Customer Participation in Services and its Effect on Employee Innovative Behavior

Abstract

Customer participation in services has received increasing attention in hospitality research. Despite the growing attention, research on perceived customer participation (PCP) from an employee perspective remains limited. It is valuable to inspect the service dominant logic from the perspective of employees. Thus, this study attempts to develop a measurement scale for PCP. The effect of PCP on employee innovative behavior (EIB) is also examined from a hospitality context. Both qualitative and quantitative methods are used to address the research problem. Three dimensions of PCP are identified, and the high reliability and validity of the scale are confirmed. The analysis based on the main survey data from 514 restaurant employees also reveals that customer information and emotional participation positively affect EIB, whereas the relationship between behavioral participation and EIB is insignificant. The research findings carry implications for research on PCP and the management of EIB in hospitality firms.

Keywords: Customer participation; employee innovative behavior; hospitality; services

INTRODUCTION

The importance of customer value co-creation to hospitality firms has drawn significant attention. Customers are not simply passive buyers; they have become increasingly involved in the value creation in service firms (Shaw, Bailey, & Williams, 2011). This involvement, along with attitudinal and behavioral elements, has been referred to as customer participation (Chen, Raab, & Tanford, 2015; Sigala, 2013). Customer participation in services is embodied in expected behaviors required for the successful production and delivery of the services, such as showing their presence and providing necessary information (Groth, 2005). Customer participation is a type of in-role behavior, which is mandatory for service transaction (Yi & Gong, 2013), although the levels of participation vary depending on customers and service settings (Solnet & Paulsen, 2006). It is rather similar to the concepts of customer contact and engagement. However, these concepts have distinctions. Customer contact describes the extent to which customers encounter the service systems and defines the direct communication or exchanges between customers and employees (Foster, Sampson, & Dunn, 2000). When the amount of time that a customer serves himself/herself in the service delivery process represents higher percentages of the total service time, the level of customer contact is higher (Rodie &

Kleine, 2000). On the contrary, customer participation is not restricted to the boundaries of service encounters because it also concerns the effort and contributions of customers to the service production and delivery (Rodie & Kleine, 2000). More customer contact (encounter) does not necessarily means more customer participation (input in services).

Another related but different concept, customer engagement, is a psychological process with engagement activities and a manifestation toward a firm or brand beyond service transactions (Van Doorn et al., 2010). By contrast, customer participation involves customers' behaviors occurring within service processes in order for them to obtain their expected service outcomes (Chen & Raab, 2014). Customer engagement is the result of various behaviors (e.g., word-of-mouth activity, advocacy, and customer-to-customer interactions), while customer participation describes mandatory behaviors caused by the simultaneity of service production and consumption (e.g., specify how food will be served) (Bowden, 2009; Lloyd, 2003).

Customer participation is a crucial factor for hospitality services that affects final service outcomes. Because of the inseparability and intangibility of the hospitality services, customers are required to participate in services and exchange with employees (Kandampully, Keating, Kim, Mattila, & Solnet, 2014; Sigala, 2013). Customer participation in services can substitute for labor and be external resources for service production (Ford & Heaton, 2001). It may positively influence service quality as well as customer satisfaction (Grissemann & Stokburger-Sauer, 2012; Namasivayam & Guchait, 2013). Service innovation performance can also be enhanced because of customer participation (Chen, Tsou, & Ching, 2011). Therefore, an increasing number of hospitality firms have sought to create an atmosphere that encourages customers to participate in service processes (Chathoth, Altinay, Harrington, Okumus, & Chan, 2013; Grissemann & Stokburger-Sauer, 2012).

The effects of customer participation on firm performance depend largely on how employees perceive these behaviors and respond to them. The effect of customer participation on employees cannot be ignored because customer participation involves the interaction of customers with employees (Ennew & Binks, 1999; Cetin & Walls, 2015). The effects of customer participation on customer- (e.g., perceived service quality and satisfaction) and firm-related outcomes (e.g., productivity and performance) have been discussed extensively in the hospitality context (Auh, Bell, McLeod, & Shih, 2007; Hyun, 2010; Wang, Wang, & Zhao, 2007). In comparison, the effects of customer participation on employee-related outcomes have attracted considerably less attention (Yi, Nataraajan, & Gong, 2011); and this has gradually begun to receive interest from researchers (Hsieh & Yen, 2005; Yi et al., 2011). For example, Hsieh and Yen (2005) surveyed employees' perceived job stress caused by different levels of

customer participation. Although they measured customer participation from an employee perspective, previous scales based on a customer perspective were used. Research indicates that employees may perceive customers' role in services differently as customers do because of different standpoints and service interactions (Loo, Boo, & Khoo-Lattimore, 2013). Thus, to examine how employees' PCP affects their behaviors, a valid and reliable measurement of PCP must be developed. It is valuable to inspect the service dominant logic from the perspective of employees. This is the focus of the current study.

Among employee behaviors, innovative behavior is important for hospitality firms, and it can be affected by customer participation. Employee innovative behavior (EIB), which refers to employees' intentional behaviors that lead to new products, production methods, organizational structures, or other work-related results, is the foundation of organizational innovation; it is widely regarded as a process with multiple stages, such as idea generation and implementation (Scott & Bruce, 1994; Slåtten & Mehmetoglu, 2011; Kim & Lee, 2013). EIB is crucial to organizational survival, growth, and performance (Campo, Díaz, & Yagüe, 2014; Kim & Lee, 2013). Customer-contact employees play an important role in firm innovation; they may generate innovation acceptable to customers because their interaction with customers allow them to easily determine preferable alternatives that can solve service problems or improve service processes (Li & Hsu, 2016a; Slåtten and Mehmetoglu, 2011). Previous studies have examined customer participation in firm innovation process (either as idea source or as innovation team members) and its influence on innovation performance or customer related outcomes (e.g., market acceptance) (Duverger, 2011; Frehse, 2006; Li & Hsu, 2016a; Sigala, 2012). However, minimal research has focused on the effects of customer participation in services on EIB. It is of merit to do so when service co-creation becomes a trend and co-innovation attracts increasing attention (Lee, Olson, & Trimi, 2012). Investigating the impact of customer participation on EIB becomes the second aim of the present study.

LITERATURE REVIEW

Measurement of perceived customer participation

Measuring customer participation is important for related studies but difficult because of the complexity of customer behaviors and the differences in customer involvement among service contexts. Customer participation can be measured by their contributions to service quality, particularly technical quality (i.e., what they do) and functional quality (i.e., how they do what they do) (Kelley, Donnelly, & Skinner, 1990). Based on customers' actions and

resources, Lloyd (2003) measured customer participation with two dimensions, namely, "behavior" and "information," including 10 items (e.g., effort and time). From the standpoint of interaction between customers and the firm, customer participation can be measured by three dimensions, namely, information sharing, responsible behavior, and personal interaction (Ennew & Binks, 1999). Bettencourt and Brown (1997) measured customer participation using three dimensions based on their roles as promoters of the firm, co-producers of services, and consultants to the organization. Focusing on customers' input and roles in participation, Zolfagharian and Sheng (2012) developed a five-dimension scale based on a study in three settings (i.e., self-checkout, toy assembly, and meal assembly). Customer participation involves the actions and resources of customers in service processes. Based on this description, Chen and Raab (2014) measured customer participation as attitudinal, informational, and actionable participation. A sufficient number of studies have been conducted on the identification and measurement of customer participation from a customer perspective (Table 1). Although customer participation is viewed as a means for value co-creation of both customers and service providers, few studies have approached this concept from an employee perspective.

(Insert Table 1 Here)

Developing a new scale for PCP from an employee perspective is necessary. Many items from previous scales are not appropriate for an employee survey. For instance, the frequently cited scale by Kellogg et al. (1997) includes a dimension measuring the "preparation" by customers. Employees cannot possibly evaluate customers' preparation before their participation in service processes. Customers can exert effort for services outside the service areas, but employees' PCP focuses on customers' behaviors on service sites (Loo et al., 2013; Santos-Vijande, López-Sánchez, & Pascual-Fernández, 2015). The dimension on information exchange usually includes items such as "I have searched for information on where this service is located" (Yi & Gong, 2013, p.3). Similar items cannot be used for employee-related studies, as they do not occur during face-to-face service processes. Some existing scales also only reflect certain types of customer participation (Groth, 2005); thus further examination is needed. More importantly, employees' PCP may differ from that of customers in terms of levels of participation and contributions/responsibilities to service outcomes (Claycomb et al., 2001; Hsieh & Yen, 2005). Furthermore, identifying employees' perceptions is valuable because of their important role in services. Some researchers have designed customer participation scales for their studies but neglected to provide details on their scale development (Claycomb et al., 2001), and following a rigorous scale development process is necessary (Churchill, 1979). Thus,

the present study attempts to develop a scale for PCP.

Customer participation in services and employee innovative behavior

The nature and essence of customer participation indicate that it may affect EIB. Customer participation in services is described as "a behavioral concept that refers to the actions and resources supplied by customers for service production and/or delivery" (Rodie & Kleine, 2000, p.111), which include their physical, mental, and emotional inputs (Uzkurt, 2010). Customer participation represents the effort exerted by customers during service production and delivery processes (Lloyd, 2003). The degree of this effort is reflected by the amount of energy invested and time spent by customers in services (Lloyd, 2003). In general, customers' effort in services positively relates to their expected outcomes, such as convenience and cost reduction (Bowden, 2009). Customer participation can be in the form of external resources and may bring benefits, such as performance enhancement, to hospitality firms (Chathoth et al., 2013; Lugosi, 2007). These external resources are called social capital by researchers (Bolino, Turnley, & Bloodgood, 2002). According to the social capital theory, social capital derived from customer participation leads to collaborative work between customers and employees and facilitates the flow of information between them (Bolino et al., 2002), which is an important driver for innovation (Hu, Horng, & Sun, 2009; Kim & Lee, 2013). EIB is also affected by contextual factors (Bysted, 2013); and customers are important sources of these factors. Customers' participation are the common ways through which they influence EIB, which includes both idea generation and implementation (Li & Hsu, 2016b; Yi et al., 2011).

Customer participation in services may present opportunities that sequentially encourage employees to generate new ideas. First, customer participation in services may increase the probability of idea generation, which may be transformed into EIB (Scott & Bruce, 1994). Customers acting as innovators has been recognized and this role is more prominent because of customer participation (Sigala, 2012; Thomke & Von Hippel, 2002). Second, customer participation can inspire employees' creative thinking by facilitating their opportunity exploration. Obtaining ideas or information from customers using common methods (e.g., structured inquiry mechanisms) has become increasingly difficult, which limits customers' contributions to innovation (Bowden, 2009). Customer participation enables employees to understand customers' internal needs because of the natural service exchange settings (Campos, Mendes, Valle, & Scott, 2015). Customers' potential ideas are often developed in real service transactions (Kandampully et al., 2014). Employees can competently understand customers and work-related problems when they learn how customers contribute information,

efforts, and other resources to services (Yi et al., 2011). From this angle, frontline employees can generate new ideas by discerning customers' insights (Kleysen & Street, 2001). New challenges or problems that occur with increasing customer participation are also possible sources of new ideas (Drucker, 2007). Finally, customer participation can stimulate employees' capabilities to innovate. By co-producing services with customers, employees can transform the information acquired into knowledge (Hallin & Marnburg, 2008). Employees may generate ideas because of such learn-by-doing method (Hu et al., 2009). Thus, a positive relationship may exist between PCP and employee idea generation.

Customer participation in services may also facilitate employee idea implementation. Different from idea generation, idea implementation is completed more in a social context than by one person alone (Krizaj, Brodnik, & Bukovec, 2014), requiring support for innovation, which includes support from customers in service transactions (Lai, Lui, & Hon, 2014). Support-seeking, socialized behaviors and prototypization during idea implementation are facilitated by customer participation because customers act as partial employees and share responsibilities of services (Bendapudi & Leone, 2003; Ennew & Binks, 1999). Thus, customer participation in services may increase innovation acceptance and reduce innovation resistance, which may encourage the risk-taking behaviors of employees (Janssen, 2000; Ottenbacher, 2007; Victorino, Verma, Plaschka, & Dev, 2005). In particular, for the realization of new services, PCP positively affects the quality of the new services and innovation performance (Ottenbacher, Shaw, & Lockwood, 2006). Hence, PCP may facilitate employee idea generation as well as implementation, giving rise to the following hypothesis:

H1. PCP has a positive effect on EIB.

METHODOLOGY

Based on the research focus, a measurement scale for PCP is developed, closely following the process suggested by Churchill (1979) to ensure construct reliability and validity. This process involves eight steps: (1) specifying the construct domain, (2) generating sample items, (3) improving content validity, (4) purifying the measure (with data of a pilot study), (5) collecting data, (6) assessing reliability with new data, (7) assessing construct validity, and (8) developing the norms. The first four steps are explained in the next section, and lead to a three-factor and 15-item scale. The remaining four steps are outlined in the main survey section.

A questionnaire was designed to improve/confirm a PCP scale and investigate the impact of PCP on EIB. EIB was measured by the scale developed by Janssen (2000). This

measurement scale was based on the influential research by Scott and Bruce (1994), further confirmed by Janssen (2005), and widely accepted in extant studies (Baer, 2012; Bysted, 2013). The scale focuses on various innovative behaviors of employees at work, and is consistent with the concept in the current study. This scale was originally designed for managers and subsequently tested as reliable by employees (Bysted, 2013) as well as in the hospitality industry setting (Slåtten & Mehmetoglu, 2011). The current study asked employees to rate the extent to which they exhibit innovative behaviors at work. Respondents were asked to evaluate all items with frequency from "never" (1) to "always" (7).

The concept of EIB refers more to innovation by ordinary employees than that implemented by R&D departments or executive committee members. Thus, the target respondents for the questionnaire were frontline employees (or entry-level managers). These people deliver services directly to customers and have frequent interactions with them. The survey setting for this study is restaurants, which include hotel restaurants and freestanding restaurants. The catering industry has emphasized the importance of innovation because of the fast-changing business environments (Hjalager, 2010; Rodgers, 2007). The latest advanced technologies and applications, which are used to provide customers with good experiences, are evident in restaurants. An increasing number of restaurants create a supportive atmosphere for innovation, and their innovation processes may differ from those of other industries (Hjalager, 2010; Ottenbacher & Harrington, 2009). Customers involve much in restaurants services (e.g., table services), and restaurant employees constantly interact with them (Chathoth et al., 2013). Hence, the restaurant setting is appropriate for examining PCP as well as its effect on EIB.

SCALE DEVELOPMENT FOR PERCEIVED CUSTOMER PARTICIPATION

Specification of the construct domain

Customers participate in services in various forms, but some of these forms cannot be observed by employees. For example, customers search for information on a certain service before making a purchase decision or learn how to perform the service in private. These behaviors demonstrate the effort of customers to participate in services. However, these behaviors are not reflected in employees' perceptions because they occur beyond the observation of employees. Therefore, PCP is limited to the attitude or behaviors of customers in services when customers and employees interact with each other. The interaction among customers is also excluded from PCP for the same reason. Some of these behaviors (e.g., a customer helping another customer) are actually customer citizenship behaviors rather than

customer participation behaviors (Groth, 2005). Thus, in this study, customers' effort before participating in services, their actions performed without the presence of employees, and customer–customer interactions in services were not included in measuring employees' PCP.

Apart from the actions customers perform in service processes, the resources customers contribute to the services, such as information provision (Claycomb et al., 2001) and emotional input (e.g., showing friendliness to employees) (Yi & Gong, 2013), should also be included as PCP. The present study adopted the definition of customer participation by Rodie and Kleine (2000), which included both the resources and actions that customers contribute to the services. All input of customers in service processes that employees can observe and evaluate was considered when measuring employees' PCP.

Generation of items

The item pool for the construct was developed based on the construct domains specified in the previous subsection. Generally, measurement items can be derived from previous studies, experience surveys, and qualitative insights prompting examples (e.g., critical incidents and focus groups) (Churchill, 1979). The items in the present study were derived from the literature and a qualitative study using in-depth interviews.

Items from previous studies

Rodie and Kleine (2000) claimed that customer participation in services includes both actions and resources of customers that indicate their physical, mental, and emotional inputs in services. Thus, PCP mainly manifests actions, information, and attitude (Chen & Raab, 2014). The measurement scale provided by Chen and Raab (2014), which was based on a restaurant setting, complies mainly with this definition and has been tested as reliable. However, some items in the scale measure customers' behaviors beyond their participation in service processes. Items, such as "I ask people I know for their opinions about the restaurant," measure information-seeking behaviors of customers before they avail of services (Chen & Raab, 2014, p.11), which may not constitute employees' PCP. Thus, the present study adopted specific items from Chen and Raab's (2014) study but not the entire scale. Similarly, other studies that have discussed the measurement of customer participation (e.g., Yi and Gong, 2013), were reviewed and some items that agree with the established construct domain were selected.

All appropriate items from the literature were included at this stage to capture the specified domain, resulting in 25 items after combining statements with similar meanings. On the basis of content (Table 2), the items were divided into three groups: (1) attitude/emotion (with 9 items), (2) actions/physical effort (10 items), and (3) information/knowledge (6 items). This

study concentrates on how EIBs are affected by PCP. As such, the item wordings were modified so that they could be assessed by employees. For example, the item "I gave the employee proper information" (Yi & Gong, 2013, p.3) was assessed by customers. This item was changed to "customers give me proper information" for the present study.

(Insert Table 2 Here)

Items from a qualitative study

A qualitative study was conducted to identify additional measurement items given the lack of research on customer participation from an employee perspective. This research used in-depth interviews because certain aspects of employees' perceptions and attitude toward customer participation might remain unidentified. Interviewing employees can provide direct insights and potential items (Churchill, 1979). Semi-structured interviews were conducted in Shenzhen, one of the major cities in China. Shenzhen was selected because hotel restaurants in this city have a reputation for serving customers well and encouraging customers to participate actively in service processes (Beck, Martin, Xu, & Qu, 2004). Interviews were conducted in June 2014. The researchers made initial contact with five restaurant managers in three hotels (i.e., Grand Hyatt, Four Seasons, and Kempinski in Shenzhen) through telephone. After receiving their permission and support, 12 employees from three hotels were interviewed in their respective workplaces for their convenience. Six interviewees were male, and the other six were female. Eight worked as servers, two were supervisors, and the remaining two were (deputy) managers. Five participants work in Chinese restaurants, four in buffet restaurants, one in a western restaurant, one in a bar, and the other in a lobby lounge (as a bartender). The average length of interview was approximately 22 minutes, with a minimum of 18 and a maximum of nearly 25 minutes. Eight interviews were voice recorded with the respondents' permission. The interviewer took notes during the other four interviews to record important sentences and keywords.

Customer participation behaviors in terms of attitude/emotion, actions/physical effort, and information/knowledge were considered when designing the interview questions (Chen & Raab, 2014; Rodie & Kleine, 2000). Employees were also queried on other participation forms encountered in their service experiences not included in these three types. The interviews mainly covered the following 8 sets of questions to gain insights into PCP.

1. What are your main job duties?
2. Do you have frequent interactions with customers in your work?
3. What actions do customers demonstrate when you serve them?
4. What information do customers provide on the services that affect the service quality?

5. How do customers obtain the information necessary for the service?
6. How do customers show their attitude or express their emotions to you?
7. What other forms of customer participation in services have you experienced?
8. Do you think customer participation in services is important? Why?

Voice recordings were transcribed to text upon the completion of the interviews. Notes for the four without recording were also added to the text. The recordings/notes were organized and analyzed in Chinese (interviews were conducted in Chinese). Summative content analysis was adopted to identify items for employees' PCP (Elo & Kyngäs, 2008). A summative content analysis involves counting and comparing keywords or contents mentioned by the interviewees, followed by understanding the underlying context of the keywords. If a keyword was mentioned frequently, it may be included in the measurement scale.

Content analysis of the interviews

All interviewees encounter customers every day in their work and answered "yes" to the second question (i.e., "Do you have frequent interactions…"). Thus, all interviews were included in the analysis. The content analysis process involves three stages, namely, open coding, creating categories, and abstraction (Elo & Kyngäs, 2008). In the first stage (i.e., open coding), notes and headings were included in the transcribed text. Then, the text was reread, and all headings that summarized the contents were noted in the margins (Elo & Kyngäs, 2008). All headings were subsequently collected and transferred to coding sheets. Categories were freely created in this process. In the second stage (i.e., creating categories), the headings or categories were classified under higher-level headings (Elo & Kyngäs, 2008). This classification provided the basis for the third stage (i.e., abstraction), where similar or different headings were considered. Subcategories with similar statements or contents were grouped together as higher-level categories, thereby reducing the number of categories. Categories changed repeatedly in this process until the abstraction becomes reasonable (Elo & Kyngäs, 2008). Based on the categories, interviews were organized, and the words or sentences that appeared frequently were marked. The contents of the interviews were analyzed and interpreted.

The results of the content analysis are summarized in Table 3. Based on the categories, interviewees did not experience other forms of customer participation behaviors apart from emotion, actions, and information. However, certain findings/opinions were revealed. For example, customer participation does not necessarily contribute to the improvement of service quality; it can also be a good experience for employees and may have a partial effect on the standard operating procedure of services, which can be challenge for employees.

(Insert Table 3 Here)

Keywords of the interviews were identified and possible measurement items were derived using either the expressions by interviewees or those reorganized by the authors. Based on the 12 interviews, 7 new items were added to the measurement of PCP, which are listed as follows:

1. Customers take some responsibilities for their actions.
2. Customers spend time to learn how to use a service they are unfamiliar with.
3. Customers pay attention to the instruction of the service (if there is) before asking questions.
4. Customers ask about my personal information (e.g., where I come from).
5. Customers respect the policies of the restaurant (e.g., non-smoking, not taking others' reserved seats).
6. Customers are willing to wait for a while when a service is not ready.
7. Customers show their understanding of problems that are out of my control.

Verification of content validity

The 32 items (25+7) generated were assessed with an expert panel (Churchill, 1979) to ensure content validity. Seven experts, including five academic experts in hospitality service marketing and two restaurant managers, were asked to evaluate the representativeness of each item following the procedure used by Zaichkowsky (1985). The experts were provided with a definition of employees' PCP, and asked to evaluate the extent to which a certain item represents PCP using a three-point Likert-type scale (3="clearly representative"; 2="somewhat representative"; 1="not representative"). Item retention is determined based on the following rules (Ap & Crompton, 1998):

1) If an item was evaluated by four or more experts as "clearly representative," it was retained.
2) If an item was viewed as "clearly representative" or "somewhat representative" by five or more experts, it was also retained.
3) If an item did not meet the standard for 1) or 2), it was removed.

Eighteen items were retained after this process. The experts were also asked to revise the items, if necessary, to enhance the clarity, readability, and content validity and to provide specific suggestions to improve the measurement scale. If a revised item was suggested by one expert, it was then assessed by other experts to ensure that it had the same meaning as the original wording. If an item was revised by the researchers based on comments from experts, it was sent to all 7 experts for review. If 4 or more experts agreed that the revised item was better than the original one in terms of clarity or validity, then the revised item was adopted.

Five items were revised based on the suggestions of experts and confirmed by the panel. These items were eventually adopted in the questionnaire for pilot study.

Measurement purification

A pilot study was conducted to purify the measurement, including identifying factors, testing construct reliability, removing items (if necessary), and improving the readability and effectiveness of the measurement. The pilot study was conducted in Shenzhen in September, 2014, with a convenience sample of frontline employees in restaurants. Department managers of 10 restaurants were first contacted. Half of them expressed interest in the research and agreed to arrange a schedule for data collection. After obtaining approval, one researcher went to Shenzhen to deliver the questionnaires in person. Finally, 114 questionnaires were collected, 108 of which were found to be valid and usable. The Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy is 0.83, which is considerably higher than the required 0.6 (Hair, Black, Babin, & Anderson, 2009). Moreover, the Bartlett's test of sphericity is significant at $p<0.001$. Thus, the data are suitable for factor analysis. Exploratory factor analysis (EFA) was conducted for PCP.

Three factors were identified through EFA, and all eigenvalues for the factors exceed 1, which is the suggested cut-off point for factor extraction (Field, 2013). On the basis of the items attached to the factors, the three dimensions were named "emotional participation," "behavioral participation," and "information participation." Three items with factor loadings lower than 0.5 were removed because factor loadings of items should be higher than 0.3 and preferably 0.5 (Hair et al., 2009). The α values of all three factors after the deletion of the three items exceeded 0.7 (Table 4), and the α value of the entire scale was 0.88, indicating high reliability.

(Insert Table 4 Here)

As customer participation was found to have a three-dimensional structure, Hypothesis 1 was divided into three sub-hypotheses:

H1a. Customer emotional participation in services has a positive effect on EIB.

H1b. Customer behavioral participation in services has a positive effect on EIB.

H1c. Customer information participation in services has a positive effect on EIB.

MAIN SURVEY AND HYPOTHESIS TESTING

Data collection and descriptive analysis

The main survey was conducted in Beijing, because hospitality industry in this city is

among the most developed in China. Similar to Shenzhen, restaurants in Beijing emphasize innovation and have employees from across China. The data collection started in October 2014 and lasted for nearly two months. Quota sampling was used, with the same quota for two types of restaurants: freestanding and hotel restaurants. Prior to questionnaire delivery, approximately 80 (deputy) managers or employees in 65 restaurants (including 32 freestanding and 33 hotel restaurants) were contacted, and 34 of them from 25 restaurants (including 11 freestanding and 14 hotel restaurants) agreed to cooperate by encouraging employees to participate and arranging their work schedules to allow time for participation. Most of these contacts were former students of the researchers. They were explained clearly the research purpose and helped deliver the questionnaires to the participants. The questionnaires were delivered by hand to employees working in front-of-house positions. All questionnaires were completed anonymously.

Overall, 550 questionnaires were distributed in the 25 restaurants, with approximately 22 questionnaires given to each restaurant. All these restaurants are large, with more than 40 employees (e.g., Chi Restaurant). Finally, 528 questionnaires were collected, with a high response rate of 96%. Fourteen questionnaires were removed because they either had more than five answers missing or had selected the same option (e.g., “strongly agree”) for all questions. The descriptive statistics based on the 514 questionnaires was analyzed using IBM SPSS Statistics 23. The results are listed in Table 5. Missing values account for less than 1%; thus, each value was simply replaced with the mean of the corresponding variable (Hair et al., 2009).

(Insert Table 5 Here)

The normality tests for the variables were conducted because structural equation model (SEM) analysis can be easily affected by the distributional characteristics of the data, especially departure from multivariate normality (Kline, 2011). The absolute values of skewness and kurtosis of all variables are lower than 1 (Table 5), indicating approximately normal distribution (Hair et al., 2009). For the multivariate normality test, the chi-square is significant at 0.01 level, indicating deviation from normal distribution. However, a sample size larger than 200 usually results in significant chi-square test (Kline, 2011). With all skewness and kurtosis values close to 0, the assumption of multivariate normality test is regarded as not violated.

Data were randomly split into two (giving each questionnaire a random number from 1 to 514 and then grouping the questionnaires into two). The first half was used as calibration sample (n=257) and the other as validation sample (n=257). EFA was subsequently conducted with the calibration sample to determine whether the factor structure of the modified measure

differs from that of the original one. Then, confirmatory factor analysis (CFA) was performed with the validation sample to examine the reliability and validity of the individual measurement model (for PCP). Finally, an overall measurement model (CFA with all constructs) and SEM model (for hypotheses testing) were conducted with the entire sample (n=514) in AMOS 20.0.

Individual measurement model testing

The results of EFA for PCP indicated that the three factors and their measurement items reflected the construct well. KMO equals 0.92. Bartlett's Test is significant at 0.001 level. All factor loadings are higher than 0.4 (from 0.42 to 0.99). All eigenvalues are greater than 1. Total variance explained is more than 50% (=74.13%). The Cronbach's α values of all factors exceed 0.7. Meanwhile, all items were loaded on the same factor as they did in the pilot study.

The goodness-of-fit indices of CFA for PCP (χ^2=488.2, *df*=87, NNFI=0.91>0.9, CFI=0.92>0.9, RMSEA=0.079<0.08) based on the validation sample (n=257) suggested that the measurement model of this construct fits the data well. All factor loadings are higher than the cut-off point of 0.5 (Hair et al., 2009). All t-values are also above 1.96 (P<0.05), indicating a significant relationship between the items and the factors. Thus, the individual measurement model for PCP is acceptable and valid.

Overall measurement model testing

CFA was conducted to confirm the adequacy of the overall measurement model of the constructs (PCP and EIB) with the entire sample (n=514). The following goodness-of-fit indices are derived: χ^2=651.6, *df*=246, RMSEA=0.080, NNFI=0.92, CFI=0.93. These indices suggested that the CFA model has good model fit. The results of CFA (Table 6) indicate that all factor loadings of the items are higher than 0.7. Therefore, the constructs/factors describe the variables effectively (Hair et al., 2009). The Cronbach's α values of all factors exceed 0.7 (Table 7), indicating an acceptable level of reliability for each construct (Tavakol & Dennick, 2011). Simultaneously, all AVEs of the constructs are higher than 0.5, indicating high convergent validity. The AVE for each construct is greater than the squared correlation coefficients for the corresponding inter-constructs (Table 7), suggesting high discriminant validity (Hair et al., 2009). Therefore, all constructs exhibit high reliability and validity, thereby confirming the measurement model.

(Insert Tables 6 and 7 Here)

Hypotheses testing

SEM was conducted and goodness-of-fit indices (χ^2=1281.8, *df*=246, RMSEA=0.080, NNFI=0.90, CFI=0.91) indicated that the structural model is acceptable and explains the data effectively. The results of SEM are reflected in Figure 1. The standardized coefficients and t-values derived from the model indicated that two factors of PCP have a significant and positive effect on EIB: emotional (β=0.36, t=6.42, p<0.01) and information participation (β=0.34, t=4.72, p<0.01). However, the positive effect of behavioral participation on EIB is unsupported (β=0.09, t=1.79, p>0.05). Thus, Hypothesis 1 (PCP→EIB) is partially supported because H1a and H1c are supported but H1b is not.

(Insert Figure 1 Here)

DISCUSSION AND IMPLICATIONS

General results discussion

Although many measurement scales for customer participation have been provided by previous studies, a scale examined from an employee perspective that could be adopted to investigate the effect of PCP on employees' behaviors have yet to be established. Developing such scale is the main objective of the current study.

The scale for PCP was developed following the process suggested by Churchill (1979). PCP is defined as all actions and resources that customers contribute to the service processes and are observable by employees. The measurement items came from existing literature and in-depth interviews. An expert panel (with hospitality practitioners and experienced academics) was created to enhance content validity and readability of the items. The scale was further refined with a pilot study. Three factors were identified: emotional, behavioral, and information participation. This result was supported by EFA based on both pilot and main survey data, indicating internal consistency. This newly developed scale was also confirmed through CFA and SEM based on the main survey data, indicating high reliability and validity. It reflects the service value co-creation from the perspective of employees, and could be used for related research (e.g., customer-employee relationship in service co-production processes) in the future.

Based on these findings, customers participate in services in three forms: emotional, behavioral, and information participation. Emotional participation refers to the emotions and attitudes that customers develop toward employees/firms in service processes (e.g., showing

friendliness and courtesy). Behavioral participation describes the physical actions customers exhibit in service production and delivery (e.g., customers serve themselves and spend time to learn how to use an unfamiliar service). Information participation involves the exchange of information on the services or firms between customers and employees (e.g., customers answer service request-related questions and provide necessary information). The results of factor analysis of PCP are consistent with the definition of customer participation (involving customers' emotional, physical, and mental input) by Rodie and Kleine (2000), although they did not provide measurements of the concept. The "emotional participation" identified in this study has the same definition as "emotional input" by Rodie and Kleine (2000). The customers' "behavioral participation" identified in the current study involves "physical input," which emphasizes tangible forms of customer participation. although "behavioral participation" also describes general actions and states (e.g., diagnosing and resolving service-related problems). Customers' "mental input" is also reflected in their "information participation" behaviors. Therefore, the scale for PCP developed in the present study measures the exact concept. Compared with previous scales (Table 1), this scale shows the differences in terms of customer–employee interaction and customers' role as partial employees (see items in Table 5), thereby suggesting the uniqueness of the study.

This study also examined the effect of PCP on EIB. The results partly supported the notion that PCP in services leads to EIB. If employees perceive that customers actively participate in services in terms of emotion or information, they tend to perform additional innovative behaviors. However, behavioral participation does not lead to EIB. The findings of the study carry certain implications for related research and practice.

Theoretical implications

The scale developed in the present study can be used to measure customer participation in hospitality services from an employee perspective. The scale was developed in the hotel/restaurant setting and tested with frontline employees as respondents. The confirmed scale may be applicable to other similar circumstances, such as tourism services. The scale was designed and tested in a Chinese cultural context. If the scale is to be adopted to another culture background, according to Lloyd (2003), the following factors must be considered: culture differences, locus of control (over inputs in services), and perceived risk (of their behaviors). The scale can be useful for research on the relationship between PCP and employee behavior or performance. When it is used for such purposes, measures should be taken to address potential common method bias because all responses are from employees only. Researchers

can survey other individuals (e.g., supervisors and co-workers) when assessing employee performance.

This study also incorporated the service marketing and organizational behavior concepts in the research model, resulting in a multidisciplinary contribution to the inquiry of PCP and EIB. Customers' emotional participation significantly affects EIB. Although the emotions customers contribute to services can be positive or negative (Chen & Raab, 2014), all the items measuring emotional participation are stated positively, such as "Customers smile at me and offer me words of kindness." Nevertheless, they can capture negative feelings if respondents disagree with the statements. The results indicated that positive emotions contributed by customers to services affect the tendency of employees to engage in innovative behaviors. This conclusion supplements previous research on the relationship between emotion and EIB. Previous studies support the effect of employees' emotions on their innovation (Amabile, Barsade, Mueller, & Staw, 2005). This study further derives that customers' emotional participation in services may also affect employees' motivation to innovate.

On the contrary, behavioral participation does not significantly affect EIB. One possible reason is the perception expressed by the interviewees in this study that the best services are those provided by skilled employees without any active intervention from customers. Thus, employees may perceive customers' excessive behavioral participation as interference with their work. A number of previous studies have argued that customer participation may cause uncertainty in service production and does not necessarily lead to high service productivity (Chase, 1981). Customer behavioral participation may also cause high role conflict and extra workload for employees (Hsieh & Yen, 2005), which increase the cost of service provision for the firm (Ford & Heaton, 2001) as well as curtail employee performance. However, the positive effect of customer participation has been supported by many researchers (Hu et al., 2009; Ford & Heaton, 2001). Therefore, further investigation is necessary to explain such inconsistency.

Finally, information participation is also positively related to EIB. In innovation-related research, information and knowledge are often considered as important factors for innovation (Kim & Lee, 2013). Thus, it is reasonable that information contributed by customers facilitates employee idea generation and implementation.

Managerial implications

Practitioners can use the scale of PCP developed in this study to determine the level of customers' co-creation behavior by surveying their employees, which complements the assessment of customer behavior from a customer perspective. The completion of the survey

can also raise employees' awareness on the multi-faceted nature of customer participation and potentially sharpen their observation of customer behaviors.

By investigating the effect of PCP on EIB, this study could provide implications to innovation management. Service firms can encourage customers to participate actively in service creation and provision to foster EIBs. The finding that PCP acts as a facilitator for EIB provides another customer-related means to stimulate EIB. Strategies and measures, such as organizational socialization (Kelley et al., 1990) and supportive behaviors (e.g., keeping promises and providing reliable services) (Wu, 2011), can be adopted to encourage customer participation. Organizational socialization enables customers to understand and adapt to the values and behavior patterns of service firms to induce increased customer participation (Kelley et al., 1990). Supportive behaviors create an impression that customers are respected and valued, and thus may encourage additional spontaneous behaviors of customers (Wu, 2011).

In particular, customers' emotional and information participation are important. Managers can facilitate EIB by demonstrating and encouraging empathy for customers and enhancing customer relationship management so that customers can feel positive emotions when consuming services (Rodie & Kleine, 2000). Hiring employees with proper social skills so that they can establish rapport with customers and engage customers on an emotional level is important. Employees should be proactive in striking proper conversations with customers so as to foster a friendly service environment. Managers can also encourage customers to participate actively in services in terms of information exchange; they can train employees to solicit useful information from customers regularly and to provide necessary information to customers. Solicited customer information could be stored in customer databases, which can be used to start a conversation during subsequent visits by repeat customers. Employees should also be encouraged to think of creative ways to communicate with customers about service instructions or "house rules" so that such information is well received. However, encouraging customers to participate physically in services to increase EIB may not be necessary. Employees may perceive customers' behavioral participation as interference. In this study, behavior participation is not significantly related to EIB.

Limitations and future directions

Limitations and potential sources of bias are inevitable because of the nature and design of this study. These limitations must be identified as they may point to future research directions. The first limitation is that the data come from a specific population segment.

Although both the pilot study in Shenzhen and the main survey in Beijing confirmed the reliability and structure of the measurement, restaurant employees in the two cities represent a small percentage of those individuals in China. As a result, the research findings may not be applicable to other areas in China less developed than Shenzhen and Beijing.

Another potential bias may arise from the assessment of EIB, which does not involve the ratings of supervisors. This study used self-reported EIB, which may be exaggerated by several employees. An alternative approach is the use of supervisor-rated EIB. Naturally, issues are also inevitable when surveying supervisors. For example, if supervisors rate EIB and employees rate PCP, then the identity of the employees in the paired sample survey will no longer be anonymous. As such, several employees may not be willing to participate in the survey and respondents may not be objective in answering other questions.

Other factors must also be considered in the relationship between PCP and EIB. This study focuses on the direct effect of PCP on EIB, and ignores other factors (e.g., job characteristics and different customer types. The level of customer participation can vary depending on the nature of services (Groth, 2005). Varying job characteristics may also require different innovation behaviors from employees and affect employees' motivation to innovate distinctively (Ottenbacher et al., 2006). Future research can investigate the role of job characteristics in the relationship and add value to the mechanism of PCP–EIB effect. In addition, as PCP varies with customers, different customer types (e.g., first time vs. repeat customers) can be considered in future studies to further identify the role of customers in EIB.

REFERENCES

Amabile, T.M., Barsade, S.G., Mueller, J.S., & Staw, B.M. (2005). Affect and creativity at work. *Administrative Science Quarterly*, *50*(3), 367-403.

Auh, S., Bell, S.J., McLeod, C.S., & Shih, E. (2007). Co-production and customer loyalty in financial services. *Journal of Retailing*, *83*(3), 359-370.

Baer, M. (2012). Putting creativity to work: The implementation of creative ideas in organizations. *Academy of Management Journal*, *55*(5), 1102-1119.

Beck, J., Martin, L., Xu, Z., & Qu, H. (2004). Cross border traveler satisfaction to the Shenzhen special economic zone of China. *Journal of Hospitality & Leisure Marketing, 11*(2-3), 47-64.

Bendapudi, N., & Leone, R.P. (2003). Psychological implications of customer participation in co-production. *Journal of Marketing*, *67*(1), 14-28.

Bettencourt, L. A., & Brown, S. W. (1997). Contact employees: Relationships among workplace fairness, job satisfaction and prosocial service behaviors. *Journal of Retailing*, *73*(1), 39-61.

Bolino, M.C., Turnley, W.H., & Bloodgood, J.M. (2002). Citizenship behavior and the creation of social capital in organizations. *Academy of Management Review*, *27*(4), 505-522.

Bowden, J. (2009). Customer engagement: A framework for assessing customer-brand relationships: The case of the restaurant industry. *Journal of Hospitality Marketing & Management*, *18*(6), 574-596.

Bysted, R. (2013). Innovative employee behaviour: The moderating effects of mental involvement and job satisfaction on contextual variables. *European Journal of Innovation Management, 16*(3), 268-284.

Campo, S., Díaz, A.M., & Yagüe, M.J. (2014). Hotel innovation and performance in times of crisis. *International Journal of Contemporary Hospitality Management*, *26*(8), 1292-1311.

Campos, A.C., Mendes, J., Valle, P.O.D., & Scott, N. (2015). Co-creation of tourist experiences: a literature review. *Current Issues in Tourism*, DOI: 10.1080/13683500.2015.1081158.

Cetin, G., & Walls, A. (2015). Understanding the Customer Experiences from the Perspective of Guests and Hotel Managers: Empirical Findings from Luxury Hotels in Istanbul, Turkey. *Journal of Hospitality Marketing & Management*, *13*(2), 1-30.

Chase, R.B. (1981). The customer contact approach to services: Theoretical bases and practical extensions. *Operations Research*, *29*(4), 698-706.

Chathoth, P., Altinay, L., Harrington, R.J., Okumus, F., & Chan, E.S. (2013). Co-production versus co-creation: A process based continuum in the hotel service context. *International Journal of Hospitality Management, 32*(1), 11-20.

Chen, J.S., Tsou, H.T., & Ching, R.K. (2011). Co-production and its effects on service innovation. *Industrial Marketing Management*, *40*(8), 1331-1346.

Chen, S.C., & Raab, C. (2014). Construction and validation of the customer participation scale. *Journal of Hospitality & Tourism Research, 1,* 1-23. doi: 10.1177/1096348014525631

Chen, S.C., Raab, C., & Tanford, S. (2015). Antecedents of mandatory customer participation in service encounters: An empirical study. *International Journal of Hospitality Management, 46*, 65-75.

Churchill, G.A. (1979). A paradigm for developing better measures of marketing constructs. *Journal of Marketing Research, 16*(1), 64-73.

Claycomb, C., Lengnick-Hall, C.A., & Inks, L.W. (2001). The Customer as a productive resource: A pilot study and strategic implications. *Journal of Business Strategies*, *18*(1), 47-68.

Drucker, P.F. (2007). *Innovation and entrepreneurship: Practice and principles*. Oxford: Christopher Bones.

Duverger, P. (2011). Using dissatisfied customers as a source for innovative service ideas, *Journal of Hospitality & Tourism Research. 36*(4), 537-563.

Elo, S., & Kyngäs, H. (2008). The qualitative content analysis process. *Journal of Advanced Nursing*, *62*(1), 107-115.

Ennew, C.T., & Binks, M.R. (1999). Impact of participative service relationships on quality satisfaction and retention: An exploratory study. *Journal of Business Research, 46*(2), 121-132.

Field, A. (2013). *Discovering statistics using IBM SPSS Statistics*. London: Sage.

Ford, R. C., & Heaton, C. P. (2001). Managing your guest as a quasi-employee. *Cornell Hospitality Quarterly*, *42*(2), 46-55.

Fornell, C., & Larcker, D.F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, *18*(2), 39-50.

Foster, S. T., Sampson, S. E., & Dunn, S. C. (2000). The impact of customer contact on environmental initiatives for service firms. *International Journal of Operations & Production Management*, *20*(2), 187-203.

Frehse, J. (2006). Innovative product development in hotel operations. *Journal of Quality Assurance in Hospitality & Tourism*, 6(3-4), 129-146.

Grissemann, U.S., & Stokburger-Sauer, N.E. (2012). Customer co-creation of travel services: The role of company support and customer satisfaction with the co-creation performance. *Tourism Management*, *33*(6), 1483-1492.

Groth, M. (2005). Customers as good soldiers: Examining citizenship behaviors in internet service deliveries. *Journal of Management*, *31*(1), 7-27.

Hair, J.F., Black, W.C., Babin, B.J., & Anderson, R. (2009). *Multivariate data analysis*. Upper Saddle River, NJ: Pearson-Prentice Hall.

Hallin, C.A., & Marnburg, E. (2008). Knowledge management in the hospitality industry: A review of empirical research. *Tourism Management*, 29(2), 366-381.

Hjalager, A.M. (2010). A review of innovation research in tourism. *Tourism Management, 31*(1), 1-12.

Hsieh, A.T., & Yen, C.H. (2005). The effect of customer participation on service providers' job stress. *The Service Industries Journal*, *25*(7), 891-905.

Hu, M.L., Horng, J.S., & Sun, Y.H. (2009). Hospitality teams: Knowledge sharing and service innovation performance. *Tourism Management, 30*(1), 41-50.

Hyun, S.S. (2010). Predictors of relationship quality and loyalty in the chain restaurant industry. *Cornell Hospitality Quarterly, 51*(2), 251-267.

Janssen, O. (2000). Job demands, perceptions of effort-reward fairness and innovative work behaviour. *Journal of Occupational and Organizational Psychology*, *73*(3), 287-302.

Janssen, O. (2005). The joint impact of perceived influence and supervisor supportiveness on employee innovative behaviour. *Journal of Occupational and Organizational Psychology*, *78*(4), 573-579.

Kandampully, J., Keating, B.W., Kim, B.P., Mattila, A.S., & Solnet, D. (2014). Service Research in the Hospitality Literature Insights from a Systematic Review. *Cornell Hospitality Quarterly*, *55*(3), 287-299.

Kelley, S.W., Donnelly, J.H., & Skinner, S.J. (1990). Customer participation in service production and delivery. *Journal of Retailing. 66*(3), 315-335.

Kellogg, D.L., Youngdahl, W.E., & Bowen, D.E. (1997). On the relationship between customer participation and satisfaction: Two frameworks. *International Journal of Service Industry Management*, *8*(3), 206-219.

Kim, T.T., & Lee, G. (2013). Hospitality employee knowledge-sharing behaviors in the relationship between goal orientations and service innovative behavior. *International Journal of Hospitality Management, 34*(2), 324-337.

Kleysen, R.F., & Street, C.T. (2001). Toward a multi-dimensional measure of individual innovative behavior. *Journal of Intellectual Capital*, *2*(3), 284-296.

Kline, R.B. (2011). *Principles and Practice of Structural Equation Modeling*, New York: Guilford Press.

Krizaj, D., Brodnik, A., & Bukovec, B. (2014). A tool for measurement of innovation newness and adoption in tourism firms. *International Journal of Tourism Research*, *16*(2), 113-125.

Lai, J., Lui, S., & Hon, A. (2014). Does standardized service fit all? Novel service encounter in frontline employee-customer interface. *International Journal of Contemporary Hospitality Management*, *26*(8), 1341-1363.

Lee, S. M., Olson, D. L., & Trimi, S. (2012). Co-innovation: Convergenomics, collaboration, and co-creation for organizational values. *Management Decision*, *50*(5), 817-831.

Li, M., & Hsu, C. H. (2016a). Linking customer-employee exchange and employee innovative behavior. *International Journal of Hospitality Management*, *56*, 87-97.

Li, M., & Hsu, C. H. (2016b). A review of employee innovative behavior in services. *International Journal of contemporary Hospitality Management*, *29*(3).

Lloyd, A.E. (2003). *The role of culture on customer participation in services* (Doctoral dissertation, The Hong Kong Polytechnic University). Retrieved January 1, 2014, from Dissertations & Theses: Full Text.

Loo, P. T., Boo, H. C., & Khoo-Lattimore, C. (2013). Profiling service failure and customer online complaint motives in the case of single failure and double deviation. *Journal of Hospitality Marketing & Management*, *22*(7), 728-751.

Lugosi, P. (2007). Consumer participation in commercial hospitality. *International Journal of Culture, Tourism and Hospitality Research*, *1*(3), 227-236.

Namasivayam, K., & Guchait, P. (2013). The role of contingent self-esteem and trust in consumer satisfaction: Examining perceived control and fairness as predictors. *International Journal of Hospitality Management*, *33*, 184-195.

Ottenbacher, M.C. (2007). Innovation management in the hospitality industry: Different strategies for achieving success. *Journal of Hospitality & Tourism Research, 31*(4), 431-454.

Ottenbacher, M.C., & Harrington, R.J. (2009). The product innovation process of quick-service restaurant chains. *International Journal of Contemporary Hospitality Management*, *21*(5), 523-541.

Ottenbacher, M., Shaw, V., & Lockwood, A. (2006). An investigation of the factors affecting innovation performance in chain and independent hotels. *Journal of Quality Assurance in*

Hospitality & Tourism, 6(3-4), 113-128.

Rodgers, S. (2007). Innovation in food service technology and its strategic role. *International Journal of Hospitality Management, 26*(4), 899-912.

Rodie, A.R., & Kleine, S.S. (2000). Customer participation in services production and delivery. In Swartz T.A., & Iacobucci, D. (Eds.), *The handbook of services marketing and management,* 111-125. Thousand Oaks, CA: Sage Publication, Inc.

Santos-Vijande, M.L., López-Sánchez, J.á., & Pascual-Fernández, P. (2015). Co-creation with clients of hotel services: the moderating role of top management support. *Current Issues in Tourism*, *9*, 1-27.

Scott, S.G., & Bruce, R.A. (1994). Determinants of innovative behavior: A path model of individual innovation in the workplace. *Academy of Management Journal*, *37*(3), 580-607.

Shaw, G., Bailey, A., & Williams, A. (2011). Aspects of service-dominant logic and its implications for tourism management: Examples from the hotel industry. *Tourism Management*, *32*(2), 207-214.

Sigala, M. (2012). Social networks and customer involvement in new service development (NSD) The case of www.mystarbucksidea.com. *International Journal of Contemporary Hospitality Management*, *24*(7), 966-990.

Sigala, M. (2013). Customer involvement in sustainable supply chain management a research framework and implications in tourism. *Cornell Hospitality Quarterly*, 55(1), 76-88.

Slåtten, T., & Mehmetoglu, M. (2011). What are the drivers for innovative behavior in frontline jobs? A Study of the hospitality industry in Norway. *Journal of Human Resources in Hospitality & Tourism, 10*(3), 254-272.

Solnet, D., & Paulsen, N. (2006). Service climate, employee identification, and customer outcomes in hotel property rebrandings. *Journal of Hospitality & Leisure Marketing*, *13*(3-4), 3-27.

Thomke, S., & Von Hippel, E. (2002). Customers as innovators. *Harvard Business Review*, *80*(4), 74-81.

Uzkurt, C. (2010). Customer participation in the service process: A model and research propositions. *International Journal of Services and Operations Management*, *6*(1), 17-37.

Van Doorn, J., Lemon, K. N., Mittal, V., Nass, S., Pick, D., Pirner, P., & Verhoef, P. C. (2010). Customer engagement behavior: Theoretical foundations and research directions. *Journal of Service Research, 13*(3), 253-266.

Victorino, L., Verma, R., Plaschka, G., & Dev, C. (2005). Service innovation and customer choices in the hospitality industry. *Managing Service Quality: An International*

Journal, *15*(6), 555-576.

Wang, M., Wang, J., & Zhao, J. (2007). An empirical study of the effect of customer participation on service quality. *Journal of Quality Assurance in Hospitality & Tourism*, *8*(1), 49-73.

Wu, C.H.J. (2011). A re-examination of the antecedents and impact of customer participation in service. *The Service Industries Journal*, *31*(6), 863-876.

Yi, Y., & Gong, T. (2013). Customer value co-creation behavior: Scale development and validation. *Journal of Business Research. 66*(9), 1279–1284.

Yi, Y., Nataraajan, R., & Gong, T. (2011). Customer participation and citizenship behavioral influences on employee performance, satisfaction, commitment, and turnover intention. *Journal of Business Research*, *64*(1), 87-95.

Zaichkowsky, J.L. (1985). Measuring the involvement construct. *Journal of Consumer Research, 12*(3), 341-352.

Zolfagharian, M.A., & Sheng, X. (2012). The CCP Scale: Measuring customer co-production of services. *Services Marketing Quarterly, 33*(3), 211-229.

Table 1 Influencial measurements of customer participation

Perspectives	Research	Dimensions and Items
Customers' contributions to service quality	Kelley, Donnelly, & Skinner, 1990	2 dimensions: technical quality (e.g., information provided) and functional quality (e.g., friendliness and respect) Exact number of items for each dimension not reported
Process of participation in services	Kellogg, Youngdahl, & Bowen, 1997	4 dimensions: preparation (α=0.93), relationship building (α=0.99), information exchange (α=0.90), and intervention (α=0.88) Exact number of items not reported
Interaction between customers and firms	Ennew & Binks, 1999	3 dimensions: information sharing (5 items, α=0.82), responsible behavior (2 items, α=0.32), and personal interaction (2 items, α=0.66)
Level of participation	Claycomb, Lengnick-Hall, & Inks, 2001	3 dimensions: attendance (1 item), information provision (5 items), and co-production (3 items)
Customers' actions and resources	Lloyd, 2003	2 dimensions: behavior and information 10 items (e.g., effort and time)
Interaction between customers and firms	Groth, 2005	1 dimension with 5 items (α=0.94)
Customers' input in services	Auh et al., 2007	1 dimension with 3 items (α=0.80)
Customers' role and input in services	Zolfagharian & Sheng, 2012	5 dimensions: time (3 items, α=0.91), familiarity (5 items, α=0.93), effort (3 items, α=0.90), service production (4 items, α=0.90), and partial employee (4 items, α=0.88)
Interaction between customers and firms/employees	Yi & Gong, 2013	4 dimensions: information seeking (3 items, α=0.78), information sharing (4 items, α=0.79), responsible behavior (4 items, α=0.77), and personal interaction (5 items, α=0.74)
Customers' actions and resources	Chen & Raab, 2014	3 dimensions: attitudinal participation (3 items, α=0.87), information participation (3 items, α=0.81), and actionable participation (3 items, α=0.71)

Table 2 Items of customer participation from previous studies

Items	Source
Attitude/Emotion	
Customers smile at me and offer me words of kindness.	Kellogg et al., 1997
Customers try to get to know me.	Kellogg et al., 1997
Customers try to build contacts with me.	Kellogg et al., 1997
Customers ask for me by name.	Kellogg et al., 1997
Customers are courteous to me.	Yi & Gong, 2013
Customers do not act rudely to me.	Yi & Gong, 2013
Customers try to be cooperative with me.	Chen & Raab, 2014
Customers are friendly to me.	Chen & Raab, 2014
Customers respect me.	Chen & Raab, 2014
Actions/Physical Effort	
Customers involve themselves in problem diagnosis and resolution in my service.	Kellogg et al., 1997
Customers perform all the tasks that are required.	Groth, 2005
Customers help our restaurant with those things that are required.	Groth, 2005
Customers adequately complete all the expected behaviors.	Groth, 2005
Customers meet formal performance requirement.	Groth, 2005
Customers fulfill responsibilities to our restaurant.	Groth, 2005
Customers try to work cooperatively with me.	Auh et al., 2007
Customers do things to make my job easier.	Auh et al., 2007
Customers perform tasks that I would normally perform.	Zolfagharian & Sheng, 2012
Customers save my time by helping themselves.	Zolfagharian & Sheng, 2012
Information/Knowledge	
Customers ask me for information on what a service offers.	Yi & Gong, 2013
Customers pay attention to how others behave to use the services well.	Yi & Gong, 2013
Customers clearly explain what they want me to do.	Yi & Gong, 2013
Customers give me proper information.	Yi & Gong, 2013
Customers provide necessary information so that I can perform my duties.	Yi & Gong, 2013
Customers answer all my service-related questions.	Yi & Gong, 2013

Table 3 Results of content analysis of interviews

Categories	Subcategories	Codings with high frequency
Emotion	Positive emotion	Smile, polite, understanding, friend, patient
	Negative emotion	Complain, rude, blame, indifferent
Actions	Service related actions	Wait, complete, instructions, responsibility, solve (problem)
	Employee related actions	Help (me/themselves), cooperate, intervene
	Firm related actions	Policy, voice, suggest
Information	Information seeking	Ask/enquire, learn (from others), advertisement
	Information provision	Require/tell, explain, clear(ly), proper, job, family, personal, introduction

Table 4 EFA of perceived customer participation using pilot data (n = 180)

Factor/item	Factor loading	Eigenvalue	Variance explained (%)	α
Factor 1: Emotional participation		6.15	34.16	.90
PCP11	.71			
PCP13	.71			
PCP14	.67			
PCP15	.95			
PCP16	.75			
PCP17	.66			
PCP18	.70			
Factor 2: Behavioral participation		2.18	12.11	.77
PCP1	.55			
PCP2	.57			
PCP3	.58			
PCP9	.71			
PCP12	.78			
Factor 3: Information participation		1.01	5.62	.82
PCP6	.67			
PCP7	.65			
PCP8	.53			
Total			**51.89**	**.88**

Table 5 Descriptive statistics for variables in the survey (n = 514)

Variables	Mean	SD	Skewness	Kurtosis
EP1: Customers smile at me and offer me words of kindness.	4.46	1.66	-.274	-.740
EP2: Customers are courteous to me.	4.50	1.70	-.267	-.867
EP3: Customers try to be cooperative with me.	4.43	1.62	-.229	-.701
EP4: Customers are friendly to me.	4.51	1.65	-.312	-.772
EP5: Customers respect restaurant policies such as no-smoking, avoiding taking the reserved seats of others.	4.36	1.81	-.230	-.985
EP6: Customers are willing to wait for a while when a service is not ready.	4.25	1.66	-.199	-.793
EP7: Customers show their understanding of problems that are out of my control.	4.27	1.63	-.150	-.668
BP1: Customers engage in diagnosing and resolving service-related problems.	4.19	1.57	-.156	-.512
BP2: Customers do things to make my job easier.	4.03	1.51	-.161	-.528
BP3: Customers save my time by serving themselves.	3.80	1.60	.060	-.621
BP4: Customers spend time to learn how to use a service they are not familiar with.	3.95	1.76	-.005	-.960
BP5: Customers ask for me by name.	4.04	1.68	-.021	-.860
IP1: Customers clearly explain what they want me to do.	4.19	1.63	-.116	-.713
IP2: Customers provide necessary information so that I can perform my duties.	4.17	1.68	-.079	-.872
IP3: Customers answer all my service-related questions.	4.14	1.65	-.122	-.788
EIB1: Create new ideas for difficult issues.	4.28	1.53	-.121	-.699
EIB2: Search out new working methods, techniques, or instruments.	4.29	1.57	-.222	-.607
EIB3: Mobilize support for innovative ideas.	4.15	1.53	-.236	-.590
EIB4: Generate original solutions for problems.	4.26	1.54	-.207	-.533
EIB5: Acquire approval for innovative ideas.	4.27	1.58	-.211	-.648
EIB6: Make important organizational members enthusiastic for innovative ideas.	4.25	1.65	-.204	-.760
EIB7: Transform innovative ideas into useful applications.	4.24	1.62	-.203	-.715
EIB8: Introduce innovative ideas into the work environment in a systematic way.	4.19	1.64	-.152	-.777
EIB9: Evaluate the utility of innovative ideas.	4.24	1.61	-.225	-.678

Table 6 Results of overall measurement model (n = 514)

Constructs /Factors	Factor loadings	t-value
Emotional participation		
EP1	0.87	NA
EP2	0.91	29.86
EP3	0.86	26.74
EP4	0.90	29.61
EP5	0.73	20.17
EP6	0.75	20.92
EP7	0.69	18.43
Behavioral participation		
BP1	0.81	16.70
BP2	0.84	17.30
BP3	0.83	17.11
BP4	0.74	15.49
BP5	0.69	NA
Information participation		
IP1	0.84	NA
IP2	0.85	23.10
IP3	0.82	21.89
Employee innovative behavior		
EIB1	0.84	28.59
EIB2	0.85	28.89
EIB3	0.88	31.41
EIB4	0.91	34.46
EIB5	0.92	NA
EIB6	0.91	34.62
EIB7	0.90	33.91
EIB8	0.86	30.23
EIB9	0.85	29.16

Note: All factor loadings are significant at $p<0.001$.

Table 7 Correlations (squared correlations), reliability and AVE (n = 514)

		EP	BP	IP	EIB
1	EP	1			
2	BP	.49(.24)	1		
3	IP	.70(.49)	.58(.34)	1	
4	EIB	.64(.41)	.47(.22)	.61(.38)	1
5	**α**	**.93**	**.89**	**.88**	**.97**
6	AVE	**.67**	**.61**	**.70**	**.77**

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