

## **Service Customer's Active Role-Play and Its Impact on Customer Perceptions of Service Outcome**

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### **Abstract**

As firms' interest in actively engaging customers throughout the business process grows, so has firms' need to better understand its impact on service outcomes not only from the firm's perspective but also from the customer's perspective. This study is an attempt to define "customer's active role-play" in a service delivery system, identify its key dimensions and measurement items, and assess its impact on customers, particularly on customer perceptions of service outcomes as opposed to objective service outcomes.

**JEL Classifications:** I20, L8

**Keywords:** active customer engagement, customer outcome, customer role, customer role-play, education service, perceived service outcome

**Abbreviations:** CARP (Customer's Active Role-Play), CPSO (Customer's Perceived Service Outcome), SARP (Student's Active Role-Play), SPCO (Student's Perceived Course Outcome)

## **1. Introduction**

In services, customers are co-producers of what they purchase (Vargo & Lusch, 2004). Recently, with firms' active engagement of customers throughout the business processes, customers are no longer passive beings who are only present or play scripted roles in the value-creation process but active beings who co-create values (Baron & Harris, 2008; Xie, Bagozzi, & Troye, 2008). In order to produce desirable outcomes by engaging customers in the business process, their roles should be carefully designed and managed based on sound understanding of their impact.

Extant research is yet to distinguish the unique issues specific to the service contexts which require customers to actively play extensive roles from the general service issues. Studies on customer roles have evolved mostly around topics such as defining customer participation (Kelley, Donnelly, & Skinner, 1990; Mills & Morris, 1986), classifying customer roles (Bitner, Faranda, Hubbert, & Zeithaml, 1997), and identifying different required levels of customer participation (Bitner *et al.*, 1997) in overall services settings. Hence, studies addressing issues specific to services which require customers to actively play extensive roles are warranted.

In above-mentioned services, customer role-plays are not limited within the service encounters but extend outside encounters. Healthcare services, for example, are heavily dependent upon

patients' active role-plays outside the encounters with healthcare professionals in the healthcare facility. Existing studies, however, have mostly addressed customer role issues during the service encounters within the service delivery space (Kelley *et al.*, 1990; Solomon, Surprenant, Czepiel, & Gutman, 1985), leaving customer role issues outside the encounters and outside the delivery space largely overlooked. In this study, we intend to take a broader view of customer roles and consider customer roles both within and outside service encounters and service delivery space.

Favorable business outcomes accomplished without consideration of customer outcomes might be only short-term. Therefore, the impact of customer roles should be examined from the perspective of customer outcomes as well. Extant research on customer roles in services has mostly examined outcomes of firm's interest, such as their effect on employee productivity improvement (Kelley *et al.*, 1990; Lovelock & Young, 1979), employees' workload and satisfaction (Hsieh, Yen, & Chin, 2004), service quality improvement (Dabholkar, 1990), customer repurchases and referrals (Cermak, File, & Prince, 1994), and customer retention (Ennew & Binks, 1999). In this study, we intend to examine the impact of customer roles on outcomes of customer's interest.

In summary, the primary objectives of the current study are threefold. First, we propose and define the concept of "customer's active role-play (CARP)" in service co-production setting and identify the dimensions of CARP. Second, we examine the impact of CARP on customer's perceived service outcome (CPSO), which is the outcome from the customer's perspective. Third, we empirically develop measurement items for CARP and CPSO. Our study results should provide valuable insights to managers of services which require active plays of extensive roles from customers.

The remainder of this paper is organized as follows. We first propose and define the concept of CARP and identify dimensions of CARP by reviewing relevant research in customer participation, customer engagement, and employee engagement. We then develop hypothesis, addressing the relationship between CARP and CPSO. Next, research methodology and results are explained. We conclude the paper with a discussion of the primary findings, implications, and future research directions.

## 2. Literature Review

### 2.1. Service Customer's Active Role-Play and Its Dimensions

According to the customer participation literature, in services, customers play vital roles in creating outcomes and contribute to their own satisfaction (Bitner *et al.*, 1997). Consequently, service customers are considered as partial employees and significant contributors to service quality (Mills & Morris, 1986). Depending on the role customers play in the service delivery process, the level of their participation can be low, moderate, or high (Bitner *et al.*, 1997). It is considered low when all that is required of them is their physical presence in the process. It is moderate when they are required to aid the service organization in creating services through roles such as providing customer inputs. It is high when they are required to be involved in co-creating the services and play essential production roles that can affect the nature of the service outcome. Most forms of education and training, as well as health maintenance such as sustaining a certain level of exercise or keeping one's diet under control, are good examples of services requiring a high level of customer participation. In these services, customer roles expand beyond the production/delivery stage to the stages before and after the production. Embracing this expanded view of customer roles, the customer engagement framework presents customers as value co-creators (Prahalad & Ramaswamy, 2004). In this study, we adopt this customer engagement theory derived from the strategic marketing perspective in order to gain a deeper understanding of customer role-plays during the delivery of high customer-participation services.

With advances in communication technology, the level of interaction between firms and customers and among customers has considerably increased (Lee, Cheung, Lim, & Sia, 2006; Prahalad & Ramaswamy, 2004). This phenomenon has sparked firms' interest in engaging customers in co-creating customer values of their products and has piqued scholarly interest in developing a customer engagement (CE) framework (Brodie, Hollebeek, Juric, & Ilic, 2011). When engaged, customers can contribute significantly toward co-creating experience and values (Prahalad & Ramaswamy, 2004). Thus, as Brodie *et al.* (2011, p. 252) pointed out, "the level and type of CE can serve as a strategic imperative for generating corporate performance such as sales growth, superior competitive advantage, and profitability." In response to firms' interest in gaining a good understanding of CE, attempts to define CE have emerged (Brodie *et al.*, 2011).

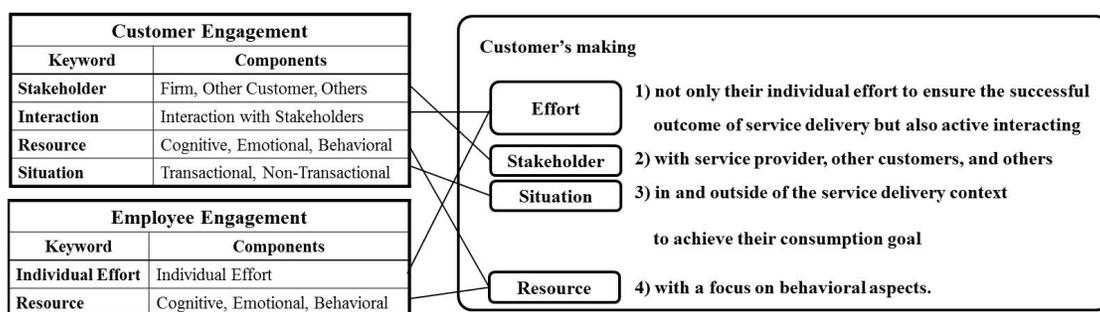
We reviewed studies in this field, derived keywords, and noted them in parentheses as follows. Focusing on the resources that customers devote to their interactions with a service organization during a service process, Patterson, Yu, and De Ruyter (2006, pp. 1-2) defined CE as "the customers' level of physical, cognitive, and emotional presence (resource: cognitive, emotional, behavioral) in their relationship (interaction) with the service organization (stakeholder: firm)." From the consumer psychology perspective, Bowden (2009) described CE as a psychological process driving customer loyalty. He explained that when new customers are satisfied with the product they purchase, they enter a state of calculative commitment through the cognitive process (resource: cognitive). With increased satisfaction with repeat purchases (situation: transactional), customers develop trust and affective commitment (resource: emotional) toward the service brand (stakeholder: firm), which may ultimately lead to lasting brand loyalty. Noticing that most customer management research focuses on transactional customer behaviors, Verhoef, Reinartz, and Krafft (2010, p. 248) proposed CE as "an overarching construct capturing non-transactional (situation: non-transactional) customer behaviors (resource: behavioral)" as well. Likewise, Kumar *et al.* (2010, p. 297) defined CE as "customer interactions (interaction) with a firm, other customers, and prospects (stakeholder: firm, other customers, and other relevant people) in both transactional such as purchasing behavior and non-transactional situations such as customer referral behavior (situation: transactional, non-transactional)." Vivek, Beatty, and Morgan (2012, p. 133) defined CE as "the intensity of an individual's participation (resource: behavioral) in and connection (interaction) with an organization's offerings or organizational activities (stakeholder: firm), which either the customer or the organization initiates." Emphasizing the behavioral aspects, Van Doorn *et al.* (2010, p. 254) defined customer engagement behavior as the "customer's behavioral manifestations (resource: behavioral) toward a brand or firm (stakeholder: firm), beyond purchase (situation: non-transactional), resulting from motivational drivers." From these diverse definitions of CE, we derived four keywords: (1) *stakeholders* (firm, other fellow customers, and other relevant people), (2) *interaction* with stakeholders, (3) *resource* of customers (cognitive, emotional, and behavioral), and (4) *situation* (transactional, and non-transactional). We will apply these keywords in defining customer's active role-play (CARP) in a later section.

In order to gain a deeper understanding of customer roles during service delivery, we also embraced the view that customers are partial employees (Mills & Morris, 1986) and incorporated employee engagement theories from the organizational behavior perspective. Recognized as closely linked to employee outcomes, organizational success, and financial performance, employee engagement (EE) has received strong management attention (Kahn, 1990). When engaged, employees show a high level of satisfaction with their job, commitment to the organization, and organizational citizenship behaviors (Saks, 2006; Schaufeli & Bakker, 2004; Sonnentag, 2003). Accepted as an influential factor on the psychology and behaviors of employees toward the organization (Saks, 2006), EE is defined as "the harnessing of organization members' selves (individual efforts) to their work roles" (Kahn, 1990, p. 694). Emphasizing the internal work motivation aspect of EE, Kahn (1990) suggested that employees become engaged when the psychological conditions of meaningfulness, safety, and availability are satisfied and that employees

engage in their work not due to their compulsive tendency but due to their work motivation derived from their psychological attitude (resource: emotional and cognitive) toward their work. Building on Kahn (1990)'s view, Rothbard (2001, p. 656) defined EE as “the psychological presence (resource: cognitive and emotional) in or focus on role activities (individual effort; resource: behavioral)” and proposed attention and absorption as two critical components of EE. Schaufeli, Salanova, González-romá, and Bakker (2002, p. 74) defined EE as “a positive, fulfilling, work-related state of mind (resource: cognitive and emotional) that is characterized by vigor, dedication, and absorption.” When these definitions of EE are taken together, EE does not seem to be a momentary and specific state but “a more persistent and pervasive affective-cognitive state (resource: cognitive and emotional) that is not focused on any particular object, event, individual, or behavior” (Schaufeli *et al.*, 2002, p. 74). Further, EE seems to involve an employee’s psychological, cognitive, and behavioral (resource: behavioral, cognitive and emotional) efforts (individual effort) for the organization (Macey & Schneider, 2008; Rothbard, 2001; Saks, 2006). From these diverse definitions of EE, we derived two keywords: (1) *individual effort* and (2) *resource* (cognitive, emotional, and behavioral).

Of the six keywords derived from the definitions of CE and EE, *resource* was derived from both and therefore was integrated into a single component. The CE keyword of *interaction* and the EE keyword of *individual effort* were integrated into *effort* since both keywords can be explained as the customer’s effort during the service delivery process. As a result, the six keywords were reduced to four components (*effort, stakeholders, situation, and resource*). In this study, we concentrated on the customer’s role-play, and therefore focused on the behavioral dimension of resource in consideration of the meaning of customer participation as “customer behaviors related to specification and delivery of service” (Cermak *et al.*, 1994, p. 91) and as “a behavioral construct that measures the extent to which customer provide/share information, make suggestions, and become involved in decision making during the service co-creation and delivery process” (Chan, Yim, & Lam, 2010, p. 49).

Incorporating these four keywords, we define customer’s active role-play (CARP) in service delivery as “customer behaviors (resource) inside and outside the service delivery space (situation) in the format of individual efforts and interaction efforts (effort) with service providers, other fellow customers, and other relevant people (stakeholders) toward the attainment of their purchase goal.” The dimensions of CARP are also derived from these keywords. The filtering process of the keywords in our study is summarized in Figure 1.



**Figure 1.** Definition of a customer’s active role-play (CARP) during service delivery

Based on our definition of CARP, we identified and presented the dimensions of CARP in a matrix (Figure 2). The dimensions are first classified into two criteria: *effort* and *space* (i.e. *situation*). The *effort* criterion refers to one's focusing energy on the attainment of desired service outcomes. It is divided into one individual effort and three interactional efforts (i.e. interaction with each of the three stakeholders, namely the service provider, other fellow customers, and other relevant people). The *space* criterion refers to the physical place where customers make efforts. It is

divided into inside and outside the service delivery space. As a result, a 2 (inside vs. outside service delivery space) x 4 (individual vs. interactional [with service provider, other fellow customer, or others] effort) matrix was constructed with seven dimensions of CARP (Figure 2). Since interactions between customers and other relevant people cannot take place inside the service delivery space, this dimension had to be eliminated.

		Space	
		Inside Service Delivery Space	Outside Service Delivery Space
Effort	Individual	Individual Effort	Individual Effort
	Interaction	Customer-Service Provider Interaction	Customer-Service Provider Interaction
		Customer-Other customer Interaction	Customer-Other customer Interaction
		-	Customer-Others Interaction

**Figure 2.** The dimensions of customer’s active role-play (CARP) in a matrix

### 2.2. Customer’s Perceived Service Outcome

From the customer’s perspective, desired service outcomes relate to the degree to which customers perceive having accomplished their purchase objectives (Churchill & Surprenant, 1982). Customer evaluations of service outcomes are a significant antecedent to satisfaction, repurchase, and recommendation, and therefore should be actively managed (Churchill & Surprenant, 1982; Spreng, MacKenzie, & Olshavsky, 1996; Tse & Wilton, 1988). Service outcomes can be classified into actual outcomes and perceived outcomes (Burton, Sheather, & Roberts, 2003). Actual outcomes refer to the objective outcomes that can be measured quantitatively, while perceived outcomes are subjective outcomes that are value laden (Spreng *et al.*, 1996). The importance of distinguishing the two has been well noted (Spreng *et al.*, 1996).

For services that are delivered over an extended period of time, customer’s perceived outcome at a given moment can affect the quality of that customer’s role during the remainder of the period (Churchill & Surprenant, 1982). Positively perceived outcomes are likely to motivate the customer to play his/her remaining role well. For services in which customer role-plays are critical to creating successful service outcomes, a positive outcome is possible only when customers play their role well (Bitner *et al.*, 1997) and therefore customer perceptions of service outcome should be well managed.

## 3. Hypothesis Development

### 3.1. Impact of Customer’s Active Role-Play on Customer’s Perceived Service Outcome

The attachment theory and identification theory in psychology can help predict the impact of customer’s active role-play (CARP) on customer’s perceived service outcome (CPSO). The concept of attachment can be best explained by the emotional bonding between a mother and her baby (Bowlby, 1982). This concept was also used to explain an individual’s emotional attachment to a group (Paxton & Moody, 2003), to organizations (Porter, Steers, Mowday, & Boulian, 1974), and to brands (Fournier, 1998). The intensity of the attachment is closely related to connection, emotion, love, and passion (Feeney & Noller, 1990).

Studies have shown that a strong sense of attachment develops under two circumstances. First, when one’s self is reflected in the object, the object-self connection develops and the attachment to

the object is reinforced (Aron, Fisher, & Strong, 2006). Studies on brand attachment have demonstrated that strong brand attachment develops over time and is often based on interactions between an individual and a brand (Fournier, 1998). The stronger the consumer-brand image congruence is, the stronger the consumer preference for the brand (Aaker, 1997) is likely to be. The emotional experience such as the self-object linkage affects emotional attachment (Park & MacInnis, 2006). Second, the more time and effort one invests in an object, the more favorable one's value assessment of the object and the stronger one's attachment to the object tends to be (Norton, Mochon, & Ariely, 2012). This phenomenon is well illustrated by the "IKEA effect" (Norton *et al.*, 2012), which means that people tend to feel more attached to objects such as do-it-yourself furniture than to finished furniture, since they spend much more time and effort in setting up the former than the latter (Norton *et al.*, 2012).

Feelings of attachment affect one's sense of identification (Chavis & Pretty, 1999). The sense of identification relates to self-concept (Dutton, Dukerich, & Harquail, 1994); it is defined as the "totality of the individual's thoughts and feelings having reference to himself as an object" (Rosenberg, 1979, p. 7). Identification studies have been actively conducted in the fields of organization studies and marketing. In organization studies, organizational identification is defined as "perceived oneness with an organization and the experience of feeling the organization's successes and failures as one's own" (Mael & Ashforth, 1992, p. 103). Individuals tend to form identification with valued objects. When individuals realize that the object of identification contributes to their accomplishment of the goal, their satisfaction with the object increases and a stronger identification with the object develops (Mael & Ashforth, 1992). A high level of identification with an organization drives one's preference for and commitment to the organization (Dutton *et al.*, 1994). One of the antecedents of organization-individual identification is contact frequency (Dutton *et al.*, 1994; Mael & Ashforth, 1992).

In the marketing field, the concept of identification is applied to the relationship between consumers and a brand (Fournier, 1998). Individuals express themselves through their brand choice; therefore, the more a brand helps individuals express themselves, the more strongly consumers are attracted to the brand (Fournier, 1998) and the more they identify with that brand (Kim, Han, & Park, 2001). A customer who strongly identifies with a brand is more likely to have a favorable evaluation of the brand's products and services (Ahearne, Bhattacharya, & Gruen, 2005), more likely to have a positive attitude toward the brand (Kim *et al.*, 2001), and more likely to be a strong advocate of the brand (Mael & Ashforth, 1992).

We can apply this attachment theory and identification theory to our study context. Our proposed definition of CARP is "customers making not only an individual effort to ensure the successful outcome of the service delivery, but also actively interacting with service providers, other fellow customers, and other relevant people inside and outside the service delivery space to achieve their purchase goal." This definition shows that CARP involves a high level of commitment of time and effort from customers. The more time and effort one spends on an object, the stronger one's attachment toward the object becomes (Norton *et al.*, 2012). Such feelings of attachment affect one's identification with the object (Chavis & Pretty, 1999). Therefore, the higher the level of a customer's CARP is, the more positive the customer's evaluation of the object's performance is likely to be. Thus, we can conjecture that the level of CARP will positively influence CPSO. Specifically we can propose that each of the seven factors of CARP will positively influence CPSO.

## 4. Method

### 4.1. Research Context and Procedure

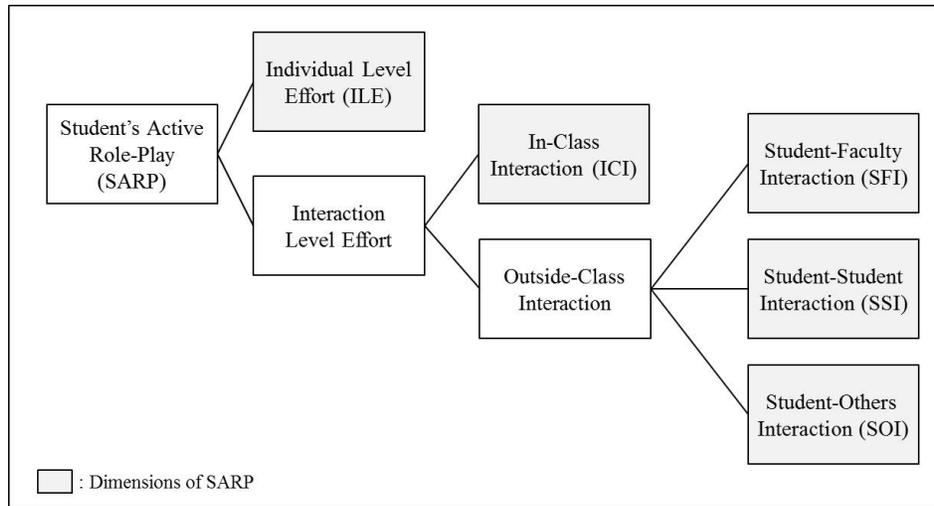
In empirically testing our concepts and hypotheses, we chose college business education services as our setting. Education service has frequently been used as a study context in services research

(Hennig-Thurau, Langer, & Hansen, 2001). In education, customer roles have a significant impact on the outcome (Bitner *et al.*, 1997; Kotzé & Du Plessis, 2003). The impact tends to grow as the level of education increases, since higher education institutions allow students a higher level of autonomy (Beldarrain, 2006). Particularly in a business education setting, student’s active role-play inside and outside classrooms can be critical to student’s learning outcome, since business education curriculums tend to require active student role-play in class discussions, case discussions, presentations, and team projects, among others (Wright, Bitner, & Zeithaml, 1994). For these reasons, college business courses can serve as a good setting for our study. Of diverse business courses, we chose two courses which tend to require different levels of student role-plays in and outside the course. They were a strategic management course for a high level of student role-plays and an accounting course for a low level of student role-plays. Both courses were for junior-level students, who would have been exposed to many business courses of different levels of required student role-plays. Both were required courses and therefore the diversity of students was ensured.

We conducted our study in two steps. We first developed scales for CARP and CPSO. Then, using the scales, we tested the impact of CARP on CPSO. We collected two sets of data: one for the exploratory factor analysis (EFA) and the other for the confirmatory factor analysis (CFA) of the scale items. We performed regression analysis to test the impact of CARP on CPSO.

#### 4.2. Dimensions of Student’s Active Role-Play in a Course

To derive specific items under the seven dimensions of CARP and CPSO in the college business education setting, we first conducted a focus group interview (FGI) with students registered in college business courses. A recruitment notice explaining about the FGI was posted at a business school in a major university in Seoul, Korea. Two students, one male and one female, were recruited for each school year. As a result, a total of eight undergraduate students majoring in business administration were interviewed. In our study setting, CARP in service delivery was operationalized as student’s active role-play (SARP) in the course. We classified the items derived from the FGI into the seven dimensions of CARP and compiled student’s course-related outcome items as CPSO items.



**Figure 3.** The dimensions of student’s active role-play

FGI results showed that students perceive student’s role-play in a course as individual and interactional *efforts* to *achieve learning goals* or to *contribute to the course*. This perception is consistent with our definition of CARP. Students in our FGI group did not seem to differentiate individual-level efforts inside the classroom from the efforts outside the classroom, so we combined

these two dimensions. We also combined the interactions with the faculty and with other students in the classroom, since students interacted with the faculty and classmates in class at the same time and therefore had difficulty separating the two. In summary, we found that SARP consisted of five dimensions: individual-level efforts, in-class interaction, and outside-class interaction (student-faculty interaction, student-student interaction, and interaction between students and other relevant people). These dimensions are summarized in Figure 3. Accordingly, we hypothesize that each of these five factors of SARP will positively influence student perceptions of service outcome (SPCO).

### 4.3. Measurement Items for Student's Active Role-Play in a Course

**Table 1.** Measurement items for SARP

Dimension	No.	Measurement Item
Individual Level Effort (ILE)	A-1	I always review class notes on a regular basis.
	A-2	I always complete all the homework assignments.
	A-3	I always keep up with all the reading assignments.
	A-4	I always take good notes in class.
	A-5	I always pay keen attention in class.
	A-6	I attend every class session.
	A-7	I always try to apply what I learned in the course to my life.
In-Class Interaction (ICI)	A-8	I have a strong tendency to initiate class discussions in class.
	A-9	I have a strong tendency to make comments in class.
	A-10	I have a strong tendency to ask relevant questions in class
	A-11	I have a strong tendency to answer questions raised in class
	A-12	I have a strong tendency to volunteer as a presenter for my team in class.
	A-13	I actively participate in all in-class group tasks and assignments.
Student-Faculty Interaction (SFI)	A-14	I have a strong tendency to discuss grades or assignments with the professor or TA outside class.
	A-15	I have a strong tendency to ask questions about the course content to the professor or TA outside class.
	A-16	I have a strong tendency to discuss ideas from class with the professor or TA outside class.
	A-17	I have a strong tendency to talk about my career plans with the professor or TA outside class.
	A-18	I have a strong tendency to work with the professor or TA on non-academic activities (committees, orientation, student life activities, etc.)
	A-19	I have a strong tendency to work on a research project with the professor or TA, beyond the course requirements.
Student-Student Interaction (SSI)	A-20	I often work with classmates outside class to prepare class
	A-21	I often help classmates with the coursework outside class.
	A-22	I actively participate in study groups on the coursework outside class.
	A-23	I often share useful course related information with classmates outside class.
Student-Others Interaction (SOI)	A-24	I have actively participated in seminars related with this course.
	A-25	I am actively involved in community service or volunteer work utilizing knowledge I learned from this course.
	A-26	I have actively discussed ideas from this course with people outside this class.

We classified the original 35 measurement items derived from the FGI into the five dimensions of SARP. To check for the face and content validity, we asked five experts in service management to rate on a five-point Likert scale on how well each item reflected the definition of the corresponding dimension and to make suggestions for improvement. Items rated lower than or equal to 3 were either deleted or modified according to the suggestions. As a result, the initial 35 items were reduced to 26 items. The modified scale is shown in Table 1.

**4.4. Dimension of Student’s Perceived Course Outcome**

CPSO has been shown to significantly influence customer satisfaction (Churchill & Surprenant, 1982; Severt, Wang, Chen, & Breiter, 2007; Spreng *et al.*, 1996) but has not yet been actively researched. Studies on class outcomes in the education setting have also concentrated mostly on objective outcome measures such as scores and grades (Devadoss & Foltz, 1996; Fusani, 1994; Leithwood & Jantzi, 2000). This is because the level of student’s comprehension of the course content was considered a class outcome that could be measured through assignments, team projects, or examinations (Leithwood & Jantzi, 2000). However, although scores and grades may be outcomes that education providers consider important, that may not be the case from the student’s perspective (Carini, Kuh, & Klein, 2006). Despite low scores and grades, students might evaluate the course outcome as high if they have developed strong interest in the course topic and have gained a good understanding of the subject area. On the other hand, despite high scores and grades, students might not evaluate the outcome as high if they do not feel that they have attained their individual learning objectives and personal growth. For this reason, outcome measures should consider not only objective outcomes such as scores and grades but also self-reported subjective outcomes (Carini *et al.*, 2006). Carini *et al.* (2006) showed that self-reported education outcomes consist of four dimensions: gains in general education, gains in personal and social development, gains in practical competence, and satisfaction. We adopt these dimensions by Carini *et al.* (2006) in defining the dimensions of self-reported outcomes.

Our FGI results showed that students consider both quantifiable outcomes (e.g. scores and grades) and values gained throughout the course as important course outcomes. We classified the student’s perceived course outcomes (SPCO) which were discovered through the FGI into four dimensions: gains in knowledge on course-specific topics, gains in cognitive skills, gains in personal and social development, and gains in psychological and emotional development. The dimensions of SPCO and their operational definitions are summarized in Table 2.

**Table 2.** Dimensions of SPCO and their definitions

Dimension	Operational Definition
Gains in Knowledge on Course Specific Topics (GKCST)	Knowledge and interests gained through the course
Gains in Cognitive Skills (GCS)	Improvement in cognitive skills through the course
Gains in Personal & Social Development (GPSD)	Improvement in personal abilities and social skills through the course
Gains in Psychological & Emotional Development (GPED)	Psychological and emotional strength gained through the course

**4.5. Measurement Items for Student’s Perceived Course Outcome**

We classified the 19 items we obtained through the FGI into four dimensions. Content validity assessment results supported all 19 items, as summarized in Table 3.

**Table 3.** Measurement items for SPCO

Dimension	No.	Measurement Item
GKCST	B-1	Through this course, I gained deeper understanding on the course topic.
	B-2	Through this course, I gained broader understanding on the course topic.
	B-3	Through this course, I became very interested in the course topic.
GCS	B-4	This course helped me improve my ability to write clearly and effectively in general.
	B-5	This course helped me improve my ability to speak clearly and effectively in general.
	B-6	This course helped me improve my ability to think critically and analytically.
	B-7	This course helped me improve my ability to solve problems.
	B-8	This course helped me improve my ability to ask good questions.
	B-9	This course helped me improve my ability to apply what I learned in real life settings.
GPSD	B-10	This course helped me develop my own values and ethics.
	B-11	This course helped me improve my ability to understand people with different backgrounds.
	B-12	This course helped me improve my ability to work well with others.
	B-13	This course helped me understand myself better.
	B-14	This course helped me improve my ability to learn effectively on my own.
GPED	B-15	This course helped me enjoy learning about the course subjects.
	B-16	This course helped me feel more confident about my studies.
	B-17	This course motivated me to study harder.
	B-18	This course helped me enjoy interactions with the professor or TA more than before.
	B-19	This course helped me enjoy interactions with classmates more than before.

## 5. Results

### 5.1. Exploratory Factor Analysis (EFA) Results

We collected the data necessary for an EFA of items for SARP and SPCO through a self-administered survey among undergraduate students taking the courses as described earlier at a business school in a major university in Seoul, Korea. The survey was administered during a period between the mid-term exam and the final exam so that students had experienced the course long enough to assess the course outcome but were not yet affected by their final grades of the course. We chose required courses to ensure the diversity of students and chose junior- and senior- level courses to ensure student's ability to fairly assess their course based on their sufficient experiences with various courses from prior years.

We obtained 134 valid responses out of 173 total responses (valid response rate=77.5%), which was enough to conduct an EFA (Guadagnoli & Velicer, 1988). There were slight more male than female respondents (53% male and 47% female). The respondents' age ranged between 23 and 26. Most subjects were in their junior and senior year (94%) and were majoring in business (94%).

We conducted an EFA in order to purify scale items of SARP and SPCO. A principal component analysis was conducted separately on SARP and SPCO items with oblique rotation (PROMAX).

Oblique rotation was chosen because the independence of each factor was not guaranteed (Thompson, 2004). Items were removed until the dataset showed a meaningful pattern matrix using the removal criteria of (1) significant communality, (2) cross-loadings, and (3) interpretability of factor loadings with known theories.

Prior to conducting an EFA, we eliminated items A-13 and A-14 from the SARP items because many respondents noted that it was difficult for them to respond to these items, since the existence and the load of team projects varied significantly across courses. After an EFA, we removed eight items (A-5, A-7, A-12, A-13, A-14, A-15, A-16, and A-23) according to the criteria stated above. Table 4 shows a five-factor (ILE, ICI, SFI, SSI, and SOI) scale with 18 items. These factors explained 67.4% of the total variance. All factor loadings were considerably above .50 and were therefore considered significant (Hair, 2006). Reliability was also high, with Cronbach’s alpha values all above .70 (Nunnally, 1978).

**Table 4.** EFA results for SARP items

Item	Factor					Cronbach’s Alpha
	1	2	3	4	5	
ILE	A-1	.76				
	A-2	.67				
	A-3	.79				.73
	A-4	.57				
	A-6	.66				
ICI	A-8		.87			
	A-9		.95			.90
	A-10		.87			
	A-11		.75			
SFI	A-17		.69			
	A-18		.78			.74
	A-19		.83			
SSI	A-20			.86		
	A-21			.83		.76
	A-22			.61		
SOI	A-24				.66	
	A-25				.78	.76
	A-26				.79	

Next, we conducted an EFA on items for SPCO. We removed nine items (B-5, B-6, B-7, B-12, B-13, B-14, B-15, B-16, and B-17) using the same removal criteria. Table 5 shows a three-factor (GKCST, GPS, and GPED) scale with 10 items. Since “gains in cognitive skill (GCS)” items and “gains in personal and social development (GPSD)” items were loaded on one factor, we combined these two factors into one titled as “gains in personal skills (GPS)”. These factors explained 75.4% of the total variance. All factor loadings were considerably above .50 and were therefore considered significant. Reliability was also high, with Cronbach’s alpha values all above .70.

**Table 5.** EFA results for SPCO items

Survey items	Factor			Cronbach's Alpha
	1	2	3	
GKCST	B-1	.98		.91
	B-2	.98		
	B-3	.76		
GPS	B-4	.68		.84
	B-8	.71		
	B-9	.61		
	B-10	.89		
	B-11	.90		
GPED	B-18		.90	.83
	B-19		.92	

## 5.2. Confirmatory Factor Analysis (CFA) Results

We collected a second set of data for a CFA and hypothesis tests. We obtained 210 valid responses out of 240 total responses (valid response rate=87.5%). The characteristics of the subjects in the second survey were similar to those of the first survey except that the ratio of male participants (61%) was higher.

We first conducted a CFA on SARP items. In order to obtain an acceptable model fit, we had to remove four additional items (A-1, A-3, A-17, and A-22) with high modification indices, leaving only 14 items. Our final model fit was acceptable (TLI=0.98, CFI=0.98, RMSEA=0.04, GFI=0.94, AGFI=0.91), with Cronbach's alpha values all above .70 and composite reliability values all above .60 (Bagozzi & Yi, 1988). All factor loadings were above .50, confirming construct validity. All factors except ILE (AVE=0.50) showed AVE values over .50, thus showing convergent validity (Fornell & Larcker, 1981). Results are summarized in Table 6. Discriminant validity was also secured (Fornell & Larcker, 1981) and test results are summarized in Table 7.

**Table 6.** CFA results on SARP items

Dimensions	Items	Standard Factor Loading	Cronbach's Alpha	Composite Reliability	AVE
ILE	A-2	.75	.74	.75	.50
	A-4	.71			
	A-6	.65			
ICI	A-8	.87	.90	.90	.69
	A-9	.92			
	A-10	.80			
	A-11	.72			
SFI	A-18	.85	.77	.81	.68
	A-19	.79			
SSI	A-20	.66	.72	.73	.58
	A-21	.86			
SOI	A-24	.67	.78	.78	.54
	A-25	.79			
	A-26	.74			

**Table 7.** Inter-construct correlation matrix for SARP items

	ILE	ICI	SFI	SSI	SOI
ILE	.71				
ICI	.30	.83			
SFI	-.18	.19	.82		
SSI	.32	.30	.15	.76	
SOI	.23	.34	.50	.37	.74

As a result of conducting a CFA on SPCO items, we removed additional three items (B-4, B-8, and B-11), leaving 7 items. Model fit was acceptable (TLI=0.98, CFI=0.99, RMSEA=0.07, GFI=0.97, AGFI=0.93), with Cronbach’s alpha values all above .70 and composite reliability values all above .60. All factor loadings were above .50, confirming construct validity. All factors had AVE values over .50, confirming convergent validity (Fornell & Larcker, 1981). Results are summarized in Table 8. The inter-construct correlation was observed to be lower than the minimum of their square rooted AVEs, confirming discriminant validity. Results are summarized in Table 9.

**Table 8.** CFA results on SPCO items

Dimensions	Items	Standard Factor Loading	Cronbach’s Alpha	Composite Reliability	AVE
GKCST	B-1	.93	.91	.92	.79
	B-2	.95			
	B-3	.78			
GPS	B-9	.91	.72	.75	.61
	B-10	.63			
GPED	B-18	.83	.77	.77	.63
	B-19	.76			

**Table 9.** Inter-construct correlation matrix for SPCO items

	GKCST	GPS	GPED
GKCST	.89		
GPS	.69	.78	
GPED	.58	.64	.79

Description: Diagonal elements are the result of the square root of AVE. For the discriminant validity, these values should exceed the inter-construct correlations.

**5.3. Tests of the Effect of SARP on SPCO**

To first test the integrated effect of SARP on SPCO, we conducted a simple regression analysis with the average of all SARP items as the independent variable and the average of all SPCO items as the dependent variable. The effect of SARP on SPCO was significant (F=80.20, p<.001). To test the effect of each of the five dimensions of SARP on SPCO, we conducted a multiple regression analysis with each of the five SARP dimensions as independent variables and SPCO as the dependent variable. The model was significant (F=26.64, p<.001), and the five independent

variables represented 39.5% of the variance. Among the five variables, only three variables of individual level efforts (ILE), in-class interaction (ICI), and student-others interaction (SOI) showed significant effect. Test statistics are summarized in Table 10.

**Table 10.** Result of regression analysis on the effect of SARP on SPCO

Analysis	Hypothesis	Independent Variable	B	T
Simple Regression Analysis <sup>a</sup>	<b>H</b>	SARP	.70	<b>8.96***</b>
Multiple Regression Analysis <sup>b</sup>	<b>H1</b>	ILE	.06	<b>6.16***</b>
	<b>H2</b>	ICI	.04	<b>3.84***</b>
	H3	SFI	.05	-.77
	H4	SSI	.06	.57
	<b>H5</b>	SOI	.05	<b>4.24***</b>

<sup>a</sup>  $R^2=.28$ , adj.  $R^2=.28$ ,  $F= 80.20$  ( $p<.001$ )

<sup>b</sup>  $R^2=.40$ , adj.  $R^2=.38$ ,  $F= 26.64$  ( $p<.001$ )

## 6. Discussion

### 6.1. Primary Findings

The primary objectives of the current study were (1) to define the concept of active role-play of customers (CARP) in service delivery, which is different from the traditional notion of customer participation in service delivery, (2) to propose the importance of understanding the impact of customer participation from the customer perspective, (3) to identify the dimensions of CARP and CPSO (customer's perceived service outcome), (4) to empirically develop scales for CARP and CPSO, and finally (5) to examine the effect of CARP on CPSO. Through extensive literature reviews of literature on topics of customer participation, customer engagement and employee engagement, we first defined CARP in service delivery as "customer behaviors (resources) inside and outside the service delivery space (situation) in the format of individual efforts and interaction efforts (effort) with service providers, other fellow customers, and others (stakeholders) toward the attainment of their purchase goal." Based on this definition, we identified seven dimensions of CARP as (1) individual-level efforts in the service delivery space, (2) individual-level efforts outside the service delivery space, (3) customer-service provider interaction in the service delivery space, (4) customer-service provider interaction outside the service delivery space, (5) customer-customer interaction in the service delivery space, (6) customer-customer interaction outside the service delivery space, and (7) interaction between customers and other relevant people outside the service delivery space.

To empirically test our proposed CARP and its impact on CPSO, we chose the college business education services as our study setting. First, to gain practical insights specific to this chosen setting, we conducted an FGI with college students majoring in business. We discovered five dimensions of SARP and three dimensions of SPCO. Five dimensions of SARP were (1) individual-level efforts, (2) in-class interaction, (3) student-faculty interaction outside class, (4) student-student interaction outside class, and (5) student-others interaction outside class. Three dimensions of SPCO were (1) gains in the course-specific topic, (2) gains in personal skills, and (3) gains in psychological and emotional development. We then developed scales for SARP and SPCO and validated them through an EFA and a CFA. As a result, we obtained 14 items for SARP and nine items for SPCO.

Regression analysis results showed that CARP (SARP) positively influence overall CPSO (SPCO). This means that the more time and effort customers (students) put in the service

(course)-related activities, the more positively they evaluate the service outcome. In terms of the effect of each dimension of CARP (SARP), only three dimensions (i.e. individual-level efforts, in-class interaction, and interaction between students and others outside class) showed a significant positive effect. This means that individual efforts made inside/outside the service encounter as well as interactions with other relevant people (e.g. attending seminars, community activities) associated with the service lead to a positive perception of the service performance. Business school professors should consider this finding in their course design and stimulate these three role-plays.

The effect of the other two dimensions (i.e. student-faculty interaction outside class and student-student interaction outside class) was not significant. According to the attachment theory, identification theory, and the IKEA effect, individuals tend to positively evaluate the target in which personal effort and time is invested (Ahearne *et al.*, 2005; Kim *et al.*, 2001; Norton *et al.*, 2012). However, our results show that the effect of CARP is contingent upon how the time and effort were taken. Other reasons for the insignificant effect of customer-service provider interaction and customer-customer interaction outside the service delivery space are plausible. We found the following two reasons as most plausible.

According to the psychological reactance theory, when the freedom of choosing a certain target is limited or threatened, the level of motivation for retaining freedom increases, resulting in one's strong desire for freedom (S. S. Brehm & J. W. Brehm, 2013). Additionally, when a customer feels that the goal was imposed by others rather than self-selected, he/she tends to degrade the value gained from achieving the goal (Zhang, Xu, Jiang, & Huang, 2011). This implies that when a customer feels that his/her role-play in an activity was not voluntary, the customer can react negatively toward the activity or its result despite his/her participation in it. Therefore, whether the participation in interactions with faculty and other students outside class was voluntary could have affected our respondents' evaluation of the course outcome, contributing to the insignificance of the effect.

According to the Korean Educational Development Institute (KEDI), the student-professor ratio in Korea is 34.7 (Korean Educational Development Institute [KEDI], 2013) which is more than double the Organization for Economic Co-operation and Development (OECD) average of 15.6 (Organization for Economic Co-operation and Development [OECD], 2013). This setting makes it difficult for Korean students to fully interact with faculty members. In addition, Korean students are not used to actively participating in course activities due to their prolonged exposure to cramming and the passive education environment from elementary school to high school. Moreover, undergraduate students in Korea seldom have opportunities to interact with professors or teaching assistants. Thus, the insignificant effect of student-faculty interaction on SPCO might be due to the low level of student-faculty interactions in general. Therefore, future studies could examine our research model in different education culture contexts.

## **6.2. Academic and Managerial Contribution**

Our study makes both academic and practical contributions. Academically, our study extends research on customer role-play, which has mostly addressed overall customer roles within the service encounter and in the service delivery space (Kelley *et al.*, 1990; Solomon *et al.*, 1985), by distinguishing customer participation according to its intensity, by focusing on active role-play, and by considering customer participation outside the service delivery space. Specifically, our study proposed a holistic concept of customer's active role-play (CARP), identified its determinants through a literature review, developed its scale through an FGI and factor analyses, and empirically examined its effect on customer's perceived service outcome (CPSO). Our study has laid the groundwork for future studies on CARP. It also contributes to the literature by proposing the importance of examining the effect of customer participation not only on variables of the firm's interest but also on those of the customer's interest, which will eventually affect the former. While existing studies focused mostly on variables such as productivity improvement (Kelley *et al.*, 1990; Lovelock & Young, 1979), quality

improvement (Dabholkar, 1990), repurchasing, and referral (Cermak *et al.*, 1994), our study examined the effect of CARP on the customer's perceived service outcome.

Our results offer several managerial insights. First, we proved the importance of managing CARP in service production/delivery inside and outside the service delivery space by showing its effect on CPSO, which is well known to affect customer satisfaction (Churchill & Surprenant, 1982; Severt *et al.*, 2007; Tse & Wilton, 1988). Second, we identified and presented the determinants and measurement scales of CARP, which can help service practitioners to manage CARP better. Third, we demonstrated which dimensions of CARP are influential in the college business education setting, which can help college business educators determine CARP management priorities.

## 7. Limitations and Suggestions for Future Research

Our study has several limitations that can be addressed by future studies. First, we have not controlled for the possible effect of service provider characteristics (e.g. capability, attitude) and customer characteristics (e.g. self-efficacy, responsibility, personality). These variables have been shown to moderate customer perceptions in many circumstances (Bippus, Kearney, Plax, & Brooks, 2003; Corno, 1992; Multon, Brown, & Lent, 1991). Thus, future studies can examine the potential effect of these variables in the effect of CARP on CPSO. Second, the study sample was limited to students of a particular major in a particular college. In Korea, student capabilities and tendencies tend to vary widely across colleges of different quality levels. A broader range of colleges and majors should be considered in follow-up studies. Third, this study was conducted in the context of only one culture: the Korean culture. In study settings like ours, cross-cultural differences can be large. Hence, future studies could extend the current study to different cultural settings. Finally, our study was limited only to education service settings. Given that there are many other services in which customers are expected to actively participate in service production/delivery inside and outside the delivery setting (e.g. healthcare, theme parks), future studies can extend the current study to different service settings.

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