

Customer Participation in Services and Employee Innovative Behavior: The Mediating Role of Interpersonal Trust

Abstract

Purpose – This research aims to analyze the mechanism by which customer participation in services (CP) exerts influence on the innovative behaviors of employees. In spite of the abundant research highlighting the important role of customers in service innovation and the effect of customers' participating in product development teams on innovation, the impact of customer participation in service processes (as mandatory behaviors) on the employee innovative behavior remains to be explored. This study attempts to address such gap. Meanwhile, the mediating role of interpersonal trust in the link between CP and employee innovative behavior was also proposed and then the hypotheses were tested in a restaurant context.

Design/methodology/approach – A total of 514 valid questionnaires were collected from frontline employees or entry-level managers in 25 well-known restaurants (including 14 hotel and 11 freestanding restaurants) in Beijing, China. The relationships among CP, interpersonal trust, and employee innovative behavior were examined using structural models analyzed in AMOS 20.0.

Findings – The structural equation modeling results indicate that customers' information and emotional participation in services significantly affect the innovation behaviors of employees, whereas behavioral participation does not. In addition, the establishment of interpersonal trust between customers and employees may foster employee innovative behaviors. Moreover, affective trust mediates the effect of customer information or emotional participation in services on employee innovative behavior, but cognitive trust does not.

Practical implications – Findings indicate that hospitality firms can benefit from inspiring customers to actively participate in service co-creation; CP in terms of information is encouraged to foster employee innovative behaviors by training employees and establishing an appropriate climate for information exchange. Moreover, service firms should understand and aptly respond to customers' emotions during the service processes. Furthermore, the affective trust between customers and employees is significant to service firms, which need to take measures for employees to manage their relationships with customers well.

Originality/value – Based on the concepts of service marketing and organizational behavior, this study **makes a marginal contribution to** the research on customer-employee co-production and employee innovative behavior from an interdisciplinary perspective. The study reveals the influencing mechanism of **CP** on employee innovative behavior and contributes to the research on customer-employee interpersonal trust. Previous studies emphasized the importance of trust among work group members in innovation, while this study supports the association between customer-employee interpersonal trust and employee innovative behaviors.

Keywords – Customer participation, Services, Employee innovative behavior, Affective trust, Cognitive trust

Paper type – Research paper

1. Introduction

Hospitality firms have increasingly recognized the importance of value co-creation between customers and employees (Kandampully et al., 2014) as customer experience creation became a core of services and a determinant of firm survival and growth in the hospitality industry (Chathoth et al., 2013; Chen et al., 2015). Service-dominant logic indicates that service co-creation allows the creation of memorable experiences, and this co-creation occurs more in the customer-employee interaction process than through the service provision by firms (Grissemann and Stokburger-Sauer, 2012). The importance of customer participation in services (**CP**), as a type of co-creation, is subsequently recognized and highlighted (Chen and Raab, 2014). **CP** is conceptualized as the specific participatory behaviors of customers in services, including mental or physical efforts and resources embedded in service production and delivery (Chen et al., 2015). These behaviors are manifested in emotional, physical, and informational engagement (Li and Hsu, 2017). The inseparability of service production and consumption implies that customers participate in the processes when services are performed (Moeller, 2010). In this manner, service quality is influenced by the information and effort provided by customers (Uzkurt, 2010). Therefore, customers are encouraged to actively participate in service processes, enabling firms to strengthen competitiveness with additional resources from customers, who act as service “value co-creators” (Wu, 2011). Meanwhile, service firms are concerned about the possible influence of **CP** on employee behaviors.

The nature of CP implies that employees are inevitably affected by customers' participation. When customers participate in hospitality services, they act as partial employees who share part of the production responsibilities (Chen et al., 2015). Hence, the workload of employees may decrease (Chathoth et al., 2013). Meanwhile, customers' expectations or firms' service standards may also change because of participation behaviors (Graf, 2007). Service tasks involve considerable personal judgments, thereby presenting additional challenges to employees (Hibbert et al., 2012). In addition, CP may lead to frequent information flows (Troye and Supphellen, 2012). As a result, employees must acquire updated knowledge and skills to adapt to the changing environment (Siu et al., 2013). A high level of CP indicates numerous opportunities for employees as they encounter various demands from customers (Sørensen and Jensen, 2015). Employees could generate new ideas for service processes with the information or other resources provided by customers through their interactions (Gomezelj, 2016). When employees decide to implement a new idea, they should seek support from others, including customers (Zach, 2016). These idea application behaviors tend to occur when customers and employees have good relationships developed through CP (Kim and Cha, 2002). Although the role of **customers as innovators** or service innovation participants is recognized by researchers (Baldwin and von Hippel, 2011), **the influence of customer participation in service processes on employee innovation** is still an issue to be addressed (Li and Hsu, 2016a). Therefore, the current study aims to address the aforementioned issue by examining **how CP affects employee innovative behavior, including the mechanism behind the effects.**

The trust in the customer–employee relationship may be a key factor in relation to CP and employee innovative behavior. CP involves relationship building with employees (Chen et al., 2015). An interpersonal trust between customers and employees may emerge when customers propose additional information, actions, or emotions that concern service processes (Johnson and Grayson, 2005). Interpersonal trust demonstrates a trustor's reliance on a trustee's behaviors or confidence in the trustee's character and knowledge (McAllister, 1995). This trust may motivate employees to willingly spend a significant amount of time and energy **performing service tasks**, and stimulates them to accomplish their work creatively (Slåtten and Mehmetoglu, 2011a). Social exchange theory states that a high level of interpersonal trust signifies the ease with which a person senses the positive attitude of another (e.g., support, acceptance) (Wang et al., 2014). In return, this person tends to take actions that benefit the other party (e.g., information provision

and knowledge sharing) (Nunkoo and Ramkissoon, 2012). In this manner, the interpersonal trust between customers and employees facilitates knowledge flow that enables employees to generate ideas. Furthermore, with trust, employees are more likely to implement new creative ideas, driven by certain incentives (e.g., work performance and reward) (Hon and Lu, 2010). Thus, trust may play a role **in the association between participation in services of customers and employee innovative behavior**. However, few studies have investigated the trust derived from service co-creation and its role in employees' innovation. The current study **seeks to narrow this gap**.

Therefore, this research establishes the following objectives: to analyze the **direct effect of CP on employee innovative behavior**, and estimate the indirect effect between the two via **interpersonal trust**. By combining the concepts **from service-dominant logic and individual innovation literature in the proposed model**, this study **could deepen the understanding of service co-creation and innovation from a multidisciplinary perspective**. In addition, this research reveals how employees gain trust and support from customers when the latter exhibits participation behaviors. Hence, the findings may supplement previous research on customer relationship management.

2. Theoretical background and hypothesis development

2.1 CP and employee innovative behavior

Although defined as an individual concept, employee innovative behavior can be influenced by external factors. Employee innovative behavior is generally accepted as **a process consisting of multiple phase involving a set of behaviors** (Janssen, 2005). This concept involves idea creation, as well as support seeking from others and idea realization (Janssen, 2000). Hence, a supportive social context is necessary, particularly for the implementation of new ideas (Li and Hsu, 2016b). In the hospitality industry, an important paradigm for innovation is that customer demand serves as a driving force toward innovation (Hjalager, 2010). Customers, particularly lead users, expect service firms to anticipate and satisfy their needs, thereby prompting the firms to provide new services, new quality, or improvement in service processes (Sigala, 2012). Nevertheless, extant studies tend to focus on customers' participation as innovators per se (Ottenbacher and Harrington, 2009; Sigala, 2012), **rather than on the part of customers as service co-creators they play** in affecting employee innovative behaviors.

Social exchange theory indicates that a person decides to act a behavior by comparing the

costs and benefits associated with that behavior (Xerri, 2013). If the expected benefits of a behavior exceed the costs, then the person performs the act; otherwise, he or she does not. Whether employees perform innovative behaviors also complies with this cost-benefit principle. The benefits of employee innovative behavior may include enhanced performance, improved well-being, or even self-actualization (Aragón-Correa et al., 2007; Luoh et al., 2014; Yuan and Woodman, 2010). In contrast, the expected costs or losses of an innovative behavior negatively influence the intention of employees to engage in innovation. These negative outcomes can include excessive change, service failure, or job stress (Hjalager, 2010; Hon et al., 2013). Various factors influence employee innovation by affecting their perceived benefits and costs (Hon, 2012; Lin and Liu, 2012). Customers tend to share a few service responsibilities, and a good relationship induced by CP may relieve the tension felt by employees when they apply an innovation; thus, CP may reduce the cost and risk of employee innovative behavior (Bendapudi and Leone, 2003). Previous studies suggest that CP can present opportunities encouraging employee to generate ideas and may foster their idea-realization behaviors (Li and Hsu, 2016b). Therefore, the current study presents the following hypothesis.

Hypothesis 1. CP positively influences employee innovative behavior.

CP involves their physical, mental and emotional effort and input in service processes. In a similar manner, CP is categorized in three types, namely, emotional, behavioral, and information participations (Chen and Raab, 2014; Li and Hsu, 2017). These three aspects may all relate to employees' idea generation or implementation (Hu et al., 2009; Ottenbacher et al., 2006). Employee innovative behaviors are successful when the service expectations of customers are met and when they feel service quality has been improved (Ines and Jasmina, 2016). These expectations can be more easily understood with customer emotional participation, from tolerance to smile and from patience to kindness, which indicates different satisfaction level during service processes (Chen et al., 2015). The positive emotional influence on employees may increase the sense of personal efficacy and further facilitate innovative behaviors (Geng et al., 2014). In addition, customer behavioral participation may decrease the workloads of employees, which negatively affect employee innovation (Janssen, 2000; Tongchaiprasit and Ariyabuddhiphongs, 2016). Furthermore, CP involves considerable information input (Chathoth et al., 2016). Employee innovation relies on this information input, in that information or knowledge lies at the center of service innovation, and innovative behaviors are borne from

investigating extant problems from a different angle with external information (Fraj et al., 2015; Sørensen and Jensen, 2015). Therefore, Hypothesis 1 is analyzed based on the following:

Hypothesis 1a. *Customers' emotional participation in services positively influences employee innovative behavior.*

Hypothesis 1b. *The behavioral participation of customers in services positively influences employee innovative behavior.*

Hypothesis 1c. *Customers' information participation in services positively influences employee innovative behavior.*

2.2 Interpersonal trust between customers and employees

When customers actively participate in the services driven by potential benefits, considerable emotional interactions with employees occur naturally, bringing about the improvement of the relationship between the two parties (Castellanos-Verdugo et al., 2009). Therefore, employees may obtain additional support for innovation from customers. However, this relationship may differ from the relationship between team members because of the limited interaction time and cooperation extent (Hsieh et al., 2004). One of the factors determining the quality of the relationship between customers and employees is interpersonal trust between the two parties (Paillé et al., 2015).

The interpersonal trust between service co-creators is developed through the continued interactions between employees and customers over time. Trust is a psychological state in which a trustor has confidence in a trustee and can accept the risk and vulnerability of a certain behavior of the trustee (Hassan et al., 2012). Interpersonal trust, which describes people's belief in a person or a group, is a dynamic phenomenon that occurs at different stages of relationships (Paillé et al., 2015). Calculus-based trust occurs at the initial stage, where the cost-benefit principle makes rational participants rely on others, with the assumption that the fear of being punished prevents the violation of trust (Lewicki et al., 2006). As the relationship develops, calculus-based trust is gradually replaced by knowledge-based trust, which depends on the information about each other acquired from previous interactions. This information enables a trustor to understand and predict the trustee's actions in the future (Paillé et al., 2015). Additional exchanges further result in identification-based trust, where the trustor's interests are attended to even without potential deterrence or monitoring on the trustee (Schoenherr et al., 2015).

The interpersonal trust between customers and employees that evolves through service value co-creation may lead to positive outcomes. Customers and employees are rational traders who decide to perform an act based on its expected costs and benefits (Li and Chang, 2016). When customers actively participate in services, they build relationships with employees, exchange information with them, and share some responsibilities of the services (Campos et al., 2015). As a result, employees can acquire additional information and improve relationships with customers (Castellanos–Verdugo et al., 2009). Thus, interpersonal trust is earned through the continued interactions between the two parties (Johnson and Grayson, 2005). This trust has its affective and cognitive foundations; affective trust implies the emotional bonds between two subjects and reveals a trustee’s concern for a trustor’s interests, whereas cognitive trust relates to the assessment of the trustee’s performance based on knowledge and “good reasons” (Schaubroeck et al., 2011; Wang et al., 2014). Researchers have found that affective and cognitive trust in the workplace positively influence productivity, job satisfaction, and knowledge sharing (Hon and Lu, 2010; Paillé et al., 2015). As an imperative factor in innovation, knowledge-sharing benefits from interpersonal trust because it reduces the cost of knowledge exchange and facilitates the beneficial application of the knowledge acquired from others (Hu et al., 2009). In addition to being a necessity for knowledge transfer, interpersonal trust facilitates innovation by increasing the probability that a member’s new ideas can be understood and accepted by others (Kim and Lee, 2013). Previous studies on the contribution of customers to innovation tend to focus on customers’ provision of information, ideas, or feedback (Fang, 2008). However, the quality of relationships between customers and employees attracts much less attention. Therefore, the current study investigates the role of affective and cognitive trust **on the relationships of customer participation behaviors with** employee innovative behavior.

2.3 CP, affective trust, and employee innovative behavior

CP increases the personal interactions between customers and employees, thereby facilitating interpersonal trust building between the two parties (Chathoth et al., 2013). Customers’ participation behaviors encourage employees to contact and exchange with them profoundly (Kim and Cha, 2002). As a result, customers and employees can acquire additional information or knowledge about each other, thus making them understand and predict each other’s behaviors (Lewicki et al., 2006). Meanwhile, constant exchanges between customers and

employees generate the expectation that performing good deeds will be followed by good reactions (Cook and Rice, 2006). These predictable behaviors or expectations demonstrate the characteristics of affective trust (Johnson and Grayson, 2005). Furthermore, the emotional participation of customers may create the grounds for affective trust as customers and employees tend to care for each other and to deepen emotional connections during the co-creation process (Johnson and Grayson, 2005). Therefore, CP forms the basis of trusting bonds and stimulates the affective trust between customers and employees.

Affective trust between customers and employees may further influence their behaviors. With affective trust, customers are confident that employees would maintain the privacy of the personal information they provide and not use such information in any harmful way (Panteli and Sockalingam, 2005). Affective trust encourages information and knowledge flow between the two parties, thereby facilitating the idea generation of employees (Kim and Cha, 2002). Similarly, high levels of interpersonal trust encourage the notion that the information or ideas provided by customers can be adopted. Employees may also believe that customers support their attempt to generate new ideas and to create enhanced service experiences (Madjar and Ortiz–Walters, 2009). Thus, interpersonal trust can foster both idea generation and implementation of employees. Employees need to seek support in the idea-implementation stage, and customer trust is necessary; otherwise, the innovation may not be accepted (Carmeli and Spreitzer, 2009). After all, innovative behaviors ultimately involve risks. Customers tend to support innovation outcomes when they believe that the employees are concerned about their interests (Ruppel and Harrington, 2000). Affective trust induces employees to expect that the innovation can be achieved with customer support, and this encourages their risk-taking behaviors (Clegg et al., 2002). These considerations give rise to the following hypothesis:

Hypothesis 2. Affective trust has a mediating effect on CP and employee innovative behavior.

This hypothesis is proposed based on the direct and indirect effects and consequences of CP. Research indicates that the three dimensions of CP (emotional, behavioral and information participation) may lead to predictable behaviors or appropriate expectations for employees and may enhance the emotional connections between customers and employees (Graf, 2007; Li and Hsu, 2017). As a consequence, employees may have numerous resources (physical or emotional)

to provide customers with improved services. Thus, Hypothesis 2 is split into the following three sub-hypotheses.

***Hypothesis 2a.** Affective trust has a mediating effect on emotional participation of customers and employee innovative behavior.*

***Hypothesis 2b.** Affective trust has a mediating effect on behavioral participation of customers and employee innovative behavior.*

***Hypothesis 2c.** Affective trust has a mediating effect on information participation of customers and employee innovative behavior.*

2.4 CP, cognitive trust, and employee innovative behavior

As customers participate in service processes, they deliberately or accidentally learn, adapt to, and gradually appreciate the norms, values, and expected behavioral patterns of a firm (Chathoth et al., 2016). This process leads to two results. On the one hand, customers are familiarized with the services provided and may even perform some tasks themselves (Wu, 2011). On the other hand, the understanding of customers of their roles in services and employees' capabilities to complete the tasks can be improved through service co-creation with employees (Grissemann and Stokburger-Sauer, 2012). Customers and employees may gradually perceive that the other party can perform the tasks well based on their increased knowledge about each other. Thus, **increasing CP serves as the foundation for the cognitive trust between customers and employees** (Johnson and Grayson, 2005).

Such cognitive trust between customers and employees further facilitates employee innovative behavior. Cognitive trust is a knowledge-based type of trust (McAllister, 1995). In this context, cognitive trust indicates that customers are willing to rely on the performance of employees and are confident their abilities to solve problems or improve service processes at work (Kanawattanachai and Yoo, 2002). With cognitive trust, customers tend to support the attempt of employees to execute creative ideas in order to provide them with enhanced services (Schaubroeck et al., 2011). Cognitive trust has been known to facilitate innovation in a group context (Xerri, 2013). In a similar manner, the cognitive trust between customers and employees may increase employee innovative behaviors. Based on the aforementioned arguments, strengthened exchanges between customers and employees lead to cognitive trust when customers actively participate in services, and such trust — along with customers' knowledge

sharing and support — facilitates employee innovative behavior. These observations suggest the following hypothesis:

Hypothesis 3. Cognitive trust has a mediating effect on CP and employee innovative behavior.

The level of cognitive trust depends on one's evaluation of another's performance, and the formation of this trust relies on the abilities of employees to manage changes in the relationships concerning needs and rewards (Schoenherr et al., 2015). High level of CP (in the forms of emotion, behavior, and information) provides opportunities for employees to adapt to customers' expectations and to improve their relationships with customers (Castellanos-Verdugo et al., 2009). Similar to Hypothesis 2, three sub-hypotheses are derived from Hypothesis 3.

Hypothesis 3a. Cognitive trust mediates the association between emotional participation of customers and employee innovative behavior.

Hypothesis 3b. Cognitive trust mediates the association between behavioral participation of customers and employee innovative behavior.

Hypothesis 3c. Cognitive trust mediates the association between information participation of customers and employee innovative behavior.

3. Methodology

3.1 Questionnaire development and analysis

CP was measured using the scale developed by Li and Hsu (2017); this scale is appropriate for surveying employees in hospitality research, and it has high validity and reliability ($\alpha = 0.88$). This scale involves three dimensions: emotional (seven items), behavioral (five items), and information participations (three items). The three sub-scales are deemed applicable, corresponding to the sub-hypotheses in this study.

Among the measurement scales for employee innovative behavior, the one developed by Janssen (2000) has been extensively accepted and confirmed (Bysted, 2013; Slåtten and Mehmetoglu, 2011b). This scale evaluates employee innovative behavior by using supervisor rating or employee self-report, both having been tested as reliable (Janssen, 2005). This scale has also been tested and confirmed to be valid and reliable in the hospitality context (Li and Hsu, 2016b); thus, it was adopted in the current study.

A comprehensive scale that measures trust was developed by McAllister (1995), who used five and six items to measure affective and cognitive trust, respectively. This influential scale was adopted in the current study. The scale was adjusted so that interpersonal trust can be evaluated by employees.

A seven-point Likert scale was utilized to measure the constructs because of its precision and extensive use in hospitality research (Dolnicar and Grün, 2013). Service co-creation and innovation were explored from the perspective of employees. Customer-contact employees were asked to evaluate innovative behaviors and CP through answers ranging from “never” (= 1) to “almost always” (= 7) and show their agreement to statements of trust through answers ranging from “strongly disagree” (= 1) to “strongly agree” (= 7).

This study was designed to investigate the manner in which CP influence employee innovative behavior. The study is a typical explanatory research seeking theoretical reasoning. A quantitative survey is necessary to confirm the model derived from the literature review and fundamental theories (Hair et al., 2009). The study intends to evaluate the mediation of interpersonal trust; thus, structural equation modeling is an appropriate method to explore the relationships among multiple variables (Hair et al., 2009). AMOS software was used because of its powerful functions and user-friendliness.

3.2 Survey setting and sampling

Restaurants were set as the survey setting. Restaurants often highlight the need to serve customers and inspire employees to create and develop good relationships with customers (Castellanos-Verdugo et al., 2009). A restaurant provides a great diversity of services to customers (e.g., meal ordering and serving beverage), and employees in it constantly interact with the customers (Chathoth et al., 2013). Furthermore, restaurants attach great importance to employee innovation in response to the current rapidly changing environments (Hjalager, 2010). These characteristics make restaurants an ideal context to analyze CP and interpersonal trust, as well as their effects on employee innovative behaviors.

The present study particularly focuses on frontline restaurant employees in China. China has become an emerging market in the hospitality industry, where change and development are ubiquitous (Tian and Wang, 2010). China has experienced more than 30 years of steady increase in the number and total revenue of restaurants since 1982. However, the service quality of

restaurants has not significantly improved. Meanwhile, customers with increased experiences are eager to be active participants rather than passive buyers (Tian and Wang, 2010). Thus, research on CP with China as its context is necessary, given that CP is noted to be influenced by culture (Lloyd, 2003); however, service-co-creation research with a Chinese cultural background is limited. The current study attempts to address this issue.

The data collection was conducted in top restaurants (in terms of revenue and customer ratings) in Beijing. Prior to the questionnaire distribution, the managers of the target restaurants were initially contacted through phone calls or e-mails. A total of 80 managers (or deputy managers) from 65 restaurants were contacted, 34 (in 25 restaurants) of whom agreed to cooperate with the survey by coordinating their work schedules and arranging employees to complete the questionnaires. Employees in 25 restaurants (including 14 hotel and 11 freestanding restaurants) were engaged in the questionnaire survey based on a convenience sampling method. For each restaurant, questionnaires were personally delivered by the researchers to customer-contact employees working on the survey day. Over half of the questionnaires were completed on the spot, whereas the rest were retrieved 3 to 6 days later. All questionnaires were completed anonymously. A total of 528 valid questionnaires were eventually obtained. From this total, 14 were excluded because of evident response patterns (e.g., “strongly agree” with all items).

4. Findings

4.1 Respondent profile

Among the 514 respondents, 57.59% are females (296) and 38.33% are males; the genders of the other 21 respondents are unknown. Most of the participants ranged in age between 18 and 35 years (91.44%). The participants mainly graduated from colleges or universities (64.01%) or secondary or high schools (28.60%). In addition, the monthly income of over one-third (34.63%) of the respondents falls in the range of ¥2,000 to ¥2,999 (approximately US\$320–470). The next largest group (30.35%) earns ¥3,000 to ¥3,999 monthly. The job duties of the participants include “order taker” (26.65%), “table service” (20.62%), “host/hostess” (17.51%), “busser” (9.92%) and “food runner” (9.53%). Others perform multiple job duties. Thus, these respondents are all customer-contact employees. They “often” (= 5) serve repeat customers ($M = 5.08$, $SD = 1.475$), as indicated by the answers to the question “How often do you serve repeat customers?”

4.2 Measurement model

Descriptive statistics of the construct variables were calculated with IBM SPSS Statistics 20.0. Table 1 presents the results. Confirmatory factor analysis (CFA) was performed using AMOS 20.0, to evaluate the construct validity of the measurement instrument (Hair et al., 2009). The goodness-of-fit indices of the **overall** CFA model were derived as follows: $\chi^2 = 1938.0$, $df = 512$, RMSEA = 0.074, NNFI = 0.912, CFI = 0.920. The indices meet the recommended criteria (RMSEA should be lower than 0.08, whereas NNFI and CFI should exceed 0.9), thereby indicating an acceptable model fit (Kline, 2011). The CFA results reveal that the factor loadings of all **the** items are above 0.6. Thus, the measures correspond closely to the constructs or factors (Hair et al., 2009). Meanwhile, all **the factors have Cronbach's α values higher than 0.7** (Table 2), thereby indicating the satisfactory internal reliability for each of the constructs (Hair et al., 2009). Furthermore, the average variance extracted (AVE) values of the 6 constructs exceeds 0.5, **supporting the convergent validity of this measure**. The AVE value of each factor exceeds the squared correlation coefficients between the corresponding factor and any of the other constructs (Table 2), indicating high discriminant validity (Hair et al., 2009). Therefore, the measurement model is statistically supported.

(Insert Table 1 about here)

(Insert Table 2 about here)

4.3 Hypothesis testing

Before the hypotheses were tested, common method variance was assessed because the responses were all derived from the employees involved in this study. **Two statistical methods were adopted to investigate this possibility (i.e., common method bias), including** the Harman's one-factor test and the correlation matrix (Aragón-Correa et al., 2007). Harman's one-factor test was performed **by loading each of the construct items used in this study into an unrotated factor analysis. The test indicates that the variances explained by one factor account for 43.76%, which is lower than the required value (50%)**. In addition, the partial correlation adjustment results show that the corrected correlation coefficients of the different relationships are lower than the original values (see Table 3), and the differences between the two (values in Columns 2 and 3) are minimal. Thus, the results of this study are not significantly influenced by common method variable effect, and there is common method bias (Aragón-Correa et al., 2007).

(Insert Table 3 about here)

To test the mediating role of interpersonal trust (i.e., affective and cognitive trust) in the **association** between the three factors of **CP** and employee innovative behavior, a series of structural models is necessary to estimate direct and indirect effects: (1) Model 1 predicts employee innovative behavior (outcome variable) from **CP** (predictor variable); (2) Model 2 involves the regression paths from **CP** to affective/cognitive trust (the mediator) and from trust to employee innovative behavior; and (3) Model 3 **treats employee innovative behavior as the endogenous variable, with the paths from all the other variables (those measuring CP and interpersonal trust). Two basic criteria must be satisfied if a complete mediation relationship is achieved:** (1) the path coefficients in Models 1 and 2 are significant, and (2) the contribution of trust to the variability in employee innovative behavior (Model 3) significantly decreases the residual strength of the relationship between **CP** and employee innovative behavior (Field, 2013). Table 4 presents the fit results of the three models and the path coefficients together with the *t*-values. The goodness-of-fit indices of the **three** models approximately meet the cutoff criteria ($RMSEA < 0.08$; $NNFI, CFI > 0.9$). Thus, the three models adequately fit the data (Kline, 2011).

The **coefficient estimates, *t*-values and standardized coefficients (β)** in Model 1 (Table 4) **suggest** that customers' emotional and information participation in services positively influence employee innovative behavior. However, behavioral participation of customers does not significantly influence employee innovative behavior ($\beta = 0.09$, $t = 1.79$, $p = 0.07 > 0.05$). Therefore, affective or cognitive trust does not mediate the **link** between behavioral participation and employee innovative behavior. Thus, Hypotheses 1b, 2b, and 3b are not supported.

Models 2 and 3 are also analyzed to assess whether interpersonal trust **has a mediating effect on** customer emotional or information participation and employee innovative behavior. The results of Model 2 illustrate that all three dimensions of **CP** are significantly associated with interpersonal trust. In addition, **the regression paths to employee innovative behavior from two factors of interpersonal trust – affective trust ($\beta = 0.48$, $t = 6.73 > 1.96$) and cognitive trust ($\beta = 0.36$, $t = 5.13 > 1.96$) – are significant.** However, in Model 3, the significant relationships between customer emotional or information participation and employee innovative behavior are not supported, and the standardized path coefficients are lower than those with Model 1 (Table 4) possibly because of interpersonal trust.

(Insert Table 4 about here)

Sobel tests were conducted based on the structural models. The results in Table 5 show that affective trust plays a mediating role in the effect of information participation on employee innovative behavior ($z = 2.04, p < 0.05$), as well as emotional participation on employee innovative behavior ($z = 1.96, p < 0.05$). The indirect effect values (0.48 and 0.18) in both cases lie between zero and one, which indicate acceptability (Field, 2013). Therefore, Hypotheses 2a and 2c are supported.

(Insert Table 5 about here)

The chi-square of Model 2 ($\chi^2 = 2159.5, df = 516$) is higher than that of Model 3 ($\chi^2 = 2116.4, df = 513$) (Table 4). However, the chi-square differences in the two models are not significant ($\Delta\chi^2 = 43.1, \Delta df = 3$). Thus, compared with Model 2 (full mediation), the fit of Model 3 (partial mediation) has not been significantly improved after adding the three hypothesized paths. Hence, Model 2 (with substantial parsimony) is accepted as a better choice than Model 3 because of the insignificant chi-square differences and the non-significant relations in the partial mediation model (Kline, 2011). In other words, interpersonal trust acts more as a full mediator than a partial mediator between information or emotional participation and employee innovative behavior. Meanwhile, perfect mediation occurs for affective trust, in that, the effect of CP diminishes to zero with the introduction of affective trust (Field, 2013). For example, information participation of customers significantly affects employee innovative behavior in Model 1 ($\beta = 0.34, t = 4.72, p < 0.01$). Nevertheless, the effect becomes insignificant ($\beta = 0.25, t = 0.76$) in Model 3. Similarly, affective trust acts as a perfect mediator in the association between emotional participation of customers and employee innovative behavior. In other words, emotional or information participation affects employee innovative behavior through affective trust (perfect mediator).

In contrast, the Sobel test results (Table 5) reveal that cognitive trust does not mediate the association between emotional participation of customers and employee innovative behavior ($z = 1.36, p > 0.05$) or the effect of information participation on employee innovative behavior ($z = 1.40, p > 0.05$). Therefore, Hypotheses 3a and 3c are not confirmed.

In conclusion, the research findings indicate that customer emotional and information participation positively affect employee innovative behavior, whereas behavioral participation does not. Meanwhile, affective trust mediates the impact of CP on employee innovative behavior,

but cognitive trust does not (Figure 1 only shows the direct but not the indirect effects). The effects and path coefficients are shown in Figure 1.

(Insert Figure 1 about here)

5. Discussion and conclusions

5.1 Conclusions

This study aims to build a theoretical link between customers' participation in services and **innovative behaviors of employees** by considering the role of interpersonal trust. The research provides meaningful conclusions.

Customers' emotional participation in services significantly influences employee innovative behavior. This finding significantly contributes to the research on **the impact of emotion on innovation**. Previous **research suggests** that the positive emotions of employees **lead to high level of** motivation to innovate (Amabile et al., 2005). Further research indicates that the emotions of employees may be influenced by their exchanges with customers during service co-creation (Hsieh et al., 2004). The current study finds that the emotional participation of customers also influences employee innovative behaviors; and, it **may exert** a stronger effect on innovation than the other two forms of **CP**.

Customer and employee information exchanges also **positively associate with** employee innovative behavior. Customers' information participation in services involves their information seeking and provision behaviors, and both may influence the information or knowledge sharing between customers and employees (Lloyd, 2003). **Previous research has emphasized the important role of knowledge sharing and exchange among co-workers in fostering innovative behaviors of employees** (Hu et al., 2009). The research findings of the **current** study can attract further attention to research on the **customer-employee exchanges** in services.

Customers' behavioral participation failed to significantly affect employee innovative behaviors. Most studies have supported the positive outcomes of **CP**; however, several studies have indicated negative effects, such as intervention to service processes and role conflict of employees (Chan et al., 2010; Hsieh et al., 2004). The outcomes of different forms of **CP** may vary. The current study shows that the relationship between the behavioral dimension of **CP** (but not emotional or information participation) and employee innovative behavior is insignificant. This finding may be related to the notion that the best services **rely on** skilled employees, with as

limited intervention from customers as possible (Chan et al., 2010). As a result, customers' excessive behavioral participation may result in uncertainty to service production (Li and Hsu, 2017).

Customer information and emotional participation in services influence employee innovative behavior via the effect of affective trust, which acts as a perfect mediator in the **association**, whereas cognitive trust does not **mediate the association between CP** and employee innovative behavior. **CP can be** a means to achieve affective trust. Without this emotional phenomenon, more **CP** does not increase the innovation of employees. Cognitive trust appears to play **an insignificant** role in innovation of employees. However, additional data are needed to find the reasons for the differences between the two types of trust.

5.2 Theoretical implications

This study incorporated the concepts of **service-dominant logic and individual innovation literature** in the research framework, thereby **bringing about** a multidisciplinary contribution to the **study of** customer service co-creation and employee innovative behavior. Research findings partially support the positive **association of CP with** employee innovative behavior. The results of the positive relationships between customer emotional or information participation and employee innovative behavior supplement emotion-related research and social exchange perspective studies in innovation. The significant effect of behavioral participation on employee innovation is not supported. Thus, different forms of **CP** should be treated differently and specifically. The findings of this study are most applicable to contexts similar to the data-collection sites — highly regarded restaurants involving high-level services — where employees **take pride in** their professional services (Bendapudi and Leone, 2003).

This study reveals the influence of **CP** on employee innovative behavior, and contributes to customer-employee trust related research. The findings indicate besides the trust between employees and their co-workers or supervisors (Carmeli and Spreitzer, 2009), interpersonal trust between employees and customers may enhance innovative behaviors. This type of trust is important because it mediates the **impact of CP** on employee innovative behavior. Moreover, the scale of the trust between customers and employees based on McAllister (1995) (with some adjustments) has high reliability and validity, which may provide implications for future research on this type of trust.

5.3 Practical implications

CP tends to facilitate innovative behaviors of employees. Service firms can offer opportunities for customers to engage in service creation and provision in terms of emotion and information. The factors that stimulate CP, such as organizational socialization and supportive behaviors (Wu, 2011), can be adopted to further foster employee innovative behaviors. Firms must pay attention to customer emotional participation in services. It is important to enhance customers' positive emotions during their service consumption (Rodie and Kleine, 2000). In view of this notion, managers can take measures such as showing empathy for their customers and strengthening customer relationship. In turn, stimulating the positive emotions of customers can be rewarded with increased employee innovative behaviors. In addition, firms can encourage information participation in services of customers. Employees can be trained to effectively obtain beneficial information from customers and exchange necessary information with customers. Meanwhile, establishing an appropriate climate for information exchange is equally important. For example, soft lighting and music can be designed for customers and employees to feel comfortable communicating with each other in a casual environment. Interactive activities, such as service contests, can also be provided to involve customers and to encourage CP in terms of information. For example, managers can arrange table setting contests and tea-making and then ask customers to be judges.

The affective trust between customers and employees is significant to employee innovative behavior and should be highlighted by service firms. Building affective trust between customers and employees is an effective approach to encourage employee innovative behavior. Firms can train employees to exchange with customers effectively and well manage customer relationships (e.g., by building personal relationships) or use specific activities (e.g., interactive games, indoor exercises) to optimize the frequency of interaction between employees and customers to develop affective trust (McAllister, 1995).

5.4 Limitations and Future Research

This study is subject to many limitations, which can inform and direct future research. For example, the generalizability of the findings may be limited because of the sampling of employees in hotel and freestanding restaurants with high customer ratings. The nature of the

sample may have affected the results (e.g., behavioral participation does not lead to employee innovative behavior). The sample lacks a broad representativeness of all types of restaurants in China. Thus, the research findings may be inapplicable to all restaurant firms with various levels of customer service and innovation systems. Further investigation on this research topic should consider other contexts.

When the service co-creation of customers and employees is considered, employee discretion in making decisions and initiatives to take actions are important. In this study, employee empowerment and engagement, which are important factors for innovation, are not discussed. These factors are critical to determine whether employees are open to creatively responding to customers (Slåtten and Mehmetoglu, 2011b). Employees must be empowered so they can identify and seize service improvement opportunities (Bhatnagar, 2012). When employees are engaged and empowered, they may solicit significant engagement and hence participation in services from customers (Luoh et al., 2014). Employee empowerment may foster both CP and employee innovative behavior and act as an antecedent (Bhatnagar, 2012). Hence, this topic is crucial for future research.

Different types of customers should also be sampled. This study investigates the influence mechanism of CP on employee innovative behavior. However, the degree of participation may vary among different customers, especially between first-time and repeat customers. The participation level in the services of repeat customers is generally higher than that of first-time customers (Chathoth et al., 2016). Furthermore, the relationships of these two types of customers with employees (e.g., characterized in the level of trust) may differ. Thus, future research can use samples of customers with different experiences and examine their potential effects on employee innovative behaviors.

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Table 1 Results of descriptive statistics and CFA

Constructs /Factors	Mean	SD	Factor loadings	t-value
Emotional participation				
EP1: Customers smile at me and offer me words of kindness.	4.46	1.66	.87	NA
EP2: Customers are courteous to me.	4.50	1.70	.91	29.86
EP3: Customers try to be cooperative with me.	4.43	1.62	.86	26.74
EP4: Customers are friendly to me.	4.51	1.65	.90	29.61
EP5: Customers respect restaurant policies such as no-smoking, avoiding taking the reserved seats of others.	4.36	1.81	.73	20.17
EP6: Customers are willing to wait for a while when a service is not ready.	4.25	1.66	.75	20.92
EP7: Customers show their understanding of problems that are out of my control.	4.27	1.63	.69	18.43
Behavioral participation				
BP1: Customers engage in diagnosing and resolving service-related problems.	4.19	1.57	.81	16.70
BP2: Customers do things to make my job easier.	4.03	1.51	.84	17.30
BP3: Customers save my time by serving themselves.	3.80	1.60	.83	17.11
BP4: Customers spend time to learn how to use a service they are not familiar with.	3.95	1.76	.74	15.49
BP5: Customers ask for me by name.	4.04	1.68	.69	NA
Information participation				
IP1: Customers clearly explain what they want me to do.	4.19	1.63	.84	NA
IP2: Customers provide necessary information so that I can perform my duties.	4.17	1.68	.85	23.10
IP3: Customers answer all my service-related questions.	4.14	1.65	.82	21.89
Employee innovative behavior				
EIB1: Create new ideas for difficult issues.	4.28	1.53	.84	28.59
EIB2: Search out new working methods, techniques, or instruments.	4.29	1.57	.85	28.89
EIB3: Mobilize support for innovative ideas.	4.15	1.53	.88	31.41
EIB4: Generate original solutions for problems.	4.26	1.54	.91	34.46
EIB5: Acquire approval for innovative ideas.	4.27	1.58	.92	NA
EIB6: Make important organizational members enthusiastic for innovative ideas.	4.25	1.65	.91	34.62
EIB7: Transform innovative ideas into useful applications.	4.24	1.62	.90	33.91
EIB8: Introduce innovative ideas into the work	4.19	1.64	.86	30.23

environment in a systematic way.				
EIB9: Evaluate the utility of innovative ideas.	4.24	1.61	.85	29.16
Affective trust				
AT1: Customers and I have sharing relationships. We can freely share our ideas, feelings, and hopes.	4.26	1.55	.83	24.88
AT2: Customers can talk freely to me about difficulties they have and they know that I will want to listen.	4.19	1.59	.85	25.96
AT3: Customers and I would feel a sense of loss if they are no longer served by me or they never come again.	4.25	1.64	.81	23.60
AT4: If customers share their problems with me, they know I would respond constructively and caringly.	4.20	1.57	.87	27.17
AT5: Both customers and I have made emotional investments in our relationships.	4.19	1.56	.87	NA
Cognitive trust				
CT1: Customers perceive that I approach my job with professionalism and dedication.	4.32	1.64	.90	NA
CT2: Given the track record of my performance, customers have no reason to doubt my competence and preparation for the job.	4.32	1.60	.90	32.42
CT3: Customers rely on me not to put them in difficult situations by careless work.	4.31	1.60	.91	33.17
CT4: Most people, even those who aren't close friends of mine, trust and respect me.	4.39	1.66	.88	30.71
CT5: If customers know more about me and my background, they would be more concerned and monitor my performance more closely.	4.23	1.65	.81	25.18

Table 2 Correlations, reliability and AVE

	EP	BP	IP	EIB	AT	CT
EP	1					
BP	.49(.24)	1				
IP	.70(.49)	.58(.34)	1			
EIB	.64(.41)	.47(.22)	.61(.38)	1		
AT	.61(.37)	.49(.24)	.64(.41)	.75(.56)	1	
CT	.63(.40)	.37(.14)	.64(.40)	.75(.57)	.83(.69)	1
α	.93	.89	.88	.97	.93	.95
AVE	.67	.62	.70	.77	.72	.78

Note: All correlations are significant at $p < .01$. Values in parentheses represent squared correlations.

Table 3 Results of common method variance assessment

Paths	Original r	Corrected r
Emotional participation → employee innovative behavior	.639**	.638**
Behavioral participation → employee innovative behavior	.465**	.463**
Information participation → employee innovative behavior	.614**	.613**
Emotional participation → affective trust	.607**	.605**
Behavioral participation → affective trust	.493**	.492**
Information participation → affective trust	.643**	.642**
Emotional participation → cognitive trust	.630**	.629**
Behavioral participation → cognitive trust	.370**	.367**
Information participation → cognitive trust	.635**	.634**
Affective trust → employee innovative behavior	.747**	.746**
Cognitive trust → employee innovative behavior	.752**	.751**

Table 4 Results of mediation effects of trust

	Standardized path coefficients and (t-values)		
	Model 1	Model 2	Model 3
Model fit	$\chi^2(df)= 1281.8(246)***$ RMSEA=.081, NNFI=.902, CFI=.913	$\chi^2(df)= 2159.5(516)***$ RMSEA=.079, NNFI=.900, CFI=.908	$\chi^2(df)= 2116.4(513)***$ RMSEA=.078, NNFI=.902, CFI=.910
EP → EIB	.36 (6.42**)		.01 (1.08)
BP → EIB	.09 (1.79)		.16 (.88)
IP → EIB	.34 (4.72**)		.25 (.76)
EP → AT		.72 (5.79**)	.75(5.65**)
BP → AT		.38 (5.76**)	.71 (5.85**)
IP → AT		.19 (9.31**)	.23 (9.87**)
EP → CT		.31 (4.95**)	.77 (5.03**)
BP → CT		.08 (7.00**)	.13 (7.06**)
IP → CT		.12 (9.30**)	.27 (9.35**)
AT → EIB		.48 (6.73**)	.49 (2.09*)
CT → EIB		.36 (5.13**)	.68 (1.41)

Note: (1) EP: Emotional Participation; BP: Behavioral Participation; IP: Information Participation; EIB: Employee Innovative Behavior; AT: Affective Trust; CT: Cognitive Trust. (2) Model 1 = direct effects; Model 2 = full mediation; Model 3 = partial mediation. (3) Values in parentheses represent t values. (4) *p<.05, **p<.01, ***p<.001

Table 5 Results of Sobel test

Relationships	Effect	z	P
EP → AT → EIB	0.18	1.96	0.05
IP → AT → EIB	0.48	2.04	0.04
EP → CT → EIB	0.37	1.36	0.17
IP → CT → EIB	1.09	1.40	0.16

Note: “EP → AT → EIB” means the mediating effect of affective trust between customers’ emotional participation and employee innovative behavior. The other three relationships also represent mediating effects.

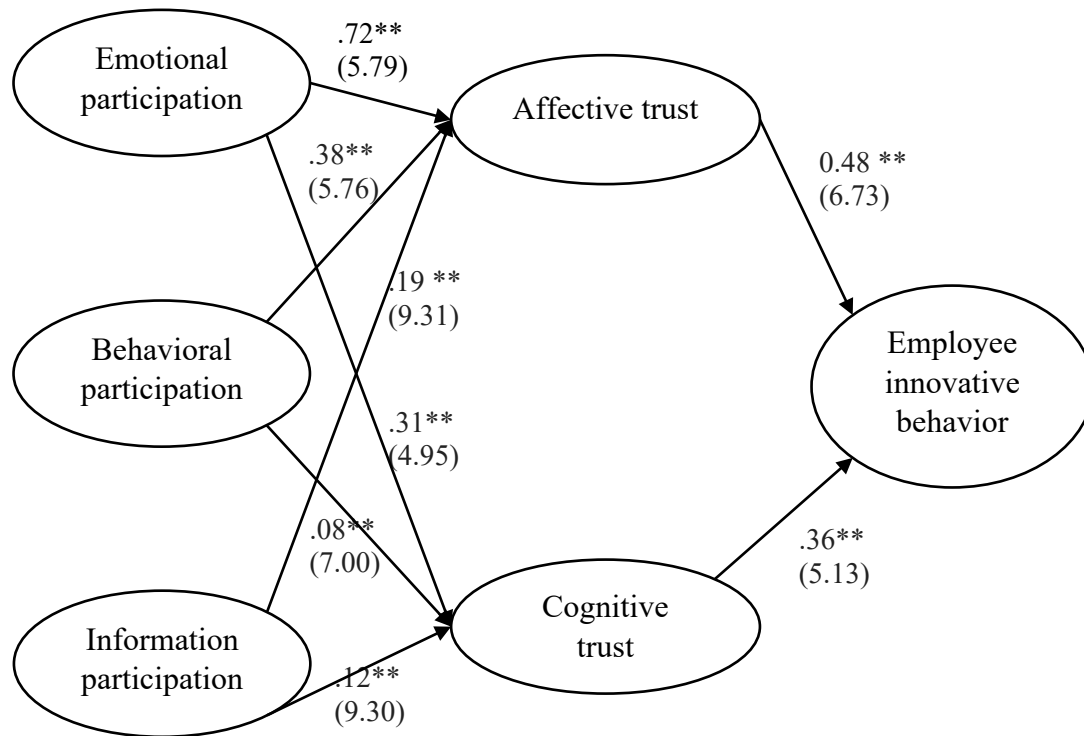


Figure 1 Overall structural model of the study