer participation behaviour on service capability. Accordingly, hypothesis 8 is rejected.

To test the mediating effects of customerization capability and service capability in the relationships between customer value co-creation behaviour and customer perceived value, the study performed bootstrapping tests in Amos with the bootstrap sample of 5,000. The results in Table 3 suggest that customerization capability is a significant partial mediator between customer citizenship behaviour ( $\beta = .099$ ;  $p < .01$ ), customer participation behaviour ( $\beta = .080$ ;  $p < .05$ ) and outcome value, but not process value. Service capability serves as a significant partial mediator in the relationship between customer citizenship behaviour and customer outcome value ( $\beta = .045$ ;  $p < .05$ ) and between customer participation behaviour and process value ( $\beta = .097$ ;  $p < .05$ ). In this way, Hypothesis 5 and Hypothesis 6 are partially supported.

## Discussion

The findings show that customer value co-creation behaviour, including customer citizenship behaviour and customer participation behaviour, are significantly related to both the customerization capability and service capability of service firms. Interestingly, customer citizenship behaviour is more strongly associated with customerization capability while customer participation behaviour is more strongly relevant to service capability. This suggests that voluntary activities beyond required roles and duties by customers help firms to better attune to customers' personal needs and wants. This may be because service firms pay considerable attention to the actions of customers and make efforts in responding to every move or reaction of customers. In the meantime, customer active participation in service situations is influential to a firm's capability to provide services. The reason can be that the active participation of customers in the service provision process or in service contexts may prompt service firms to be active in responding to or providing services to customers. The study's findings are in line with prior studies' conceptual proposition that customers' involvement in value co-creation is

advantageous to firms such that firms can have a better understanding of customers' needs and wants (Pine et al., 1995), and so improving the service quality provided to customers. Importantly, the firm's focus on co-creation with customers is a good strategy to gain new competences, hence creating a more competitive advantage (Zhang & Chen, 2008). Attending to customer value co-creation enables firms to increase collaboration and precisely target customer groups (Whileley & Hessian, 1996). This is also in compliance with the recognition by Prahalad and Ramaswamy (2004) that the customer as value co-creator is a new source of competitive advantage. Nevertheless, by exploring the differential effects of specific types of customer value co-creation behaviour and their linkages with the specific capabilities of service firms, the present study broadens the existing breadth of knowledge, particularly the literature on value co-creation.

The study confirmed the significant mediating role of customerization capability as well as the service capability of service firms in the relationship between customer value co-creation behaviour and customer perceived value. These findings contributed to validating the acknowledged pivotal roles of customerization capability and service capability that have been widely recognised by marketing practitioners or service companies (Lai, 2004), but merely conceptually proposed by academics. The results contributively affirmed the necessity for service firms to orient to both customers' needs (i.e. customer orientation) and services (i.e. service orientation). By attending to the customerization capability and service capability of service firms, the study not only raises the awareness of the new capabilities of service firms, apart from traditional capabilities as prior research identified (Zhang et al., 2011), but also reflects the foci of service firms with customer-driven approach and/or service-driven approach (Lai, 2004; Russo-Spena & Mele, 2012). Interestingly, while both customerization capability and service capability are significant mechanisms for customer perceived value, the value of Cronbach's alpha, composite reliability, and the results of model fit generated from structural models with the added linkages of these two variables suggest that the two mechanisms are significantly different. These results contributively confirm that service firms can either focus on customer-driven practices or orient to service-driven practices, or attend to both of the foci. With each approach, the operational practices can be different. As SDL has been used for grounding the mechanisms of customerization capability and service capability, the empirical confirmation of the effects accentuates the theory as an appropriate one for explicating the relations among customer value co-creation, the capabilities of a firm, and the resultant value for customers. This empirical evidence also contributes to cross-culturally validate the suitability of the SDL to study of value co-creation as Vietnamese context is different from Western contexts (Ngugi et al., 2010; Oh & Teo, 2010).

The study also found relationship marketing orientation to have a significant moderating role in the relationship between customer participation behaviour and customerization capability. This finding highlighted the vitality of relationship marketing orientation for service firms – the approach that is currently applied by many firms in a tensely competitive economy (Sin et al., 2005). Clearly, customer participation behaviour in service situations may be conducive to the customerization capability of service firms, and the effect will be more robust in the context where service firms also have a pursuit of relationship marketing or make a tireless effort to create and maintain relationships with customers. It can be inferred that by focusing on developing and strengthening relationships with customers, service firms have more knowledge about customers' personal needs and wants, and so calibratetheir capability of meeting customers' requirements (Pine et al., 1995). Interestingly, the level of

technologization does not serve as a significant moderator for the impact of customer value co-creation behaviour on the customerization and service capabilities of service firms. This finding is contrary to the proposition by Tzokas et al. (2015) to which the adoption of advanced technological devices for operation of business – high level of technologization – is deemed effective for enhancing the capabilities of firms. The difference of this study's finding can be attributed to two reasons. First, the contexts in which the study carried out sampling were largely regarded to have high level of technologization. Most of the service firms that were sampled did not require highly advanced technologies for service delivery, so respondents tended to be satisfied or comfortable with the level of technologization. Second, the measure of level of technologization was a nominal measure with only two entities that may be rather general for respondents to evaluate. As a suggestion, more work should be done with a more precise measure of level of technologization for a validation of the effect. Remarkably, with the inclusion of customerization capability, service capability, and level of technologization to evaluate the phenomenon of customer involvement in value co-creation, the study shows an integration of three prominent perspectives that have been well-recognised but separately studied in prior studies: technology-driven perspective, customer-driven perspective, and service-driven perspective (Russo-Spena and Mele, 2012).

Though the fit indices of the hypothesised model are better than those of alternative models, they are still at an acceptable level, rather than at a good level. The reasons for the modest model fit with the empirical data may be due to the small sample size. Moreover, though most of the hypotheses proposed in the study are confirmed, the magnitudes of the effects are still modest. This is due to the study's selected sample of respondents of branded services in the big cities of Vietnam who are likely knowledgeable about services. The magnitudes of the effects of the study may be higher than those of other contexts such as less developed contexts, like in the countryside or in small cities of Vietnam, or in countries with a less-developed economy than Vietnam's. Also, these magnitudes will be higher than those of less developed service sector such as repairing services or the like.

## Conclusion

### *Theoretical implications*

The study has five main theoretical implications. First and foremost, this is a very early study to attend to the chain effects of customer specific value co-creation behaviour, the capabilities of service firms, and resultant customer perceived outcomes. Compared with existing studies of the same topic, the present study offers a meaningful extension in two ways. It has specified customer behavioural contributions in the value co-creation process instead of evaluating customer value co-creation as a global construct (Zhang & Chen, 2008). Besides, rather than evaluating the direct links of value co-creation activities to the capabilities of enterprises like prior research has done (Zhang & Chen, 2008), the present study examined the capabilities of enterprises as mechanisms for specific customer perceived value. The study's aim may open up a fertile research ground for future research to channel attention to the chain effect of customer value co-creation behaviour on the enhancement of the capabilities of firms which then are influential to value generation. For instance, future research may examine the influence of customer involvement in value co-creation on other types of specific capabilities of firms like

pricing capability, product development capability, communication capability, distribution capability, and technological capability (Vicente et al., 2015) and, ultimately, differential values for both firms and customers. Second, this study is a pioneering study as it evaluates the mediating role of customerization capability and service capability in service firms while these capabilities have been identified as crucial, prominent capabilities for the development of service companies (Zhang et al., 2011). Prior studies have presented these capabilities as a new set of capabilities that firms should pay attention to for achieving competitive advantage (Zhang & Chen, 2008; Zhang et al., 2011). In the meantime, a focus on service and a focus on customers as reflected through these two capabilities have been differentially pursued by firms (Lai, 2004; Russo-Spena & Mele, 2012). This study suggests two paths for transmitting customers' involvement in value co-creation into resultant value. The enlightening results of the study may prompt future research to include these mechanisms for interpreting the creation of value in service firms when exploring other phenomena of customer value co-creation in service firms, such as customers' value co-creation in online environments where they are increasingly demanding a high service quality and level of customisation to their needs and wants (Moon & Armstrong, 2020). This will be a timely response to the call for the study of new mechanisms of value co-creation when both the firm and customers initiate new ways to support each other for creating value (Saarijärvi, 2012).

Third, this study is advancing research by assessing the moderating role of the level of technologization of a service encounter and the level of relationship marketing orientation of service firms – the two characteristics pursued by most service firms in the present economy, and viably shaped by the contemporary business era with the intervention of technology 4.0 and the tense competition amongst enterprises (Ramaswamy & Ozcan, 2016; Sin et al., 2005). Following the current study's aim, future research may consider the impacts of these two factors when studying the performance of firms in a variety of sectors, like the service sector or the retail industry. Fourth, the study offers a meaningful extension to the literature of value co-creation with the empirical evidence of Vietnamese context – an Asian frontier economy that has recently received significant attention from enterprises and investors around the world. The addition of the Vietnamese context is interesting as the economy possesses vastly different characteristics compared to Western developed economies that have been popularly studied by prior value co-creation research, for example, the UK (Ngugi et al., 2010) or US (Oh & Teo, 2010). Last but not least, with the data collected from dyadic interaction between the customer and service provider of service firms, the study provides an interesting insight into the phenomenon of the co-creation of value from customers while there exists limited empirical research of value co-creation, to date, with dyadic data of both customers and service providers.

### ***Managerial implications***

Based on the results, the study suggests that managers should be more strategic in order to take advantage of customer involvement in value creation for the development of appropriate capabilities so as to create desirable values for customers. First, managers should be aware that customers, undoubtedly, involve in creation of significant values for enterprises, and this should be taken into account when developing strategies for



companies. This means that companies should cleverly make use of customer integration in their development of strategies. For instance, in new product/service development and incremental innovations, companies should not disregard or underestimate the integration of customer value co-creation. Specially, for start-ups, from the initial stage of business operations, they may consider tactfully positioning their business in order to integrate customer value co-creation. This positioning not only allows the company to be oriented to customers in its business operation processes but also enables customers to willingly offer input as well as contributions to the company.

Second, customers' differential value co-creation behaviour is conducive to different types of capabilities of service firms, so managers should have caution in designing service contexts for triggering desired customer value co-creation behaviours. Through service interactions and the design of physical contexts, companies should let customers know that their value co-creation is appreciated because companies' support for customers significantly affects the degree of customers' involvement in value co-creation (Grissemann & Stokburger-Sauer, 2012). As customer citizenship behaviour is relevant to customerization capability while customer participation behaviour is associated with service capability, managers should create favourable conditions in service contexts so that customers perform more citizenship behaviours and participation behaviours. Managers can facilitate the exhibition of these behaviours of customers by creating a space for customers to have social interaction because social factors can be good for customers so that they can engage in citizenship behaviours (Daunt & Harris, 2012). Companies can also foster more customer participation behaviours by designing a service script that allows for or elicits customers' contributions to or involvement in the service delivery process. Moreover, it is also suggested that companies invite customers' participation by showing a keen recognition and appreciation for customers' provision of inputs. This can be done during smooth interaction with open, empathetic employees. Besides, companies can organise competitions or challenges to generate input from customers like competitions for ideas of new products, ideas for innovating the features of existing products/services. To maximise the effectiveness, companies need to implement a supportive reward system with both suitable financial rewards (e.g., bonuses, gift vouchers, etc.) and recognition for customers' contribution, for example, using certificates. With the advancement of the Internet of Things (IoT), companies should also organise such competitions and challenges on websites or forums on the Internet. Ideally, companies can activate a forum for customers to frequently interact and openly share their views.

Third, as the customerization capability and service capability of service firms are significant mechanisms for triggering customer desirable values, managers should stress the pivotal roles of these capabilities of firms to their employees so that they properly channel their efforts to these capabilities. As a suggestion, managers could address this through meetings and company events. Besides, companies should reflect their focus on these capabilities through rewards or incentive schemes so that staff who perform well in providing customised services to customers and/or making a significant contribution to the improvement of the services of company are properly recognised and rewarded. Fourth, the relationship marketing orientation of service firms is strongly relevant for catalysing the service capability of firms; hence, managers should also stress the necessity to attend to this. Finally, it is necessary to suitably train service employees so that they can

be skilful in inviting and managing customer involvement in value co-creation during the service encounter process and in the service contexts.

### ***Limitations and recommendations for future research directions***

The study has some main limitations. First, with a cross-sectional design, the study is restricted from inference for causality of the effects. Obviously, it is not clear whether the effects will be enhanced or mitigated over time. Ideally, future research should carry out a longitudinal design for more insight into causal effects. Second, while assessing the phenomenon in the service sector using a wide range of types of services with different characteristics and levels of involvement of customers, the study's sample size is quite modest despite meeting the criterion by Malhotra et al. (2006) for an exploratory study and the criterion of the ratio of 5:1 (the number of surveys above the number of measuring items in the survey) by Bentler and Chou (1987) for SEM. To yield a generalisability of the findings, it is suggested that future studies include a larger or more comprehensive sample size for testing the effects. Researchers may also use various samples (i.e. various industries, different contexts) for evaluating the robustness of the effects. In a Confucian and collectivist culture, such as that of Vietnam, customers may be more encouraged to engage in value co-creation behaviour due to the preferences for sharing and external orientation (Nguyen, 2011). These characteristics may hold for customers in other Asian contexts like Japan, South Korea, and China, which share the influences of Confucian and collectivist culture to some degree. Furthermore, as Vietnam shares certain characteristics of economic development (i.e. a developing economy), the development of the service sector, and technological advancement with Asian countries in the region like China and South Korea, the study's findings can be in part generalised to a similar cultural and economic context. Desirably, future research may validate the proposed model with cross-cultural samples, including ones deemed to be similar to the Vietnamese context, and vastly different contexts like Western economies. The study's third limitation lies in the usage of the measure of the level of technologization. While the level of technologization was evaluated with two levels, high and low, the results for testing the moderating influence of the level of technologization were not positive as predicted. Future research should consider using alternative measures of the level of technologization, with more specified or well-defined levels.

Remarkably, while customerization capability and service capability have been identified as the two significant mechanisms for customer perceived values, they can be potential mechanisms for other types of performances of value co-creation for firms like marketing performances, including customer loyalty, repurchase intention, word-of-mouth referrals, customer commitment, and switching costs (Luu et al., 2016). We suggest that future research evaluates the mediating roles of these capabilities in the study of customer value co-creation and performances of value co-creation. Furthermore, as there are various conceptualisations of customer value co-creation, future research may investigate different types of customer value co-creation activities for the value co-creation process. For example, Gebauer et al. (2010) presented five activities of co-creation, namely customer engagement, self-service, customer involvement, problem-solving, and co-design. Prospective research could exploit this categorisation and examine the relevance of each type of value co-creation activity for customerization capability and service

capability, which in turn are resultant to customer perceived values. Such an attempt may offer an insight into the dynamics of customer value co-creation.

In addition, while various performance measures can be used for evaluating the impact of value co-creation on the performance of firms, this study only focused on customer perceived value as the target measure for firms' performance. Though usage of this measure, as partially discussed, has certain advantages in comparison with others, an evaluation of the linkage between value co-creation and firms' performance looking at a wide range of performance measures, including the objective measures, will throw more light on the phenomenon. Hence, future research should delve more into the relationship with diverse measures of performance like accounting-based and market-based measures (Gentry & Shen, 2010). Alternatively, for a more comprehensive evaluation, studies may consider the relevance of the scorecard (Norton & Kaplan, 1992), and include performance measures for learning and growth, business processes, customers, and finances. Finally, this research is dedicated to value co-creation in B2C contexts, which can be different from B2B contexts where relational approach and customer orientation are specifically focused on. Therefore, future research may examine the relevance of the proposed model in B2B contexts, and compare these results with the findings in the present study.

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## Appendix

### Relationship marketing orientation (adapted from Sin et al. (2005))

1. We both try very hard to establish a long-term relationship.
2. We work in close cooperation.
3. We keep in touch constantly.
4. We communicate and express our opinions to each other frequently.
5. We can show our discontent towards each other through communication.
6. We can communicate honestly.
7. We share the same worldview.
8. We share the same opinion about most things.
9. We share the same feelings towards things around us.
10. We share the same value.
11. We always see things from each other's point of view.
12. We know how much other feels.
13. We understand each other's values and goals.
14. We care about each other's feelings.
15. My company regards 'never forget a good turn' as our business motto.
16. We keep our promises to each other in any situation.
17. If our customers gave assistance when my company had difficulties, then I would repay their kindness.

18. They are trustworthy on important things.
19. My company trusts them.

### **Level of technologization (adapted from Verleye (2015))**

The level of availability of technological tools and devices used in the company

- a. Low
- b. High

### **Customerization capability (adapted from Zhang and Chen (2008))**

1. Precisely target customer groups
2. Provide exactly what customers want
3. Identify more market opportunities
4. Increase collaboration with customers
5. Clean organisational bureaucracy

### **Service capability (adapted from Zhang and Chen (2008))**

1. The capability to create a new service
2. The capability to provide a unique service experience
3. The capability to provide a multi-kind service
4. The capability to provide a value-adding service

### **Customer participation behaviour (adapted from Yi and Gong (2013))**

1. I have asked others for information on what this service offers.
2. I have searched for information on where this service is located.
3. I have paid attention to how others behave to use this service well.
4. I clearly explained what I wanted the employee to do.
5. I gave the employee proper information.
6. I provided necessary information so that the employee could perform his or her duties.
7. I answered all the employee's service-related questions.
8. I performed all the tasks that are required.
9. I adequately completed all the expected behaviours.
10. I fulfilled responsibilities to the business.
11. I followed the employee's directives or orders.
12. I was friendly to the employee.
13. I was kind to the employee.
14. I was polite to the employee.
15. I was courteous to the employee.
16. I didn't act rudely towards the employee.

### **Customer citizenship behaviour (adapted from Yi and Gong (2013))**

1. If I have a useful idea on how to improve service, I let the employee know.
2. When I receive good service from the employee, I comment about it.
3. When I experience a problem, I let the employee know about it.
4. I said positive things about this store and the employee to others.
5. I recommended this store and the employee to others.
6. I encouraged friends and relatives to use this store.
7. I assist other customers if they need my help.
8. I help other customers if they seem to have problems.
9. I teach other customers to use the service correctly.
10. I give advice to other customers.
11. If service is not delivered as expected, I would be willing to put up with it.
12. If the employee makes a mistake during service delivery, I would be willing to be patient.
13. If I have to wait longer than I normally expected to receive the service, I would be willing to adapt.

**Outcome value (adapted from Luu et al. (2016))**

1. The benefits we receive from the store are good.
2. The service we receive from the store is reasonable.

**Process value (adapted from Luu et al. (2016))**

1. The store gives us a positive experience during the time we use their service.
2. We have an enjoying time during the time we use the service.
3. We have a happy time during the time we use the service.