

Exploring service employees' involvement in value co-creation: dimensions, antecedents and consequences

Hangjun Xu

Department of Marketing, Union University, Jackson, Tennessee, USA, and

Chuanyi Tang and Lin Guo

Department of Marketing, Old Dominion University, Norfolk, Virginia, USA

Abstract

Purpose – Although customer co-creation has received a significant amount of attention in both practice and academics, most of the previous studies have been conducted from the customer perspective while how service employees are involved in the customer value co-creation process has been rarely examined. To fill in this gap, the purpose of this paper is to develop a scale of employee involvement in customer value co-creation, and test a theoretical model that investigates the antecedents and consequences of employee involvement in customer value co-creation.

Design/methodology/approach – Based on a comprehensive literature review and 12 in-depth interviews with service employees, a scale of employee involvement in customer value co-creation was developed in Study 1. The items were purified, and the construct validity and reliability were evaluated via a survey ($n = 178$). In Study 2, the newly developed scale was cross-validated in a new service context and a conceptual model was tested by estimating a structural equation model with survey data collected from service employees ($n = 225$).

Findings – The newly developed scale of employee involvement in customer value co-creation has demonstrated sufficient construct validity and reliability across different service contexts. Moreover, the results show that both customer orientation and perceived organizational support are positively associated with employee involvement in customer value co-creation, which, in turn, influences employees' job satisfaction and job stress. In addition, firm cross-functional cooperation strengthens the relationships between perceived organizational support and employee involvement in customer value co-creation.

Research limitations/implications – Future research from other service contexts and countries is needed to confirm the generalizability of the new scale and the findings.

Practical implications – The findings of the study will provide implications to service managers regarding where to focus their organizational resources and how to facilitate employee involvement in customer value co-creation.

Originality/value – This study takes an initial step to develop a scale of employee involvement in customer value co-creation and test the antecedents and consequences of employee involvement in customer value co-creation.

Keywords Cross-functional cooperation, Customer orientation, Employee involvement in customer value co-creation, Job satisfaction, Job stress, Service employees

Paper type Research paper

1. Introduction

In the past two decades, value co-creation has been receiving great attention in both academia and practice (Blut *et al.*, 2020; Chan *et al.*, 2010; Menguc *et al.*, 2020; Ranjan and Read, 2016). It was ranked as a high-priority research topic by the Marketing Science Institute (MSI, 2014–2016 and 2020–2022 Research Priorities). In the real business world, more and more companies have been developing useful strategies to facilitate value co-creation. In financial services, companies such as Edward Jones have been giving their customers access to their proprietary tools of data aggregation and portfolio rebalancing.

While customers are interacting with these tools to think through their decisions, financial advisors of Edward Jones can gain insights into their customers' decision-making styles and learn about their financial priorities. In doing so, the company enables its employees to serve more as service facilitators who empower and guide clients' participation in their own financial planning process rather than as simply service providers (Edward, 2019). Besides financial services, employees' facilitation in customer service participation is critical in many other service programs, such as health care, professional training and legal services.

The importance of service employees in involving customers into value co-creation and facilitating the value co-creation between the service organization and customers has been increasingly recognized in the service marketing literature (Chan and Wan, 2012; Chan *et al.*, 2010; Choi and Lawry, 2020;

The current issue and full text archive of this journal is available on Emerald Insight at: <https://www.emerald.com/insight/0887-6045.htm>



Journal of Services Marketing
37/5 (2023) 650–670
© Emerald Publishing Limited [ISSN 0887-6045]
[DOI 10.1108/JSM-08-2022-0277]

Received 25 August 2022
Revised 10 January 2023
Accepted 20 February 2023

Liao and Subramony, 2008; Menguc *et al.*, 2020). With the transformation of service encounters by complex service systems, the role of service employees has expanded from simply delivering a service to more complicated roles: acting as enablers, employees help both customers and technology to perform their respective service encounter roles; acting as innovators, employees serve as a source of innovation and creativity; acting as coordinators, employees coordinate the activities and interactions of multiple actors in the service system, and acting as differentiators, employees differentiate the service from its competitors (Bowen, 2016; Larivière *et al.*, 2017). Most of these roles are closely related to employee involvement in value co-creation. For example, when employees provide information and resources to customers to allow them to perform their co-creator roles, they act as enablers. When employees coordinate customers' activities and their interactions with other service actors to facilitate value co-creation, they act as coordinators.

When these roles are encouraged, supported and clearly defined by the organization, employees will be motivated to participate in value co-creation and actively coordinate and facilitate the co-creation process. In contrast, without appropriate organizational support and training, employees will be less active and effective in value co-creation. Furthermore, when they have to deviate from their initial service scripts and cope with customers' increased collaborative behaviors, service employees may experience stress and burnout due to heightened role conflict and role ambiguity (Chan *et al.*, 2010), the lack of self-efficacy and other-efficacy (Yim *et al.*, 2012), engagement in surface acting (Choi and Lawry, 2020) and varying levels of customer participation among customers (Menguc *et al.*, 2020). This, in turn, leads to reduced employee performance and poor customer service outcomes (Blut *et al.*, 2020). In summary, it is imperative to answer the question:

Q1. What are the evolving roles that service employees play in value co-creation and how organizations can support and engage employees in value co-creation?

Most of the previous studies on the value co-creation among organizations, employees, and customers largely focused on either the organization's (Fang, 2008; Goyal *et al.*, 2020) or the customer's involvement (Bendapudi and Leone, 2003; Blut *et al.*, 2020; Chan and Wan, 2012; Chan *et al.*, 2010) in value co-creation. There is a paucity of research examining how employees are involved in the value co-creation process. Particularly, in what ways service companies can support and train employees to effectively integrate customers into the service process and facilitate the value co-creation between the service organization and customers remains unclear. The interactions between the customers and service employees in value co-creation are not well understood.

To fill in the above gaps, this study is set to focus on service employees' roles in value co-creation, examine how service employees are involved in value co-creation and explore what are the organizational factors that influence employee involvement in value co-creation. Following the value co-creation conceptualization developed by Ranjan and Read (2016), we define employee involvement in value co-creation as employees' participation in the value co-creation process, including both required and voluntary behaviors that facilitate

customers' value co-creation. To obtain our research objectives, we first developed a scale of employee involvement in value co-creation and identified the ways in which service employees involve their customers in value co-creation and facilitate the process. Based on the job demands-resources model (JD-R model) (Bakker and Demerouti, 2007; Demerouti *et al.*, 2001), we then developed and tested a theoretical framework to explain the major antecedents and outcomes of employee involvement in value co-creation.

This study contributes to service marketing research and practice in several important ways. First, diverting from the dominant research on value co-creation emphasizing customers' co-creation behaviors, we focus on the role of service employees. As service encounters are transformed by the complex service systems, the role of service employees has increasingly evolved from simply delivering a service to more complicated roles, such as service enabler and coordinator (Bowen, 2016; Larivière *et al.*, 2017). Without appropriate organizational support and training, service employees will experience stress and role demand when faced with increasing customer participation, which may reduce the value of customer co-creation and result in poor service outcomes. Thus, understanding service employees' role in value co-creation is critical. Second, we develop a scale of employee involvement in value co-creation. To the best of our knowledge, this is the first scale to capture employees' involvement in value co-creation in the service marketing literature. It will shed new light on how service employees fulfill their new role expectations as facilitators of value co-creation. Third, by examining the antecedents and consequences of employee involvement in value co-creation, this study provides service managers with guidance regarding where to allocate organizational resources and how to facilitate employee involvement in value co-creation. For example, our results suggest that an organization should not only focus on providing support and customer-oriented culture to its employees but also encourage collaborations among different functional areas. This is because cross-functional cooperation will help align the resources and strengthen the effect of the support that an organization provides to its employees.

2. Literature review and research gaps

Vargo and Lusch (2004) suggested that "the customer is always a co-creator," which is one of the axioms of service-dominant logic. Given the importance of the customer co-creation, co-creation behavior from the customer perspective has been well-established in the management/marketing literature (Bendapudi and Leone, 2003; Blut *et al.*, 2020; Chan *et al.*, 2010; Dong and Sivakumar, 2017; Fang, 2008; Menguc *et al.*, 2020; Ranjan and Read, 2016). Numerous research examines how customer co-creation positively influences firm performance. The improvement in firm performance arises from various sources: customers as partial employees of the firm leading to cost-minimization (Roy *et al.*, 2020); greater repurchases and referrals (Kim *et al.*, 2020); better brand image and increase brand loyalty (Hajli *et al.*, 2017; Iglesias *et al.*, 2020); faster response to service failures (Dong *et al.*, 2008; Dong and Sivakumar, 2017; Kim and Baker, 2020); and improved customer satisfaction (Auh *et al.*, 2019;

Blut *et al.*, 2020). Previous studies also found that involving customers in value co-creation increases productivity and decreases costs (Prahalad and Ramaswamy, 2000, 2004).

It is, however, worth noting that the benefits of customer co-creation for a firm do not come without cost. Chowdhury *et al.* (2016, p. 97) explain that “a limited number of studies have touched upon the dark side” of customer co-creation. For example, some service organizations fail to educate their customers on how to effectively participate in the service system. As a result, these unknowledgeable customers may slow down the service process (Fang, 2008), leading them to feel less satisfied with the service. Customer co-creation can also cause unnecessary uncertainty for service organizations (Bitner *et al.*, 1997), and customers may become potential competitors to the sellers by gaining the necessary skills to create the offerings independently (Goyal *et al.*, 2020).

Several prior studies also explored the negative impact of customer co-creation on employees' job performance. Table 1 provides a summary of these studies. Chan *et al.* (2010) found that although customer participation strengthened relational bonds between customers and employees, it increased employees' job stress due to heightened role ambiguity, role conflict and work overload. Choi and Lawry (2020) argued that the impact of customer participation on employees' job stress is mediated by surface acting. To handle increased customer demand arising from customer participation, employees need to engage in surface acting, leading to job stress. Yim *et al.* (2012) found that customer participation has a positive effect on employee participation enjoyment only when both employee self-efficacy and employee other efficacy are high and the effect is negative when both employee self-efficacy and employee other-efficacy are low. Menguc *et al.* (2020) revealed that because customers participate in service co-creation in different ways and at different levels, employees may experience increased job demand and burnout. They also found that experienced employees with enriched knowledge structure, elaborate role scripts and adaptive service tactics can reduce the negative impact of variation of customer participation on their work performance.

These findings highlight the importance of building an efficacious workforce who can take up the new role of facilitators of value co-creation. To achieve the effectiveness of customer co-creation, employees must adapt to their new roles and job expectations to embrace customers' role as co-creators and be flexible and responsive to customers' requests and participation in the service process. Without training employees and supporting them to integrate customers into their daily operations, customer participation may lead to not only reduced employees' performance but also negative service outcomes for customers themselves (Blut *et al.*, 2020).

There are, however, limited studies addressing employees' role in the value co-creation process. Although there are some related constructs, such as employee engagement (Shuck and Wollard, 2010), organizational citizenship behaviors (Organ *et al.*, 2005; Williams and Anderson, 1991) and employees' customer orientation behaviors (Rafaeli *et al.*, 2008) that are similar to employee

involvement in value co-creation, these constructs focus mainly on employees' general required and/or voluntary behavior in performing their jobs and did not take into consideration the interactions between employees and their customers in the value co-creation process. In what ways companies can support and train employees to effectively integrate customers into the service process remains unclear.

Our research attempts to address the above research gaps and shed new light on employees' role in value co-creation and provide implications for managers on how to educate and support employees and help them adapt to their new roles in value co-creation. We first develop a scale of employee involvement in value co-creation to capture employee's new role expectations. We then build a theoretical model of employee involvement in value co-creation to examine its antecedents and consequences. We also explore how the cooperation from other functional units may moderate the relationship between organizational support/customer orientation and employees' involvement in value co-creation.

3. Study 1: employee involvement in value co-creation scale development

The purpose of Study 1 is to develop a scale of employee involvement in value co-creation. When developing the scale, the procedures proposed by Churchill (1979) and Anderson and Gerbing (1988) were followed. The first step was to generate the initial item pool and assess the content validity of the item. The initial items were generated from a comprehensive literature review and 12 in-depth interviews with service employees. By employing a sample of 178 employees, these items were purified, and the scale was validated. Finally, an eight-item, two-dimensional employee involvement in value co-creation scale was generated.

3.1 Item generation and purification

To generate the items for the employee involvement in value co-creation scale, we conducted a comprehensive literature review as well as in-depth interviews with 12 employees in a large port in the USA. Six employees were recruited from its customer service group; three employees were recruited from its sales department and three employees were recruited from its operations department. These employees represented a diverse range of work experience, tenure, customer type served, customer contact frequency and customer contact mode, all of whom mainly deal with business clients, such as ship lines, truck-lines and forwarders/brokers. All interviews took place at a conference room of the US port and each interview took about an hour (Please see Appendix 1 for interview questions). To generate the items from the interviews, we first transcribed all interviews recorded. The transcribed data were then coded and analyzed, which allows themes and items to emerge from the data. The initial pool of 18 items generated from both the interviews and literature review were then reviewed and evaluated by a panel of six marketing scholars who are familiar with this research topic for content validity.

Table 1 Selected studies on employees' perspective of value co-creation

Source	Context and data	Relevant empirical findings for employees' perspective of value co-creation
Hsieh <i>et al.</i> (2004)	293 customer-contact employees at 64 restaurants in Taiwan, China	<ul style="list-style-type: none"> Customer participation (CP) is positively related to role conflict CP increases the level of job stress
Chan <i>et al.</i> (2010)	349 pairs of customers and service employees of a global financial institution from two national groups (Hong Kong and the USA)	<ul style="list-style-type: none"> CP enhances customers' economic value and strengthens the relational bond between customers and employees CP also increases employees' job stress and hampers their job satisfaction
Yim <i>et al.</i> (2012)	223 pairs of customers and service employees of a multinational bank from Hong Kong	<ul style="list-style-type: none"> Employee participation enjoyment, in addition to job stress and relational value, fully mediates the effect of CP on employee job satisfaction CP has a positive effect on employee participation enjoyment when both employee self-efficacy (SE) and employee other efficacy (OE) are high; however, it has a negative effect when both employee SE and employee OE are low CP has a positive effect on employee participation enjoyment when employees have high employee SE and low employee OE
Chen <i>et al.</i> (2015)	166 pairs of customers and service employees of financial insurance services industry	<ul style="list-style-type: none"> CP produces positive effects on employees' job satisfaction only if such participation minimizes job stress and meets employees' relational needs
Chou <i>et al.</i> (2018)	282 frontline service employees (including tour guides, sales representatives, and service personnel) in Taiwan, China	<ul style="list-style-type: none"> Human capital and customer capital were found to positively affect frontline service employee innovative behavior The interactions between consumer value co-creation and human and customer capital had a significant moderating effect on frontline service employee innovative behavior
Li and Hsu (2018)	514 frontline employees or entry-level managers in 25 well-known restaurants (including 14 hotels and 11 freestanding restaurants) in Beijing, China	<ul style="list-style-type: none"> Customers' information and emotional participation in services significantly influence the innovative behavior of employees A high level of interpersonal trust between customers and employees may increase employee innovative behaviors Affective trust mediates the relationship between customer information or emotional participation and employee innovative behavior
Yoo <i>et al.</i> (2020)	518 service employees in the South Korean banking and insurance industries	<ul style="list-style-type: none"> Perceived customer participation (PCP) has a significant inverted U-shape effect on work engagement Customer orientation (CO) and service employee perceived fit with customers (PCF) moderate the inverted U-shaped relationship between service employee PCP and work engagement
Boadi <i>et al.</i> (2020)	528 intersect customer-subordinate employees in the Ghana hotel industry	<ul style="list-style-type: none"> There is a positive influence of customer participation in value co-creation (CPVC) on employee silence (ES) There is a significant negative effect of emotional intelligence (EI) on ES Also, there is an indirect effect of CPVC on ES through EI
Shulga and Busser (2020)	Scenario-based experiment with 720 participants	<ul style="list-style-type: none"> Co-created value was appraised significantly higher by employees and positively affected well-being, satisfaction, and competitive advantage for both employees and customers Co-created value served as a mediator between the four types of co-creation and outcomes only for customers
Menguc <i>et al.</i> (2020)	Study 1: 900 private bankers of 175 branches in Taiwan, China Study 2: 464 service employee surveys from 58 branches in Turkish firms	<ul style="list-style-type: none"> CP variation negatively influences customer service performance through greater customer-related burnout And this above mediation process is moderated by contingencies that mitigate or exacerbate the indirect relationship The moderating role of CP quality provides a more nuanced picture of the intricacies between CP variation and CP quality
Choi and Lawry (2020)	Study 1: 509 frontline service employees Study 2: Scenario-based experiment with 440 participants	<ul style="list-style-type: none"> Perceived CP increases job stress Surface acting mediates the link between CP and job stress, but deep acting does not The link between CP and job stress decreases as employee-customer identification (ECI) increases only during surface acting The impact of surface acting on job stress during CP is greater for hedonic services than utilitarian services

(continued)

Table 1

Source	Context and data	Relevant empirical findings for employees' perspective of value co-creation
Boadi <i>et al.</i> (2022)	422 frontline employee-customer data within luxury hotels in Ghana	<ul style="list-style-type: none"> Value co-creation has a negative effect on employee fear-based silence and workaholism The extent to which employee trust (TRS) in employee – hotel relationship buffered these effects
Our research	Study 1: 12 in-depth interviews and 178 service employees in the Chinese airport industry Study 2: 225 service employees in the Chinese Auto 4S industry	<ul style="list-style-type: none"> Employee involvement in value co-creation has two distinct dimensions: informative communication and service adaptation Both customer orientation and perceived organizational support are positively associated with employee involvement in value co-creation, which in turn influences employees' job satisfaction and job stress Firm cross-functional cooperation strengthens the relationships between perceived organizational support and employee involvement in value co-creation

Source: Authors own work

Among these 18 items, eight of them were adapted from previous literature (Rafaelli *et al.*, 2008; Yi and Gong, 2013) and ten were generated from the in-depth interviews (Please see Appendix 2 for the 18 items). The panels were given the definition of employee involvement in value co-creation and were asked to identify: (1) any incompatibility between an item and the construct it is supposed to measure; and (2) any ambiguity in the wording of the items. After the evaluation, 15 items were retained.

Because all measures were originally in English, we followed the back-translation procedure recommended by Brislin (1980). Two Chinese-based bilingual researchers independently translated the items from English into Chinese, and then we discussed the wording of these items with professors and doctoral students from related fields. Two other bilingual speakers back-translated the Chinese items into English and checked whether the Chinese version was accurately transcribed from a literal English language translation. When disagreements occurred, we discussed them and then the items were revised again.

To purify the items and assess the reliability and validity of the construct, we conducted a survey with 298 employees in two international airports located in Southeastern China. Its human resource managers helped us recruit the participants for this research. To be qualified for the study, the respondents needed to have frequent interactions with their customers. All participants were assured the anonymity and confidentiality of their answers and asked to answer each question based on their real opinions. Finally, 178 useable surveys were collected, producing a response rate of 59.7% (see Table 2 for a sample description).

To purify the measures, we randomly divided the data into two halves to run exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) separately. An EFA with one-half of the subjects ($N = 89$) was conducted first to identify the underlying dimensions and purify the items. Items that had high cross-loadings above 0.40 on another dimension and items that loaded below 0.40 on their own dimensions were removed from the scale. Two

factors emerged in the analysis. These two factors had eigenvalues ranging from 1.17 to 4.59 and accounted for 71.90% of the variance. The results of this EFA are reported in Table 3.

Based on the overall value co-creation conceptualization developed by Ranjan and Read (2016), Factor 1 was labeled as informative communication (four items), which captures the extent to which employees provide information to meet customers' needs and communicate with customers on time to enable customers to perform their role as value co-creator. Factor 2 was labeled as service adaptation (four items). It captures the extent to which employees adapt the service to tailor to customers' needs in value co-creation. Service adaptation helps to coordinate the interactions between customers and service employees and other actors to facilitate the value co-creation process, which is beyond providing timely information to customers.

Theoretically, the two dimensions are consistent with the expanded roles of service employees (i.e. enablers and coordinators) in transformed service encounters as suggested by Bowen (2016) and Larivière *et al.* (2017). By providing information to customers, service employees will equip the customers with the necessary knowledge regarding what they need to do in the value co-creation process, which makes it possible for customers to perform their role as value co-creators. In this case, employees act as enablers. Moreover, based on their understanding of customers' needs, service employees may customize their interactions with customers and coordinate customers' participation among different tasks. They may direct their effort into problem-solving or invite them to provide feedback. In this case, employees act as coordinators. Prior literature on service employees' behaviors (e.g. customer orientation behaviors) (Rafaelli *et al.*, 2008) also suggest that employees need to be proactive in communication (e.g. anticipating customer requests and offering explanations) and provide customized support to customers (e.g. educating customers and offering personalized information). Thus, the findings from the literature lend support to the two dimensions that we identified in the study.

Table 2 Study 1 descriptive statistics of the sample ($N = 178$)

Sample characteristics	Frequency	%
Gender		
Male	71	39.9
Female	104	58.4
Other	3	1.7
Age		
<18	0	0
18–24	68	38.2
25–34	54	30.3
35–44	40	22.5
45–54	12	6.7
>55	4	2.3
Education		
<High school	2	1.1
High school diploma or GED	4	2.2
Some college, no degree	86	48.3
Bachelor's degree	78	43.8
Graduate degree	8	4.6
Department		
Security department	41	23.0
Ground handling department	66	37.1
IT and services department	26	14.6
Tickets reservation department	45	25.3

Source: Authors' own work

Our in-depth interviews with service employees also highlighted the importance of informative communication and service adaptation in value co-creation. During our interviews with the port customer service employees, they indicate that they receive many calls and emails from different customers such as ship-lines, brokers and truck drivers every day, with various questions and diverse requests. Oftentimes, they are asked to provide updated information regarding the vessels and cargos. In this case, informative communication is expected. At other times, the

port employees need to involve customers into problem-solving and service delivery processes. For example, when a broker or forwarder calls in to ask why their containers have not been released, the port employees may need to coordinate with the ship-lines to provide an answer. In this case, service adaptation is expected.

3.2 Scale validation

To validate the underlying structure obtained from the EFA, we used the rest of sample from the survey ($N = 89$) to conduct a CFA. An eight-item, two-factor model was confirmed. Inspection of model fit revealed a reasonable overall fit [$\chi^2(18) = 23.75, p < 0.01$; CFI = 0.99; TLI = 0.98; IFI = 0.99; GFI = 0.94; RMSEA = 0.06]. The eight items had standardized loadings ranging from 0.66 to 0.93 and hence were all retained. The results of this CFA are reported in the last column of Table 3.

We further evaluated the scale's convergent validity by examining the average variance extracted (AVE) for each dimension. Researchers suggest that an AVE value of 0.50 or higher provides support for sufficient convergent validity (Bagozzi and Yi, 1988; Fornell and Larcker, 1981). The AVEs for informative communication and service adaptation are 0.70 and 0.57, respectively, lending support to the convergent validity of the scale. Discriminant validity of the two dimensions was then tested through the approach suggested by Fornell and Larcker (1981). Specifically, discriminant validity between two factors is established when the individual AVE for each factor exceeds the squared correlation between two factors. In this case, the pair of these two dimensions passed the test, suggesting sufficient discriminant validity of the two dimensions. Overall, the eight-item, two-dimensional employee involvement in value co-creation scale appeared to be a valid and reliable scale.

4. Study 2: antecedents and consequences of employee involvement in value co-creation

The purpose of Study 2 is to investigate the antecedents and consequences of employee involvement in value co-creation.

Table 3 Study 1 employee involvement in value co-creation scale summary

Constructs and measures	Factor loading	
	EFA	CFA
Informative communication	Cronbach's $\alpha = 0.89$	AVE = 0.70 Cronbach's $\alpha = 0.90$
1. I always provide accurate information to customers	0.87	0.81
2. I communicate with customers in a timely manner	0.73	0.81
3. I provide necessary information to my customers so that they can perform their duties	0.89	0.89
4. I explain to customers what they need to do in order to effectively use the service	0.81	0.83
Service adaptation	Cronbach's $\alpha = 0.82$	AVE = 0.57 Cronbach's $\alpha = 0.84$
1. I involve customers into problem-solving	0.70	0.68
2. I encourage customers to participate in the service delivery process	0.82	0.93
3. I educate our customers how to use our information system, websites, and facilities	0.82	0.73
4. I actively collect the suggestions and feedback from my customers	0.75	0.66

Notes: AVE = average variance extracted; EFA = exploratory factor analysis; CFA = confirmatory factor analysis. Fit indices for CFA = $\chi^2(18) = 23.75, p < 0.01$; CFI = 0.99; TLI = 0.98; IFI = 0.99; GFI = 0.94; RMSEA = 0.06

Source: Authors' own work

Moreover, we use a larger sample to validate the scale developed in study 1. By adopting the JD-R model to the co-creation context, we examined the impact of organizational factors on employee involvement in value co-creation and the outcomes of employee involvement in value co-creation. A survey of 225 complete responses was employed to test the hypothesized framework.

4.1 Conceptual framework and hypotheses development

Given the boundary spanner nature of service jobs, service employee positions are demanding and stressful (Bakker and Demerouti, 2007; Edmondson and Boyer, 2013). Moreover, the constant customer interactions and high uncertainties involved in value co-creation make the service positions more challenging (Bowen, 2016; Larivière *et al.*, 2017). To cope with the high job demands, service employees need sufficient job resources to neutralize and buffer the negative effects of job demands and improve their work engagement (Bakker and Demerouti, 2007). Focusing on the balance between job resources and job demands, JD-R model (Bakker and Demerouti, 2007; Bakker *et al.*, 2003) is an appropriate theoretical framework to explain the underlying mechanism regarding how job demands and job resources influence service employees' involvement in value co-creation.

JD-R model assumes that every occupation has its risk factors that make the job stressful and the balance between job demands and resources influences organizational outcomes and employees' job performance. All working environmental factors can be classified into two general categories: job demands and job resources (Bakker and Demerouti, 2007). *Job resources* refer to "those physical, psychological, social, or organizational aspects of the job that are either/or: (a) functional in achieving work goals, (b) reduce job demands and the associated physiological and psychological costs, (c) stimulate personal growth, learning, and development" (Bakker and Demerouti, 2007, p. 312).

Job demands refer to "physical, psychological, social, or organizational aspects of the job that require sustained physical and/or psychological (cognitive and emotional) effort or skills and are therefore associated with certain physiological and/or psychological costs" (Bakker and Demerouti, 2007, p. 312). According to the JD-R model, to what extent service employees are motivated to be involved in value co-creation is determined by the balance of employees' job resources and job demands. As found in the value co-creation literature (Chan *et al.*, 2010; Yim *et al.*, 2012), customer value co-creation itself intensifies service employees' job demands (e.g. job stress and job strain). As a result, service employees may need more resources to be involved in the value co-creation process than in other tasks. With sufficient job resources, service employees are motivated to serve their customers and be highly involved in the value co-creation process, because such resources will help them achieve work goals, reduce job stress and stimulate personal growth, learning and development (Bakker and Demerouti, 2007). In contrast, job demands are associated with certain physiological or psychological

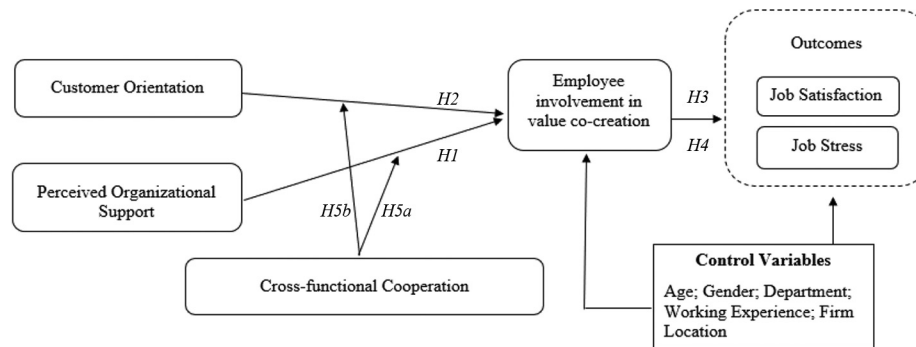
costs such as job strain and job stress (Bakker and Demerouti, 2007; Hockey, 1997).

In this study, we focus on three organizational-level job resources, including perceived organizational support, customer orientation and cross-functional cooperation. Those three sources capture different types of resources that an organization provides to motivate its service employees to take on their expected roles in value co-creation. Through organizational support, service employees obtain the tangible, mental and social resources needed for them to perform their roles as the enabler and coordinator in the value co-creation process. When a company is customer-oriented, the organizational climate will help facilitate the acquisition and assimilation of customer information, which will provide clear guidance to employees regarding how to meet customer needs and empower them in value co-creation. Cross-functional cooperation refers to the support and resource provided by other departments in the organization (Li and Calantone, 1998; Song *et al.*, 1997). Because the needs and requests from customers are often complicated and beyond the control of the customer service department, the collaborations and support from other departments are important for facilitating customer co-creation. They will help integrate and streamline the job resources service employees obtain from the organization. In other words, cross-functional cooperation will strengthen the effects of organizational support and customer orientation on service employees' involvement in value co-creation. For the outcomes of employee involvement in value co-creation, we focus on job stress and job satisfaction because they are important outcome variables in both JD-R research and customer co-creation research (Chan *et al.*, 2010; Yim *et al.*, 2012). According to the JD-R model, these outcomes are employees' job demands, both of which provide important implications for service providers. Our theoretical model is presented in Figure 1. In the sections below, we will further elaborate on how each job resource influences service employees' involvement in value co-creation as well as their job performance.

4.1.1 Perceived organizational support

Eisenberger *et al.* (1986) defined perceived organizational support (POS) as the "personified organization's readiness to reward increased work effort and to meet needs for praise and approval, employees develop global beliefs concerning the extent to which the organization values their contributions and cares about their well-being" (Eisenberger *et al.*, 1986, p. 501). POS captures an organization's commitment to its employees. Employees view organizational support as indicative of the organization's benevolent orientation toward them. High POS means employees believe they are being respected and appreciated by their organization and raises their morale at the workplace. In other words, POS works as job resources and exerts a positive effect on work performance. Moreover, from the social exchange perspective (Thibaut and Walker, 1978), the greater perceived organizational support will engender a sense of obligation for service employees to reciprocate with cooperative behaviors to fulfill their responsibilities and enhance the performance of

Figure 1 Theoretical framework



Source: Authors own work

the organization (Bettencourt, 1997; Shore and Wayne, 1993). As a result, service employees will be more likely to actively communicate with their customers and provide customized service to them. When perceiving strong organizational support, employees will likely have more social and emotional resources and means to overcome the barriers and constraints to enable and coordinate the value co-creation process. Thus, a higher level of perceived organization support motivates service employees to actively participate in the value co-creation process (Bagozzi, 1995; Bettencourt, 1997). Accordingly, we hypothesize:

H1. Perceived organizational support is positively related to employee involvement in value co-creation.

4.1.2 Customer orientation

Customer orientation (CO) is defined as “a set of beliefs that put the customer’s interests first, while not excluding those of all other stakeholders such as owners, managers, and employees, in order to develop a long-term profitable enterprise” (Deshpandé *et al.*, 1993, p. 27). A highly customer-oriented company will actively collect information about consumer needs and anticipate the changes in the marketplace. The abundance of customer information will enable service employees to learn how to respond to customers’ requests and satisfy their needs in the value co-creation process. Moreover, a highly customer-oriented company will likely assimilate customer information through internalization, which promotes the norms of maximizing customer value (Abbu and Gopalakrishna, 2021; Zeitz *et al.*, 1999). As a result of this internalization process, service employees may identify and become committed to the organization’s value of customer-orientation, which works as another important job resource to motivate employees to place higher importance on serving customers’ best interests and satisfying their needs (Terho *et al.*, 2015). In summary, we propose that customer orientation is a firm’s overall work value and norm that provides cultural and social-emotional resources to support employees’ engagement in customer co-creation. With the objective of maximizing customer value and satisfaction, service employees will utilize the customer information they

have to identify the best approach to facilitate customers’ role as value co-creation and maximize their value-in-use. Accordingly, we hypothesize:

H2. Customer orientation is positively related to employee involvement in value co-creation.

4.1.3 Job satisfaction

When employees fulfill their role as enablers and coordinators to facilitate the value co-creation process, customers are more likely to be cooperative and satisfied, which will, in turn, enhance employees’ job satisfaction. Through the co-creation process, service employees may not only gain relational benefits (Chan *et al.*, 2010) but also feel their jobs are enjoyable (Bitner *et al.*, 1997; Yim *et al.*, 2012). According to the JD-R model, the relational value and enjoyment generated in value co-creation are job resources that will lead to employee satisfaction. Previous literature found that employees who create harmonious and smooth interactions with customers experience greater job satisfaction (Chan *et al.*, 2010; Gremler and Gwinner, 2000). Employees would evaluate their job positively if they find serving and helping customers inherently enjoyable (Brown *et al.*, 2002). Consistently, the health-care literature indicates that enjoyable and open relationships with patients contribute to clinicians’ sense of appreciation and protect against frustration and burnout, which enhances their job satisfaction (Chan *et al.*, 2010). Therefore, we expect the following hypothesis:

H3. Employee involvement in value co-creation is positively related to employees’ job satisfaction.

4.1.4 Job stress

In the value co-creation process, employees may actively involve customers into the co-creation process by sharing information and responsibilities with them (Blut *et al.*, 2020; Chan *et al.*, 2010). According to the JD-R model, keeping customers involved and working as “partial employees” may provide important job resources for service employees in the value co-creation process, which in turn contributes to positive outcomes, such as decreased

employees' job stress (Verleye *et al.*, 2016). Specifically, employee involvement in value co-creation may relieve job stress through reduced role conflict, workload and role ambiguity.

When employees are highly involved in the value co-creation process, they will perform their role as enablers by providing timely and sufficient information to customers. In doing so, they equip customers with the necessary knowledge and skills to involve in value co-creation and allow them to effectively perform their role as "partial employees" and value co-creators (Bowen, 1986). As a result, customers may reduce the frequency of information requests and increase the chance of solving problems by themselves, which ultimately reduces service employees' workload and job stress. Moreover, highly involved service employees will also act as coordinators in value co-creation. Through frequent interaction with customers and collecting feedback from them, service employees might not only facilitate improving product and service offerings (Graf, 2007) but also better understand customers' needs and expectations (Verleye *et al.*, 2016; Wirtz *et al.*, 2010). By aligning product and service offerings with customer expectations and requirements and coordinating customers' co-creation activities, employees may have a clear understanding of their job duties and requirements in fulfilling their role as value co-creation facilitators (Zhou and Li, 2012), which ultimately leads to decreased job stress. Accordingly, we hypothesize:

H4. Employee involvement in value co-creation is negatively related to employee's job stress.

4.1.5 Cross-functional cooperation

As customers become the value co-creator, their needs and requests are often complex and beyond the control of the customer service department, service employees need not only the resources from their own department but also the cooperation and support from other functional departments within the organization. Thus, cross-function cooperation is a critical job resource for service employees. Cross-functional cooperation (COOP) is defined as the degree of collaboration, the extent of representation and the contribution of marketing, R&D, and other functional units to the business process (Li and Calantone, 1998; Song *et al.*, 1997). Both marketing and management literature have demonstrated the importance of cross-functional cooperation and integration in a variety of contexts (Homburg *et al.*, 1999; Luo *et al.*, 2006; Moorman and Rust, 1999).

In the context of value co-creation, the cooperation and collaboration between different departments allow customer information to be shared, discussed and analyzed in the relevant areas, which will help align organization resources with customer expectations and facilitate the transformation of organizational resources into customer value. We argue that perceived organizational support likely leads to high employee involvement in value co-creation when cross-functional cooperation is high. This is because cross-functional cooperation helps to develop and maintain a

cooperative climate in the organization which synergizes the resources and maximizes the effectiveness and efficiency of the organizational support provided to employees (Troy *et al.*, 2008).

We also suggest that a firm with a high level of customer orientation can effectively motivate employee involvement in value co-creation when cross-functional cooperation is high. When cross-functional cooperation is high, customer information is easily shared and analyzed by different departments and the importance of customer-oriented surface traits becomes more pronounced. This is because the collective knowledge generated across the various departments may synergize and maximize the utility of customer information in value co-creation. The fluent transfer of customer-based knowledge and culture among interdependent units can reduce uncertainty and ambiguity of resource and information flows (Galunic and Rodan, 1998) and promote employees to fulfill their role as enablers and coordinators in value co-creation. Thus, the impact of the organizational strategies on employee involvement in value co-creation should not be examined in isolation of the degree of interdependence and interactions among different departments within the organization (Song *et al.*, 1997). The efficient cross-functional cooperation can facilitate the implementation of organizational strategies and boost the effectiveness of organization's resources to employees in facilitating customer co-creation. Therefore, we expect the following hypotheses:

H5a. Cross-functional cooperation strengthens the relationship between perceived organizational support and employee involvement in value co-creation.

H5b. Cross-functional cooperation strengthens the relationship between customer orientation and employee involvement in value co-creation.

4.2 Data collection

To test the hypothesized framework, a self-administered online survey with service employees was conducted via WJX, an online survey platform in China. The survey was conducted with the employees of a major Auto 4S (Sale, Spare-part, Service and Survey) store chain in China, which has shops located in several major cities, including Shanghai, Beijing, Tianjin, Chongqing, Xi'an, Changchun, Zhengzhou, Harbin, Shenyang and Dalian. We first contacted the general manager of this franchised chain and explained the purpose of this research. After we received permission, one of the vice presidents helped us with the data collection.

A contact list of 1,200 employees was provided by the human resources department of the store chain. To be eligible for the study, the respondents were required to have at least some experience working with customers. An email link included the questionnaire was sent to all 1,200 contacts first. A random drawing for several gift card prizes was offered as an incentive for completing the survey. A total of 250 complete questionnaires were

collected and 25 incomplete surveys were removed, resulting in a response rate of 18.75% (see Table 4 for a sample description). Because the new scale of employee involvement in value co-creation is developed in the transportation service context (port and airport), we adopted the car dealers service to validate the generalizability of the scale. To check and address the heterogeneity in the research design, *t*-tests were conducted to compare the respondents between Study 1 and Study 2 with regard to the same variables in the model and found there were no significant differences for informative communication ($t = 0.46, p = 0.65$) and service adaptation ($t = 0.80, p = 0.43$).

Table 4 Study 2 descriptive statistics of the auto 4S sample ($N = 225$)

Sample characteristics	Frequency	%
Gender		
Male	170	75.6
Female	53	23.5
Other	2	0.9
Age		
<18	0	0
18–24	37	16.4
25–34	65	28.9
35–44	95	42.2
45–54	26	11.6
>55	2	0.9
Firm location		
Shanghai	17	7.6
Beijing	24	10.7
Tianjin	16	7.1
Chongqing	14	6.2
Xi'an	6	2.7
Changchun	57	25.3
Zhengzhou	14	6.2
Harbin	7	3.1
Shenyang	30	13.3
Dalian	40	17.8
Department		
Sales department	99	44.0
Spare-part and maintenance department	92	40.9
IT and services department	34	15.1
Working experience in this store chain (year)		
<1	15	6.7
1–3	110	48.9
4–6	95	42.2
>6	5	2.2
Education		
<High school	2	0.9
High school diploma or GED	48	21.3
Some college, no degree	115	51.1
Bachelor's degree	56	24.9
Graduate degree	4	1.8

Source: Authors' own work

4.3 Measures

The measures for our constructs are either developed from Study 1 or adapted from previous studies (see Table 6 for the measurement items). All of the items used in the survey were measured using a seven-point scale anchored by “strongly disagree” (1) and “strongly agree” (7). Because all existing measures were originally in English, we created a Chinese version for all measures following the commonly used back-translation procedure (Brislin, 1980).

We used the eight-item developed in Study 1 to measure employee involvement in value co-creation. We adapted three items from Eisenberger *et al.* (2001) to measure perceived organizational support. Cronbach's alpha for the scale was 0.84. We adapted four items from previous literature (Korschun *et al.*, 2014) to measure customer orientation. Cronbach's alpha for the scale was 0.84. We adapted six items from previous literature (Luo *et al.*, 2006; Strese *et al.*, 2016) to measure cross-functional cooperation. Cronbach's alpha for the scale was 0.93. We adapted two items from Janssen and Van Yperen (2004) to measure job satisfaction. Cronbach's alpha for the scale was 0.88. We adapted nine items from Chan *et al.* (2010) to measure job stress. Cronbach's alpha for the scale was 0.94. To rule out other potential alternative explanations that are not the focus of the study, we controlled for the variables of employee age, gender, department, employee working experience and firm location. The age variable was measured by asking all respondents to indicate their current age. The gender variable was measured by asking all respondents to indicate their gender (male = 1, female = 0). The department variable was measured by asking all respondents to indicate the department they were currently working in. The working experience variable was measured by the number of years they worked for the store chain. Finally, because our sample came from ten different cities in China, we created one firm location dummy variable to represent the store located in the north of China (coded as “1”) with the store located in the south of China as the benchmark (coded as “0”). Table 5 presents the descriptive statistics of all variables.

4.4 Employee involvement in value co-creation scale validation

As previously mentioned, one of the purposes of Study 2 was to verify the validity and reliability of employee involvement in value co-creation scale developed in Study 1 with a larger sample ($N = 225$). Hence, before testing the full measurement model and the conceptual model, we conducted another CFA to verify the scale of employee involvement in value co-creation. An eight-item, two-dimension model was estimated, and inspection of model fit revealed a reasonable overall fit [$\chi^2(18) = 22.80, p < 0.01$; CFI = 0.99; TLI = 0.99; IFI = 0.99; GFI = 0.98; RMSEA = 0.03]. The eight items showed standardized loadings ranging from 0.66 to 0.86, and the AVE for each dimension was 0.68 for informative communication and 0.56 for service adaptation, all exceeding the 0.50 threshold for sufficient convergent validity (Bagozzi and Yi, 1988; Fornell and Larcker, 1981). We further found that each of the AVEs

Table 5 Means, standard deviation and correlations

Variables	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12
1. Gender	0.24	0.43	–											
2. Age	29.83	7.12	–0.11*	–										
3. Firm location	0.22	0.41	0.06	0.11 [†]	–									
4. Department	2.26	0.70	–0.10	–0.01	–0.04	–								
5. Working experience	3.4	0.65	0.08	0.00	0.02	0.00	–							
6. Perceived organizational support	5.16	1.17	–0.10	–0.04	–0.07	0.00	–0.10	0.80						
7. Customer orientation	5.80	1.02	–0.05	0.08	0.02	–0.07	–0.06	0.54***	0.77					
8. Cross-functional cooperation	5.35	1.12	0.00	–0.05	–0.06	–0.05	–0.03	0.58***	0.47***	0.84				
9. Informative communication	5.71	0.92	0.00	–0.01	–0.05	–0.04	0.00	0.56***	0.61***	0.57***	0.80			
10. Service adaptation	5.58	1.00	–0.06	–0.10	0.00	–0.10	–0.03	0.58***	0.68***	0.46***	0.72***	0.80		
11. Job satisfaction	5.09	1.35	0.07	0.08	0.07	–0.04	–0.07	0.61***	0.48***	0.41***	0.46***	0.52***	0.88	
12. Job stress	3.81	1.31	0.07	0.03	0.05	–0.05	0.08	–0.19***	–0.20***	–0.30***	–0.23***	–0.18***	–0.24***	0.81

Notes: Sample size = 225. The numbers in the oblique line are the square roots of AVE; * $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$

Source: Authors' own work

for the two dimensions of employee involvement in value co-creation was larger than the squared correlations between the two dimensions, suggesting the discriminant validity of the factors (Fornell and Larcker, 1981). Finally, the Cronbach's alphas were 0.86 for informative communication and 0.81 for service adaptation, respectively, both exceeding the 0.70 threshold for acceptable reliability (Gerbing and Anderson, 1988).

4.5 Full measurement model

To test the hypothesized model, we first established the full measurement model by conducting a CFA on all latent constructs. The fit indexes [$\chi^2(435) = 759.37$, $p < 0.01$; CFI = 0.94; TLI = 0.93; IFI = 0.94; GFI = 0.93; RMSEA = 0.06] suggested that the measurement model fits the data well (Bentler and Bonett, 1980; Cheung and Rensvold, 2002). The results of the measurement model are presented in Table 5. According to the criterion suggested by Anderson and Gerbing (1988), the Cronbach's alpha for every factor was above 0.81, indicating that all constructs have acceptable reliability. Moreover, all of the factor loadings are above 0.66, indicating satisfactory convergent validity (Anderson and Gerbing, 1988). We also assessed each construct's validity based on composite reliability (CR) and AVE measure (Hair et al., 1998). Results (Table 5) show that all construct reliabilities and variance extracted measures were above the cutoff values of 0.70 and 0.50, respectively, demonstrating evidence of convergent validity (Hair et al., 1998). Table 5 shows that the AVE for each construct exceeded the squared correlation between the construct and all other constructs in the measurement model (Fornell and Larcker, 1981), suggesting sufficient discriminant validity. In sum, the measurement model demonstrated sufficient convergent validity and discriminant validity.

To assess the potential common method bias, in this study, we employed the marker variable approach, in which we adopted the marker variables that are theoretically unrelated to any other variables (Lindell and Whitney, 2001). In this study, a single-item scale for the marker variable was incorporated into the questionnaire to capture the level of competition. Respondents were asked to answer the following question: "Please indicate the level of competition that your firm faces" (1 = very low, 5 = very high). Following the procedure

proposed by Malhotra et al. (2006), our results indicate that there is no notable difference between the two models (the model without additional marker variable vs the model with additional marker variable): $\chi^2(435) = 759.37$ vs $\chi^2(434) = 448.78$, CFI = 0.939 vs 0.941, TLI = 0.931 vs 0.933; IFI = 0.940 vs 0.942; GFI = 0.929 vs 0.932; RMSEA = 0.058 vs 0.057. Overall, the results from this set of analyses provided adequate support that common method bias is not a serious concern in this study.

4.6 Structural model and hypotheses testing

Using AMOS 16.0, we estimated the structural model to test the hypotheses. The overall fit statistics indicates a good fit of the model [$\chi^2(708) = 1,178.27$, $p < 0.01$; CFI = 0.92; TLI = 0.91; IFI = 0.92; GFI = 0.91; RMSEA = 0.05]. Figure 2 presents the results of the structural model.

Our results show that the relationship between perceived organizational support and informative communication was significant ($\beta = 0.17$, $p < 0.05$) and the relationship between perceived organizational support and service adaptation was significant ($\beta = 0.34$, $p < 0.01$). Therefore, H1 was supported for both dimensions of employee involvement in value co-creation. Our results also supported H2. Specifically, the effect of customer orientation on informative communication was significant ($\beta = 0.41$, $p < 0.01$) and the effect of customer orientation on service adaptation was significant ($\beta = 0.52$, $p < 0.01$).

Our results confirmed that informative communication had a positive effect on job satisfaction ($\beta = 0.32$, $p < 0.05$) and service adaptation had a positive effect on job satisfaction ($\beta = 0.59$, $p < 0.01$). Therefore, H3 was fully supported. H4 predicts that employee involvement in value co-creation has a negative effect on job stress. Our results confirmed that informative communication was negatively associated with job stress ($\beta = -0.35$, $p < 0.05$), while the effect of service adaptation was not significant ($\beta = 0.04$, n.s.). Therefore, H4 was partially supported.

To test our moderation hypothesis (H5a and H5b), we used the latent product approach suggested by Ping (1995). First, we standardized each indicator of the following variables: POS, CO and COOP. We then summed up the indicators of each latent variable and used the summated scores to generate the latent product indicators. By using this approach, we generated

Table 6 Construct measures and reliability index

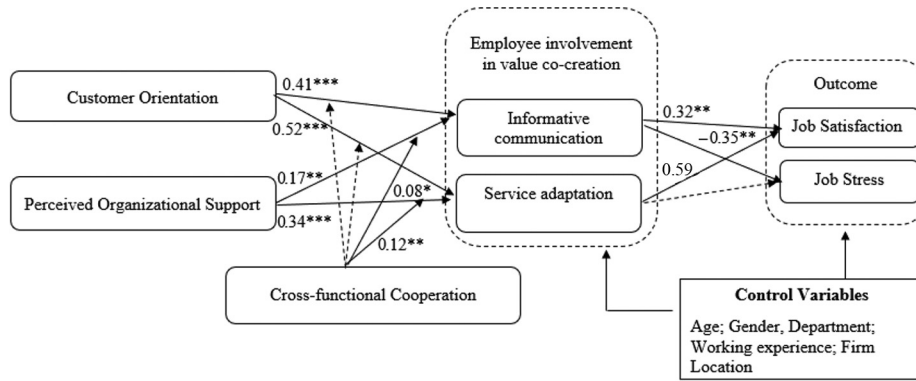
Constructs and measures	Factor loading	Cronbach's α	
Perceived organizational support: Please indicate the extent to which you believe the company has the feature described by the statement ("strong disagree/strong agree") in terms of . . . (CR = 0.84; AVE = 0.64)			
1. The company really cares about my well-being	0.83	0.84	
2. The company strongly considers my goals and values	0.79		
3. The company is willing to help me if I need a special favor	0.77		
Customer orientation: Please indicate the extent to which you believe the company has the feature described by the statement ("strong disagree/strong agree") in terms of . . . (CR = 0.85; AVE = 0.59)			
1. I make every customer feel like he/she is the only customer	0.70	0.84	
2. I respond very quickly to customer requests	0.83		
3. I always have the customer's best interest in mind	0.83		
4. My number one priority is always customer loyalty	0.70		
Cross-functional cooperation: Please indicate the extent to which you believe the company has the feature described by the statement ("strong disagree/strong agree") in terms of . . . (CR = 0.94; AVE = 0.70)			
1. All of the departments share communications frequently	0.86	0.93	
2. All of the departments frequently discuss common problems together	0.84		
3. My department shares close ties with people in other departments	0.80		
4. My department's relationship with other departments is mutually gratifying and highly cohesive	0.84		
5. My department and other departments have great dialogues	0.85		
6. There is a lot of two-way communications between my department and other departments	0.81		
Job satisfaction: Think about customer participation in the service delivery process and your interactions with the customer. Please indicate to what extent you agree or disagree with the following statements. ("strong disagree/strong agree") (CR = 0.87; AVE = 0.78)			
1. I frequently think about quitting this job (reverse coded)	0.91	0.88	
2. I am satisfied with the activities I perform every day	0.85		
Job stress: Think about customer participation in the service delivery process and your interactions with the customer. Please indicate to what extent you agree or disagree with the following statements. ("strong disagree/strong agree") (CR = 0.94; AVE = 0.66)			
1. Bring me a heavier workload	0.80	0.94	
2. Make me work under more time pressure	0.80		
3. Make me work extra hard to finish my tasks	0.90		
4. Make it difficult for me to decide how to get my job done	0.83		
5. Divert me from the duty that I should perform	0.79		
6. Make me nervous	0.80		
7. Increase my job stress	0.82		
8. Create more problems for me	0.80		
9. Make me work under conflicting directives	0.79		
Employee involvement in value co-creation: Think about customer participation in the service delivery process and your interactions with the customer. Please indicate to what extent you agree or disagree with the following statements. ("strong disagree/strong agree") (CR = 0.93; AVE = 0.64)			
Informative communication	1. I always provide accurate information to customers	0.82	0.86
	2. I communicate with customers in a timely manner	0.86	
	3. I provide necessary information to my customers so that they can perform their duties	0.83	
	4. I explain to the customers what they need to do in order to effectively use the service	0.79	
Service adaptation	1. I involve the customers into problem-solving	0.68	0.81
	2. I encourage customers to participate in the service delivery process	0.84	
	3. I educate our customers how to use our information system, websites, and facilities	0.81	
	4. I actively collect the suggestions and feedback from our customers	0.66	

Source: Authors' own work

the latent product for the interaction between perceived organizational support and cross-functional cooperation (POS * COOP) and the interaction between customer orientation and cross-functional cooperation (CO * COOP), respectively. Finally, we included the two latent product indicators (POS *

COOP and CO * COOP) in the structure model. As Figure 2 shows, cross-functional cooperation strengthened both the relationship between perceived organizational support and informative communication ($\beta = 0.08$, $p < 0.10$) and the relationship between perceived organizational support and service

Figure 2 Result of the structural model



Notes: Sample size = 225. * $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$
 Source: Authors own work

adaptation ($\beta = 0.12, p < 0.05$). Therefore, *H5a* is supported. *H5b* predicts that the positive effect of customer orientation on employee involvement in value co-creation is stronger when firm cross-functional cooperation is higher. However, our results did not lend support to *H5b*.

4.7 Additional mediation test

In this study, we conducted an additional test to examine whether employee involvement in value co-creation mediates the relationship between perceived organizational support/customer orientation and employees' outcome variables. Using the bootstrapping method with bias-corrected confidence estimates (MacKinnon *et al.*, 2004; Preacher and Hayes, 2008), we obtained a 90% confidence interval of the indirect effects with 2000 bootstrap resamples (Preacher and Hayes, 2008, Model 4). Table 7 summarizes the results of these direct and indirect effects.

According to the results in Table 7, the indirect effect of perceived organizational support on job satisfaction via service

adaptation was significant ($\beta = 0.15, CI = [0.04, 0.26]$) and the direct effect of perceived organizational support on job satisfaction was significant ($\beta = 0.52, CI = [0.40, 0.65]$). As a result, service adaptation partially mediates the effect of perceived organizational support on job satisfaction. We also found that the indirect effect of customer orientation on job satisfaction via service adaptation was significant ($\beta = 0.25, CI = [0.10, 0.41]$) and the direct effect of customer orientation on job satisfaction was significant ($\beta = 0.27, CI = [0.10, 0.44]$). Thus, service adaptation partially mediates the effect of customer orientation on job satisfaction.

Using the same approach, we also found that the indirect effect of perceived organizational support on job stress via informative communication was significant ($\beta = -0.12, CI = [-0.23, -0.03]$) and the direct effect of perceived organizational support on job stress was nonsignificant ($\beta = -0.10, CI = [-0.25, 0.06]$). Thus, informative communication fully mediates the effect of perceived organizational support on job stress. Furthermore, we also found that the indirect effect of

Table 7 Summary results of direct and indirect effects

Relationships			Standardized coefficient	CI _{low}	CI _{high}	Support
Direct effects						
Perceived organizational support	→	Job satisfaction	0.52	0.40	0.65	Yes
Customer orientation	→	Job satisfaction	0.27	0.10	0.44	Yes
Perceived organizational support	→	Job stress	-0.10	-0.25	0.06	No
Customer orientation	→	Job stress	-0.13	-0.32	0.07	No
Indirect effects						
Perceived organizational support → Informative communication	→	Job satisfaction	0.03	-0.07	0.14	No
Perceived organizational support → Service adaptation	→	Job satisfaction	0.15	0.04	0.26	Yes
Customer orientation → Informative communication	→	Job satisfaction	0.11	-0.00	0.25	No
Customer orientation → Service adaptation	→	Job satisfaction	0.25	0.10	0.41	Yes
Perceived organizational support → Informative communication	→	Job stress	-0.12	-0.23	-0.03	Yes
Perceived organizational support → Service adaptation	→	Job stress	0.00	-0.09	0.10	No
Customer orientation → Informative communication	→	Job stress	-0.15	-0.27	-0.03	Yes
Customer orientation → Service adaptation	→	Job stress	0.02	-0.11	0.16	No

Source: Authors' own work

customer orientation on job stress via informative communication was significant ($\beta = -0.15$, CI = $[-0.27, -0.03]$) and the direct effect of customer orientation on job satisfaction was not significant ($\beta = -0.13$, CI = $[-0.32, 0.07]$). Thus, informative communication fully mediates the effect of customer orientation on job stress.

5. Discussion

5.1 Discussion of key findings

In this study, we first developed a new scale of employee involvement in value co-creation, in which two dimensions including informative communication and service adaptation were identified. We then developed a theoretical framework to explore how organizational resources motivate employees to be involved in value co-creation and how employee involvement in value co-creation influences service employees' job stress and satisfaction. Our key findings are further discussed below.

5.1.1 The two-dimensional employee involvement in value co-creation scale

The two dimensions of employee involvement in value co-creation identified in this study capture the two critical and fundamental aspects regarding how service employees can involve customers in value co-creation and facilitate the co-creation process. Particularly, these two dimensions correspond to service employees' roles as an enabler and a coordinator identified by Bowen (2016) and Larivière *et al.* (2017). Through informative communication, service employees help customers gain the knowledge and information that is timely and necessary for them to perform their role as value co-creators. In other words, working as enablers, service employees enable customers to participate in value co-creation. By adapting their service offerings and engaging customers into different co-creation behaviors (e.g. joint problem solving and providing feedback), service employees serve as coordinators who coordinate customers' interactions with the service organization or other actors in the value co-creation process and make the value co-creation process more efficient.

5.1.2 Organizational resources on employee involvement in value co-creation

Following the JD-R framework, we identified three potential organizational resources (such as perceived organizational support, customer orientation and cross-functional cooperation) that may help service employees cope with their job demands and meet their job expectation. Consistent with the motivational path of job resources suggested by the JD-R model, we found that both perceived organizational support and customer orientation motivate employees to be involved in value co-creation. In other words, when an organization provided strong support to its service employees and established a customer-oriented organizational culture, its service employees are more likely to actively participate in value co-creation. Using a model comparison, we found that customer orientation has a relatively stronger effect on employee involvement in value co-creation than perceived organizational support ($\beta = 0.41^{***}$ vs $\beta = 0.17^{**}$, $\Delta\chi^2 = 7.91$, $p < 0.01$ for informative communication and $\beta = 0.52^{***}$ vs $\beta = 0.34^{***}$, $\Delta\chi^2 = 6.85$, $p < 0.01$ for service adaptation). Many previous studies on value co-creation emphasized the

importance of organizational support (Bagozzi, 1995; Bettencourt, 1997; Riordan *et al.*, 2005) while the role of customer orientation has been relatively neglected. The findings of this study suggest that establishing a customer-oriented culture might be more productive in driving employee involvement in value co-creation than organizational support.

Furthermore, by comparing the differential effect of each organizational resource on two distinct dimensions of employee involvement in value co-creation, we found that the effects of customer orientation on both dimensions of employee involvement in value co-creation are almost equivalent ($\beta = 0.41^{***}$ for informative communication vs $\beta = 0.52^{***}$ for service adaptation, $\Delta\chi^2 = 0.08$, $p > 0.10$). The effect of perceived organizational support on service adaptation is relatively stronger than that on informative communication ($\beta = 0.34^{***}$ vs $\beta = 0.17^{**}$, $\Delta\chi^2 = 7.45$, $p < 0.01$). These results indicate that organizational support is more critical for service adaptation than for informative communication. It is possible that service adaptation entails more role demand than informative communication and perceived organizational support helps provide more resources from the organization to motivate employees to involve in the value co-creation process.

5.1.3 The moderating role of cross-functional cooperation

Because customer's needs and requests are often complicated, which are often beyond the control of customer service department, service employees need the cooperation and support from other functional areas of the company to perform their roles as value co-creation facilitators. Thus, cross-functional cooperation is an important job resource for service employees. The working mechanism of cross functional cooperation is different from the other two types of job resources: organizational support and customer orientation. We found that cross-functional cooperation can boost the relationship between perceived organizational support and employee involvement in value co-creation. This result indicates that different types of job resources may function via different mechanisms, and they may interact and strengthen each other's effects. Cross-functional cooperation helps to synergize and fully exploit an organization's job resources and maximize the effects of organizational support. Surprisingly, the cross-functional cooperation did not strengthen the relationship between customer orientation and employee involvement in value co-creation as hypothesized. One possible explanation is that when customer orientation becomes widely accepted and internalized by corporate members, employees from different function areas may fully understand the importance of customer value and actively perform their roles to maximize customer value. This enables service employees to fulfill their role expectations as enablers and coordinators in the value co-creation process and cross-functional cooperation becomes insignificant in shaping the effect of customer orientation.

5.1.4 Employee involvement in value co-creation and outcome variables

Empirical research on value co-creation supports that through customer participation, employees may experience benefits, such as relational value (Chan *et al.*, 2010) and enjoyment (Yim *et al.*, 2012), which ultimately increases employees' job satisfaction. However, given employee involvement in value

co-creation has two dimensions, the effect of employee involvement in value co-creation on employees' job outcomes is more complicated. Our results suggest that both dimensions of employee involvement in value co-creation (informative communication and service adaptation) contribute to job satisfaction. Furthermore, the effect of service adaptation is relatively stronger than that of informative communication (β : 0.59*** > 0.32**, $\Delta\chi^2 = 8.62$, $p < 0.01$), which indicates that employees will become more satisfied with their jobs if they are able to adapt service offerings and involve customers in problem-solving and service delivery as opposed to simply providing or sharing information with their customers. Although not hypothesized, we found that service adaptation partially mediates the effect of customer orientation/perceived organizational support on job satisfaction. This finding suggests that service adaptation can partially explain how organizational resources improve employees' job satisfaction.

Interestingly, although previous studies (Blut *et al.*, 2020; Chan *et al.*, 2010; Chen *et al.*, 2015; Choi and Lawry, 2020; Hsieh *et al.*, 2004) suggest that customer co-creation increases employees' job stress, our results show that if employees are able to adapt to their new roles as value co-creation enablers to embrace customers' role as co-creators and be proactive in providing timely and accurate information to enable customer participation, employees' job stress may be reduced ($\beta = -0.35$, $p < 0.01$). Furthermore, we also found that informative communication fully mediates the relationship between customer orientation and job stress and that between perceived organizational support and job stress. These findings suggest that with sufficient resources to train and support employees to integrate customers into their daily operations, customer participation may not necessarily lead to negative outcomes for employees. On the contrary, organizational resources help to reduce employees' job stress and these effects are achieved through service employees' information provision and communication with customers in the value co-creation process.

Surprisingly, the direct effect of service adaptation on employees' job stress is not supported. One possible reason is that service adaptation may be a double-edged sword. Although employees may sometimes enjoy the workload reduction due to the benefits resulting from customers' performing the role of partial employees, employees' job stress might also increase due to the effort needed to customize and adapt the service offerings for each customer. Thus, when serving the role of a coordinator in the value co-creation, the benefits and responsibilities associated with the role may neutralize each other, resulting in a nonsignificant effect.

5.2 Theoretical implications

This paper makes several important contributions to the services literature addressing value co-creation and service employees. First, we developed a scale of employee involvement in value co-creation. As the service encounter transforms in the modern economy, to improve the effectiveness of customer co-creation, employees must adjust their role and job expectations to become service enablers and coordinators (Bowen, 2016; Larivière *et al.*, 2017) and embrace customers' new role as value co-creators. Without proper training and support, service employees may not be able to

develop new knowledge structure and adaptive service tactics to integrate customers into their daily operations. As a result, they may experience stress and burnout due to heightened role conflict, role ambiguity, and work overload (Chan *et al.*, 2010) as well as varying levels and different types of customer participation among customers (Menguc *et al.*, 2020). To the best of our knowledge, this is the first scale that captures employees' new role expectations as a value facilitator and measures their involvement in value co-creation in the service marketing literature. The two distinct dimensions of employee involvement in value co-creation we identified correspond to the two evolving roles of service employees (i.e. enablers and coordinators) in service delivery and outline the role scripts of employees' new role expectations. These findings shed new light on how employees are involved in value co-creation process and how they perform their expected roles in the value co-creation process.

Based on the JD-R model, this study uncovers the underlying mechanism regarding how organizational resources motivate service employees' involvement in value co-creation. Given the boundary spanning nature of service positions, service jobs are demanding, and employees need significant resources to cope with the demands and stress (Bakker and Demerouti, 2007; Edmondson and Boyer, 2013). What resources an organization can provide to their employees and how these resources influence service employees' job performance is critical in the success of value co-creation. In this study, we analyzed three types of job resources that organizations can provide to their employees, including organizational support, customer orientation and cross-functional cooperation and found that organizational support and customer orientation effectively motivate service employees to involve in value co-creation. Cross-functional cooperation strengthened the impact of perceived organizational support on employee involvement in value co-creation. These results indicate that different types of resources may have different working mechanisms and they may interact with each other in facilitating the value co-creation process.

Diverting from previous studies that focus on the effects of customer co-creation on firm performance (Blut *et al.*, 2020; Chan *et al.*, 2010; Dong and Sivakumar, 2017; Ranjan and Read, 2016), our study provides new insights regarding the important role that employees involve in value co-creation and investigates the mechanisms underlying the relationship between organizational strategies and job satisfaction. Specifically, we found that service adaptation (one dimension of employee involvement in value co-creation) partially mediates the relationship between customer orientation/perceived organizational support and job satisfaction. These results indicate that service employees' involvement in value co-creation provides an alternative theoretical explanation for the relationship between organizational strategies and employees' job satisfaction. Organizational resources will motivate employees to be involved in value co-creation. It is employees' intentional co-creation activities that boost employees' satisfaction with their jobs.

Previous studies found that customer participation in value co-creation increases employees' job stress (Blut *et al.*, 2020; Chan *et al.*, 2010; Chen *et al.*, 2015; Choi and Lawry, 2020; Hsieh *et al.*, 2004). We, however, found that when ample

resources are provided to support employees' new role as enablers and coordinators in the value co-creation process, their job stress may be reduced. Moreover, we found that informative communication, one dimension of employee involvement in value co-creation, fully mediates the effect of customer orientation/perceived organizational support on job stress. When service employee provides timely and sufficient information to customers, customers may be able to share responsibilities and effectively participate in value co-creation, which results in reduced workload and stress. The finding provides a new research direction regarding how to leverage valuable organizational resources to reduce employees' job stress.

5.3 Managerial implications

This study provides important implications for marketing managers. First, the employee involvement in value co-creation scale we developed in this study can be useful not only in academic research but also in marketing practice. From our findings, managers can achieve a better understanding of service employees' evolving roles as enablers and coordinators in value co-creation. The role script and expectations of service employees as value co-creation facilitators can be better elaborated. Based on the new scale, service managers can develop appropriate programs to involve employees in the value co-creation process. It also provides effective measures for service managers to evaluate employees' performance in facilitating customer value co-creation.

Second, our findings will help managers effectively allocate organizational resources. For example, because the effect of customer orientation is relatively stronger than that of perceived organizational support, marketing managers need to understand the importance of customer orientation in value co-creation and instill this philosophy and culture into their planning and execution of daily operations, such as cultivating a customer-first culture, strengthening the customer service climate in the organization and empowering employees to create and maintain good relationships with customers. In addition, our findings confirm the importance of cross-functional cooperation in organizations as it strengthens the relationships between perceived organizational support and employee involvement in value co-creation. This result provides guidelines for managers to allocate resources in strengthening collaborations across different departments in value co-creation. Cross-functional cooperation helps organizations better utilize their organizational resources, which leads to a higher level of employee involvement in value co-creation. The effective customer value co-creation will, in turn, contribute to the benefits of customers, employees and organizations.

Third, it is widely believed that customer participation may increase service employees' job stress (Blut *et al.*, 2020; Chan *et al.*, 2010; Chen *et al.*, 2015; Choi and Lawry, 2020; Hsieh *et al.*, 2004). In contrast, we found that providing ample resources to motivate employees to be involved in value co-creation can increase employee job satisfaction and relieve job stress. Such findings indicate that employee involvement in value co-creation will not only facilitate customers' value co-creation but also lead to several positive outcomes for employees and the organization. Thus, managers should focus

their efforts on engaging employees in the value co-creation process.

5.4 Limitations and future research

Some limitations of this study deserve consideration. First, the new scale of employee involvement in value co-creation is developed and tested across three different service contexts, including ports, airports, and car dealers and in two countries, including the USA and China. Given the heterogeneity of services, the different research contexts used in the study might be a concern. However, since value co-creation exists in any service encounters across different countries and industries, the nature of employees' involvement in customer value co-creation is expected to be universal. Because the items we developed from the qualitative study are not context or country specific, they might be able to be safely applied to other service contexts and countries. To alleviate the concern regarding the different research contexts, we conducted *t*-tests to compare the major constructs between the two quantitative studies and found there were no significant differences in both informative communication ($t = 0.46, p = 0.65$) and service adaptation ($t = 0.80, p = 0.43$). These results indicate that our measures of service employees' involvement in value co-creation might be transferable to different research contexts. Moreover, the results from different service contexts and countries helps to cross-validate our findings. To confirm the generalizability of the scale and model, future research is needed to validate and test our findings in other service contexts (e.g. medical, legal or financial services) and countries. Second, this study identified three sources of job resources including perceived organizational support, customer orientation and cross-functional cooperation. There might be other types of job resources that needed be examined. Third, in this study, we examined the influence of employee involvement in value co-creation on employees' job satisfaction and job stress. Future research may collect dyadic data from both the customer and the employee to examine the influence of employee involvement in value co-creation on customer satisfaction and customer retention. Some cultural variables (e.g. individualism-collectivism, power distance) may also need to be considered to expand the knowledge of the boundary conditions of employee involvement in value co-creation. In addition, we focused on cross-functional cooperation as the moderator in this study. Future research is needed to identify other boundary conditions for our hypothesized relationships.

References

- Abbu, H.R. and Gopalakrishna, P. (2021), "Synergistic effects of market orientation implementation and internalization on firm performance: direct marketing service provider industry", *Journal of Business Research*, Vol. 125, pp. 851-863.
- Anderson, J.C. and Gerbing, D.W. (1988), "Structural equation modeling in practice: a review and recommended two-step approach", *Psychological Bulletin*, Vol. 103 No. 3, pp. 411-423.
- Auh, S., Menguc, B., Imer, P. and Uslu, A. (2019), "Frontline employee feedback-seeking behavior: how is it formed and

- when does it matter?”, *Journal of Service Research*, Vol. 22 No. 1, pp. 44-59.
- Bagozzi, R.P. (1995), “Reflections on relationship marketing in consumer markets”, *Journal of the Academy of Marketing Science*, Vol. 23 No. 4, pp. 272-277.
- Bagozzi, R.P. and Yi, Y. (1988), “On the evaluation of structural equation models”, *Journal of the Academy of Marketing Science*, Vol. 16 No. 1, pp. 74-94.
- Bakker, A.B. and Demerouti, E. (2007), “The job demands-resources model: state of the art”, *Journal of Managerial Psychology*, Vol. 22 No. 3, pp. 309-328.
- Bakker, A.B., Demerouti, E., De Boer, E. and Schaufeli, W.B. (2003), “Job demands and job resources as predictors of absence duration and frequency”, *Journal of Vocational Behavior*, Vol. 62 No. 2, pp. 341-356.
- Bendapudi, N. and Leone, R.P. (2003), “Psychological implications of customer participation in co-production”, *Journal of Marketing*, Vol. 67 No. 1, pp. 14-28.
- Bentler, P.M. and Bonett, D.G. (1980), “Significance tests and goodness of fit in the analysis of covariance structures”, *Psychological Bulletin*, Vol. 88 No. 3, pp. 588-606.
- Bettencourt, L.A. (1997), “Customer voluntary performance: customers as partners in service delivery”, *Journal of Retailing*, Vol. 73 No. 3, pp. 383-406.
- Bitner, M., Faranda, W.T., Hubbert, A.R. and Zeithaml, V.A. (1997), “Customer contributions and roles in service delivery”, *International Journal of Service Industry Management*, Vol. 8 No. 3, pp. 193-205.
- Blut, M., Heirati, N. and Schoefer, K. (2020), “The dark side of customer participation: when customer participation in service co-development leads to role stress”, *Journal of Service Research*, Vol. 23 No. 2, pp. 156-173.
- Boadi, E.A., He, Z., Antwi, C.O., Altab, H.M., Bosompem, J., Hinson, R.E. and Boadi, V.A. (2022), “Value co-creation and employee service behaviours: the moderating role of trust in employee-hotel relationship”, *Journal of Retailing and Consumer Services*, Vol. 66, pp. 1-11.
- Boadi, E.A., He, Z., Boadi, E.K., Antwi, S. and Say, J. (2020), “Customer value co-creation and employee silence: emotional intelligence as explanatory mechanism”, *International Journal of Hospitality Management*, Vol. 91, pp. 1-13.
- Bowen, D.E. (1986), “Managing customers as human resources in service organizations”, *Human Resource Management*, Vol. 25 No. 3, pp. 371-383.
- Bowen, D.E. (2016), “The changing role of employees in service theory and practice: an interdisciplinary view”, *Human Resource Management Review*, Vol. 26 No. 1, pp. 4-13.
- Brislin, R.W. (1980), “Translation and content analysis of oral and written materials”, Triandis, H.C. and Berry, J.W. (Eds), *Handbook of Cross-cultural Psychology: Methodology*, Vol. 2, pp. 389-444.
- Brown, T.J., Mowen, J.C., Donavan, D.T. and Licata, J.W. (2002), “The customer orientation of service workers: personality trait effects on self-and supervisor performance ratings”, *Journal of Marketing Research*, Vol. 39 No. 1, pp. 110-119.
- Chan, K.W. and Wan, E.W. (2012), “How can stressed employees deliver better customer service? The underlying self-regulation depletion mechanism”, *Journal of Marketing*, Vol. 76 No. 1, pp. 119-137.
- Chan, K.W., Yim, C.K. and Lam, S.S. (2010), “Is customer participation in value creation a double-edged sword? Evidence from professional financial services across cultures”, *Journal of Marketing*, Vol. 74 No. 3, pp. 48-64.
- Chen, C.C.V., Chen, C.J. and Lin, M.J.J. (2015), “The impact of customer participation: the employee’s perspective”, *Journal of Business & Industrial Marketing*, Vol. 30 No. 5, pp. 486-497.
- Cheung, G.W. and Rensvold, R.B. (2002), “Evaluating goodness-of-fit indexes for testing measurement invariance”, *Structural Equation Modeling: A Multidisciplinary Journal*, Vol. 9 No. 2, pp. 233-255.
- Choi, L. and Lawry, C.A. (2020), “Labors of love: service employees on customer participation”, *Journal of Service Theory and Practice*, Vol. 30 No. 6, pp. 585-607.
- Chou, C.Y., Huang, C.H. and Lin, T.A. (2018), “Organizational intellectual capital and its relation to frontline service employee innovative behavior: consumer value co-creation behavior as a moderator”, *Service Business*, Vol. 12 No. 4, pp. 663-684.
- Chowdhury, IN., Gruber, T. and Zolkiewski, J. (2016), “Every cloud has a silver lining—exploring the dark side of value co-creation in B2B service networks”, *Industrial Marketing Management*, Vol. 55, pp. 97-109.
- Churchill, G.A. Jr. (1979), “A paradigm for developing better measures of marketing constructs”, *Journal of Marketing Research*, Vol. 16 No. 1, pp. 64-73.
- Demerouti, E., Bakker, A.B., Nachreiner, F. and Schaufeli, W. B. (2001), “The job demands-resources model of burnout”, *Journal of Applied Psychology*, Vol. 86 No. 3, pp. 499-512.
- Deshpandé, R., Farley, J.U. and Webster, F.E. (1993), “Corporate culture, customer orientation, and innovativeness in Japanese firms: a quadrad analysis”, *Journal of Marketing*, Vol. 57 No. 1, pp. 23-37.
- Dong, B. and Sivakumar, K. (2017), “Customer participation in services: domain, scope, and boundaries”, *Journal of the Academy of Marketing Science*, Vol. 45 No. 6, pp. 944-965.
- Dong, B., Evans, K.R. and Zou, S. (2008), “The effects of customer participation in co-created service recovery”, *Journal of the Academy of Marketing Science*, Vol. 36 No. 1, pp. 123-137.
- Edmondson, D.R. and Boyer, S.L. (2013), “The moderating effect of the boundary spanning role on perceived supervisory support: a meta-analytic review”, *Journal of Business Research*, Vol. 66 No. 11, pp. 2186-2192.
- Edward, J. (2019), “The future of financial advice: how financial advisors are charting a path forward to meet changing client needs and attitudes”, *The Wall Street Journal*, (March 15), available at: <https://partners.wsj.com/edward-jones/future-of-financial-advice/trailblazers-or-traditionalists/> (accessed 25 March 2022).
- Eisenberger, R., Armeli, S., Rexwinkel, B., Lynch, P.D. and Rhoades, L. (2001), “Reciprocation of perceived organizational support”, *Journal of Applied Psychology*, Vol. 86 No. 1, pp. 42-51.
- Eisenberger, R., Huntington, R., Hutchison, S. and Sowa, D. (1986), “Perceived organizational support”, *Journal of Applied Psychology*, Vol. 71 No. 3, pp. 500-507.

- Fang, E. (2008), "Customer participation and the trade-off between new product innovativeness and speed to market", *Journal of Marketing*, Vol. 72 No. 4, pp. 90-104.
- Fornell, C. and Larcker, D.F. (1981), "Structural equation models with unobservable variables and measurement error: algebra and statistics", *Journal of Marketing Research*, Vol. 18 No. 3, pp. 382-388.
- Galunic, D.C. and Rodan, S. (1998), "Resource recombinations in the firm: knowledge structures and the potential for Schumpeterian innovation", *Strategic Management Journal*, Vol. 19 No. 12, pp. 1193-1201.
- Gerbing, D.W. and Anderson, J.C. (1988), "An updated paradigm for scale development incorporating unidimensionality and its assessment", *Journal of Marketing Research*, Vol. 25 No. 2, pp. 186-192.
- Goyal, S., Ahuja, M. and Kankanhalli, A. (2020), "Does the source of external knowledge matter? Examining the role of customer co-creation and partner sourcing in knowledge creation and innovation", *Information & Management*, Vol. 57 No. 6, pp. 1-14.
- Graf, A. (2007), "Changing roles of customers: consequences for HRM", *International Journal of Service Industry Management*, Vol. 18 No. 5, pp. 491-509.
- Gremler, D.D. and Gwinner, K.P. (2000), "Customer-employee rapport in service relationships", *Journal of Service Research*, Vol. 3 No. 1, pp. 82-104.
- Hair, J.F., Black, W.C., Babin, B.J., Anderson, R.E. and Tatham, R.L. (1998), *Multivariate Data Analysis*, Prentice Hall.
- Hajli, N., Shanmugam, M., Papagiannidis, S., Zahay, D. and Richard, M.O. (2017), "Branding co-creation with members of online brand communities", *Journal of Business Research*, Vol. 70, pp. 136-144.
- Hockey, G.R.J. (1997), "Compensatory control in the regulation of human performance under stress and high workload: a cognitive-energetical framework", *Biological Psychology*, Vol. 45 Nos 1/3, pp. 73-93.
- Homburg, C., Workman, J.P. and Krohmer, H. (1999), "Marketing's influence within the firm", *Journal of Marketing*, Vol. 63 No. 2, pp. 1-17.
- Hsieh, A.T., Yen, C.H. and Chin, K.C. (2004), "Participative customers as partial employees and service provider workload", *International Journal of Service Industry Management*, Vol. 15 No. 2, pp. 187-199.
- Iglesias, O., Markovic, S., Bagherzadeh, M. and Singh, J.J. (2020), "Co-creation: a key link between corporate social responsibility, customer trust, and customer loyalty", *Journal of Business Ethics*, Vol. 163 No. 1, pp. 151-166.
- Janssen, O. and Van Yperen, N.W. (2004), "Employees' goal orientations, the quality of leader-member exchange, and the outcomes of job performance and job satisfaction", *Academy of Management Journal*, Vol. 47 No. 3, pp. 368-384.
- Kim, K. and Baker, M.A. (2020), "Paying it forward: the influence of other customer service recovery on future co-creation", *Journal of Business Research*, Vol. 121, pp. 604-615.
- Kim, K., Byon, K.K. and Back, W. (2020), "Customer-to-customer value co-creation and co-destruction in sporting events", *The Service Industries Journal*, Vol. 40 Nos 9/10, pp. 633-655.
- Korschun, D., Bhattacharya, C.B. and Swain, S.D. (2014), "Corporate social responsibility, customer orientation, and the job performance of frontline employees", *Journal of Marketing*, Vol. 78 No. 3, pp. 20-37.
- Larivière, B., Bowen, D., Andreassen, T.W., Kunz, W., Sirianni, N.J., Voss, C., Wunderlich, N.V. and De Keyser, A. (2017), "'Service encounter 2.0': an investigation into the roles of technology, employees and customers", *Journal of Business Research*, Vol. 79, pp. 238-246.
- Li, T. and Calantone, R.J. (1998), "The impact of market knowledge competence on new product advantage: conceptualization and empirical examination", *Journal of Marketing*, Vol. 62 No. 4, pp. 13-29.
- Li, M. and Hsu, C.H. (2018), "Customer participation in services and employee innovative behavior: the mediating role of interpersonal trust", *International Journal of Contemporary Hospitality Management*, Vol. 30 No. 4, pp. 2112-2131.
- Liao, H. and Subramony, M. (2008), "Employee customer orientation in manufacturing organizations: joint influences of customer proximity and the senior leadership team", *Journal of Applied Psychology*, Vol. 93 No. 2, pp. 317-328.
- Lindell, M.K. and Whitney, D.J. (2001), "Accounting for common method variance in cross-sectional research designs", *Journal of Applied Psychology*, Vol. 86 No. 1, pp. 114-121.
- Luo, X., Slotegraaf, R.J. and Pan, X. (2006), "Cross-functional 'coopetition': the simultaneous role of cooperation and competition within firms", *Journal of Marketing*, Vol. 70 No. 2, pp. 67-80.
- MacKinnon, D.P., Lockwood, C.M. and Williams, J. (2004), "Confidence limits for the indirect effect: distribution of the product and resampling methods", *Multivariate Behavioral Research*, Vol. 39 No. 1, pp. 99-128.
- Malhotra, N.K., Kim, S.S. and Patil, A. (2006), "Common method variance in is research: a comparison of alternative approaches and a reanalysis of past research", *Management Science*, Vol. 52 No. 12, pp. 1865-1883.
- Menguc, B., Auh, S. and Wang, F. (2020), "Customer participation variation and its impact on customer service performance: underlying process and boundary conditions", *Journal of Service Research*, Vol. 23 No. 3, pp. 299-320.
- Moorman, C. and Rust, R.T. (1999), "The role of marketing", *Journal of Marketing*, Vol. 63 No. 4, suppl1, pp. 180-197, (Fundamental issues and directions for marketing).
- Organ, D.W., Podsakoff, P.M. and MacKenzie, S.B. (2005), *Organizational Citizenship Behavior: Its Nature, Antecedents, and Consequences*, Sage Publications.
- Ping, R.A. Jr. (1995), "A parsimonious estimating technique for interaction and quadratic latent variables", *Journal of Marketing Research*, Vol. 32 No. 3, pp. 336-347.
- Prahalad, C.K. and Ramaswamy, V. (2000), "Co-opting customer competence", *Harvard Business Review*, Vol. 78 No. 1, pp. 79-90.
- Prahalad, C.K. and Ramaswamy, V. (2004), *The Future of Competition: Co-Creating Unique Value with Customers*, Harvard Business Press.
- Preacher, K.J. and Hayes, A.F. (2008), "Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models", *Behavior Research Methods*, Vol. 40 No. 3, pp. 879-891.

- Rafaeli, A., Ziklik, L. and Doucet, L. (2008), "The impact of call center employees' customer orientation behaviors on service quality", *Journal of Service Research*, Vol. 10 No. 3, pp. 239-255.
- Ranjan, K.R. and Read, S. (2016), "Value co-creation: concept and measurement", *Journal of the Academy of Marketing Science*, Vol. 44 No. 3, pp. 290-315.
- Riordan, C.M., Vandenberg, R.J. and Richardson, H.A. (2005), "Employee involvement climate and organizational effectiveness", *Human Resource Management*, Vol. 44 No. 4, pp. 471-488.
- Roy, S.K., Balaji, M.S., Soutar, G. and Jiang, Y. (2020), "The antecedents and consequences of value co-creation behaviors in a hotel setting: a two-country study", *Cornell Hospitality Quarterly*, Vol. 61 No. 3, pp. 353-368.
- Shore, L.M. and Wayne, S.J. (1993), "Commitment and employee behavior: comparison of affective commitment and continuance commitment with perceived organizational support", *Journal of Applied Psychology*, Vol. 78 No. 5, pp. 774-780.
- Shuck, B. and Wollard, K. (2010), "Employee engagement and HRD: a seminal review of the foundations", *Human Resource Development Review*, Vol. 9 No. 1, pp. 89-110.
- Shulga, L.V. and Busser, J.A. (2020), "Hospitality employee and customer role in value co-creation: personal, organizational and collaborative outcomes", *International Journal of Hospitality Management*, Vol. 91, pp. 1-12.
- Song, X.M., Montoya-Weiss, M.M. and Schmidt, J.B. (1997), "Antecedents and consequences of cross-functional cooperation: a comparison of R&D, manufacturing, and marketing perspectives", *Journal of Product Innovation Management*, Vol. 14 No. 1, pp. 35-47.
- Strese, S., Meuer, M.W., Flatten, T.C. and Brettel, M. (2016), "Organizational antecedents of cross-functional cooperation: the impact of leadership and organizational structure on cross-functional cooperation", *Industrial Marketing Management*, Vol. 53 No. 1, pp. 42-55.
- Terho, H., Eggert, A., Haas, A. and Ulaga, W. (2015), "How sales strategy translates into performance: the role of salesperson customer orientation and value-based selling", *Industrial Marketing Management*, Vol. 45, pp. 12-21.
- Thibaut, J. and Walker, L. (1978), "A theory of procedure", *California Law Review*, Vol. 66 No. 3, pp. 541-566.
- Troy, L.C., Hirunyawipada, T. and Paswan, A.K. (2008), "Cross-functional integration and new product success: an empirical investigation of the findings", *Journal of Marketing*, Vol. 72 No. 6, pp. 132-146.
- Vargo, S.L. and Lusch, R.F. (2004), "Evolving to a new dominant logic for marketing", *Journal of Marketing*, Vol. 68 No. 1, pp. 1-17.
- Verleye, K., Gemmel, P. and Rangarajan, D. (2016), "Engaged customers as job resources or demands for frontline employees?", *Journal of Service Theory and Practice*, Vol. 26 No. 3, pp. 363-383.
- Williams, L.J. and Anderson, S.E. (1991), "Job satisfaction and organizational commitment as predictors of organizational citizenship and in-role behaviors", *Journal of Management*, Vol. 17 No. 3, pp. 601-617.
- Wirtz, J., Tambyah, S.K. and Mattila, A.S. (2010), "Organizational learning from customer feedback received

- by service employees: a social capital perspective", *Journal of Service Management*, Vol. 21 No. 3, pp. 363-387.
- Yi, Y. and Gong, T. (2013), "Customer value co-creation behavior: scale development and validation", *Journal of Business Research*, Vol. 66 No. 9, pp. 1279-1284.
- Yim, C.K., Chan, K.W. and Lam, S.S. (2012), "Do customers and employees enjoy service participation? Synergistic effects of self-and other-efficacy", *Journal of Marketing*, Vol. 76 No. 6, pp. 121-140.
- Yoo, J., Chen, J. and Frankwick, G.L. (2020), "Influence of customer participation from the employee perspective", *International Journal of Bank Marketing*, Vol. 39 No. 1, pp. 24-47.
- Zeitz, G., Mittal, V. and McAulay, B. (1999), "Distinguishing adoption and entrenchment of management practices: a framework for analysis", *Organization Studies*, Vol. 20 No. 5, pp. 741-776.
- Zhou, K.Z. and Li, C.B. (2012), "How knowledge affects radical innovation: knowledge base, market knowledge acquisition, and internal knowledge sharing", *Strategic Management Journal*, Vol. 33 No. 9, pp. 1090-1102.

Further reading

- Busser, J.A. and Shulga, L.V. (2018), "Co-created value: multidimensional scale and nomological network", *Tourism Management*, Vol. 65, pp. 69-86.

Appendix 1. In-depth interview guide

1. Welcome and introduce the purpose of the study

Thank you for taking time to participate in our in-depth interview today. My name is _____ from _____. We are here to talk about the services offered by XXX (Port name) and customer satisfaction with the services.

2. Introduce the research method of a focus group

The discussion method that we are going to use is called in-depth interview. In-depth interview is an intensive individual interview with a small number of respondents to explore their perspectives on a particular idea, program, or situation. The interview usually takes about one hour or until all of the questions are answered and everyone has said all he or she wants to say.

3. Introduce the ground rules

I will record our discussion so that we can review what you have said later to accurately convey your idea or opinion. The information you provide will be kept confidential. In all of our reports, we will not refer to any participant by name or include any information that makes it possible to identify you. Remember, you don't have to talk about anything you don't want to and you may end the interview at any time.

Before we start, are there any questions?

Let's find out a little more about you by introducing yourself. (Icebreaker and setting a baseline for transcription)

4. Questions

4.1 Background

- 1 What is your position in your company?
- 2 What are your major job responsibilities?

4.2 Interactions with customers

- 1 Who are your customers?
 - Probe: External customers? Internal customers?
 - Which type of customer is more important? VIP customers?
- 2 How do you describe your relationship with each type of customer?
- 3 On what basis do you interact with each type of customer?
 - Probe: How often do you interact with the customer?
 - How do you interact with the customer? Can you give us an example regarding on what occasion do you interact with the customer and how do you interact with the customer?
 - What kind of problems does the customer usually have? (What do you hear the most from the customer?)
 - Do you think the problem is caused by the port or by the customer? How do you usually solve the problems and provide support to them?
- 4 What are the expectations you have for the customer? What are their expectations of you?

4.3 Word association test (please respond with the first word that comes to your mind)

- Cargo owner
- Shipline
- Trucker
- Railroads
- Brokers/Forwarders
- Customer service
- Port of Virginia
- Port of Savannah
- Port of Charleston
- Port of New York and New Jersey

4.4 Service process and customer contact points

- 1 What are the core services offered by XXX (Port name)? (Probe: In your opinion, which is the most important aspect of services provided by XXX?)

- 2 Can you use a flow chart to walk me through a typical service process when your port is doing business with your customers? Starting from when customers first contact your company for their import or export needs. Please focus on the sequence of service processes and customer actions [Probe: Inquiry, Order, Customers, Inspections, Unload/load]
- 3 Could you circle the customer contact points?
 - Probe: whom do you interact with? How and how often do you interact with the customer?
- 4 What are the major problems or service failures you have met in the service delivery process?
 - Probe: where does it occur in the chart? What are the causes?

4.5 Service quality and customer satisfaction

- 1 How would your customers rate their overall satisfaction with XXX? Among ship lines, truckers, and brokers, who do you think would rate XXX the highest?
- 2 What do the customers like the most about with XXX? What do you think the customers value the most of XXX?
- 3 What do the customers like the least about the XXX?

4.6 Company culture and cross-functional support

- 1 How do you think about the culture of XXX? How much do the high level managers and ordinary employees care about the customers?
- 2 Do they interact with the operations department and other departments? If yes, How and when?
- 3 How do you think about the quality of the XXX employees? (Probe: are they capable? Are they prompt, responsive, and accessible? Are they care about the customers)
- 4 What could XXX do better to improve customer satisfaction?

5. Conclusion

Is there anything more you would like to add?

Thank you so much for sharing your thoughts and opinions with us.

Appendix 2

Table A1 the Item Pool, source and factor loading

ID	Item	Source		Factor loading			Results
1	I respond customers' requests and questions promptly	Yi and Gong (2013)	0.442	0.251	0.130	0.271	Omit
2	I always provide accurate information to customers	Yi and Gong (2013), Rafaeli et al. (2008)	0.781	0.347	0.120	0.121	Factor 1
3	I communicate with customers in a timely manner	Yi and Gong (2013)	0.799	0.318	0.196	0.278	Factor 1
4	I provide necessary information to my customers so that they can perform their duties	Yi and Gong (2013), Rafaeli et al. (2008)	0.855	0.194	0.173	0.107	Factor 1
5	I explain to the customers what they need to do in order to effectively use the port service	Yi and Gong (2013), Rafaeli et al. (2008)	0.819	0.066	0.175	0.318	Factor 1
6	I educate our customers how to use our information system, websites, and facilities	In-depth interview	0.207	0.134	0.852	0.230	Factor 2
7	I clearly explain port policies and guidelines to our customers	Yi and Gong (2013), Rafaeli et al. (2008)	0.178	0.539	0.336	0.540	Omit
8	I actively collect the suggestions and feedback from our customers	In-depth interview	0.350	0.346	0.741	0.483	Factor 2
9	I involve the customers into problem solving	In-depth interview	0.160	0.229	0.680	0.368	Factor 2
10	I involve our customers into our business processes (e.g., forecasting and decision making)	In-depth interview	0.216	−0.280	0.280	0.760	Omit
11	I encourage customers to participate in the service delivery process	In-depth interview	0.142	0.446	0.782	−0.011	Factor 2
12	I assist my customer when they need my help	Yi and Gong (2013)	0.382	0.138	0.059	0.116	Omit
13	I am professional and polite when interacting with my customer	In-depth interview	0.624	0.557	0.210	0.141	Omit
14	I try to make each customer comfortable	In-depth interview	0.715	0.611	0.224	0.096	Omit
15	I give the customer individual attention	In-depth interview	0.527	0.417	0.443	0.062	Omit

Notes: Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization

Source: Authors own work

About the authors

Hangjun Xu, PhD, Associate Professor of Marketing, McAfee School of Business, Union University. His research interests include marketing strategy, B2B relationship marketing and customer co-creation. His research has appeared in *Journal of Business Research*, *Industrial Marketing Management*, *Psychology & Marketing*, *Journal of Marketing Theory and Practice*, *Journal of Enterprise Information Management* and others. Hangjun Xu is the corresponding author and can be contacted at: jxu@uu.edu

Chuanyi Tang, PhD, Associate Professor of Marketing, Strome College of Business, Old Dominion University. His research interests include services marketing, consumer

well-being and consumer online communication. His research has appeared in the *Journal of the Academy of Marketing Science*, *Journal of Retailing*, *Journal of Service Research*, *Journal of Business Research*, *Journal of Public Policy & Marketing*, *Marketing Letters* and others.

Lin Guo, PhD, Associate Professor of Marketing, Strome College of Business, Old Dominion University. Her primary research interests comprise three areas: service coproduction, customer–service provider relationships and consumer social media usage and communication. Her research has appeared in the *Journal of the Academy of Marketing Science*, *Journal of Service Research*, *Journal of Business Research*, *Journal of Product Innovation Management*, *Marketing Letters*, *Decision Support Systems* and others.

For instructions on how to order reprints of this article, please visit our website:

www.emeraldgroupublishing.com/licensing/reprints.htm

Or contact us for further details: permissions@emeraldinsight.com