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Abstract

Purpose – Improving the creative performance of customers is critical to improving the competitive advantage of service firms. Customers that perform creatively and generate novel and useful ideas contribute to firm profitability by helping the firm save on costs and improve its services rather than merely relying on its employees. This paper aims to focus on creative customer behavior and examine its antecedents.

Design/methodology/approach – The analysis is based on a dyadic data set involving salespeople and their customers, collected over two periods across various industries in the context of business-to-business service deliveries.

Findings – Results indicate that customer task complexity affects creative customer behavior not through intrinsic motivation but through customer stress, and reveal that customer learning orientation and customer creative ability positively moderate these relationships.

Originality/value – Customers, salespeople and their managers should enrich the customers' tasks with core job characteristics, in particular significance and feedback, and treat task stress as a positive, surmountable challenge that facilitates customer value creation. The results also indicate that to enhance creative customer behavior, managers should appreciate and develop customers' learning orientation and creative ability, which in turn leads to increased sales performance and service quality.

Keywords Creative customer behaviour, Customer creative ability, Customer intrinsic motivation, Customer learning orientation, Customer stress, Customer task complexity

Paper type Research paper

Introduction

To ensure their competitive advantage in a contemporary business environment, service firms resort to the creativity of their employees for generating innovative solutions and adapting to changing market demands (Oldham and Cummings, 1996). Therefore, management researchers have increasingly focused on the antecedents and consequences of employee creativity. However, surprisingly, little information is available on the creative performance of customers, who can also play a critical role in creative problem-solving during the value creation process (Kumar *et al.*, 2010). Creative customer behaviors constitute positive outcomes for organizations because such behaviors lead to the improvement in customer satisfaction and loyalty, market share and financial performance (Sanden *et al.*, 2006). The primary reason for these benefits is that creative customer behaviors enhance the delivery and diffusion of new services, add and refine values to these new services and reduce new service development cycle

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time, thus reducing the risk of new service development (Alam, 2006; Fang, 2008; Sanden *et al.*, 2006).

The current study investigates the antecedents of creative customer behavior, which refers to the kind of customer behavior that develops novel, useful and potentially profitable ideas about products, practices, services and procedures in the setting of customer value creation (Amabile, 1988). Creative customer behavior may be explained by a number of personal characteristics, such as diverse work experiences, novelty-seeking or risk-taking tendencies, cognitive flexibility and motivation to interact with sales people (Bettencourt, 2004; Dabholkar and Bagozzi, 2002). In a business-to-business (B2B) context, we isolate task characteristics as a meaningful driver of creative customer behavior because customers themselves are employees, and their attitudes and behaviors – including creative customer behaviors – are strongly shaped by the nature of their job (Coelho and Augusto, 2010). Complex tasks are characterized by challenging work and high levels of decision-making latitude and significance, which are likely to translate into positive attitude and proactive motivation toward the task (Shalley *et al.*, 2004). Few studies have examined customers' task complexity as a predictor of creative customer behavior as well as its underlying mechanisms.

The motivational account of creativity has highlighted the benefits of intrinsic motivation and regarded it as a key mediator between task complexity and creativity (Deci and Ryan, 1985; Larsson and Bowen, 1989). However, growing evidence indicates the potential role of stress in explaining the relationship between task characteristics and creativity. Therefore, we adopt a stress perspective to explain a stress-driven mechanism of the relationship between task complexity and creative customer behavior in addition to the prevalent motivational mechanism.

Finally, we explore the boundary conditions of the task complexity-creative customer behavior relationship. According to the person–situation interaction paradigm (Pervin, 1989) and trait activation theory (Tett and Guterman, 2000), the same environment or contextual demands may generate different psychological states and behavioral reactions depending on individual characteristics. Accordingly, the current study incorporates personal characteristics that modulate customers' reactions to task complexity (Agnihotri *et al.*, 2014). To this end, we identify two customer characteristics: learning orientation and creative ability.

Theoretical framework and hypotheses

As service logic suggests, service firms and sales personnel can obtain useful ideas from creative customer behavior and then exploit those ideas to enhance the performance of a supply chain network composed of salespeople and customers (Gong *et al.*, 2009). For this reason, customers are a valuable source of service innovation and improvement for companies. For example, when consulting firms provide new service development ideas, customers can become proactively involved in co-producing successful outcomes because customers know their own latent needs and potential competitor reactions better than anyone else (Fang, 2008; Fang *et al.*, 2008).

An illustration of the critical role of creative customer behavior comes from an incident mentioned by one of the participants in this study. The customer complained about different decision processes and order submission systems used by several vendors that generate overall high-task demands. Such a task situation requires high

skill levels in terms of using different systems, autonomy in making purchasing decisions over several services from different vendors, as well as frequent and immediate feedback regarding any mistakes that may have been committed. In response to this challenging task situation, the customer initiated a project to simplify and unify the interfaces of multiple vendors. He urged the salespeople of these vendors to customize their respective product-based order systems to be a client-based system and to remove unnecessary decision processes by reorganizing their order-fulfilling system. These suggestions substantially increased the efficiency of service delivery and lowered the stress faced by both the customers and salespeople.

Given the significance of creative customer behavior in the service setting, this study investigates an antecedent of creative customer behavior and its underlying mechanism. Although prior research has already investigated the antecedents of creative customer behavior (Alam, 2006), few research has explored that customer task complexity as its antecedent as well as its underlying mechanism. The study draws on both CET (Deci and Ryan, 1985) and challenge stressor theory (Lazarus, 1966; LePine *et al.*, 2005; Webster *et al.*, 2011) and examines the influence of task complexity on customers' intrinsic motivation and stress, which, in turn, lead to creative customer behavior. As Figure 1 shows, the study also addresses the potential moderating role of customers' personal characteristics on the proposed relationships.

Customer task complexity

Customer tasks involve work assigned to a person who works at the purchasing department and represents a buyer firm in his/her interaction with a salesperson, who represents a supplier firm. To characterize customer tasks, we draw on the original job characteristics model (JCM) (Hackman and Oldham, 1980), which is the most widely used model for task properties (Coelho and Augusto, 2010; Coelho *et al.*, 2011; Fried and Ferris, 1986). On the basis of JCM, we define customer task complexity as customer tasks

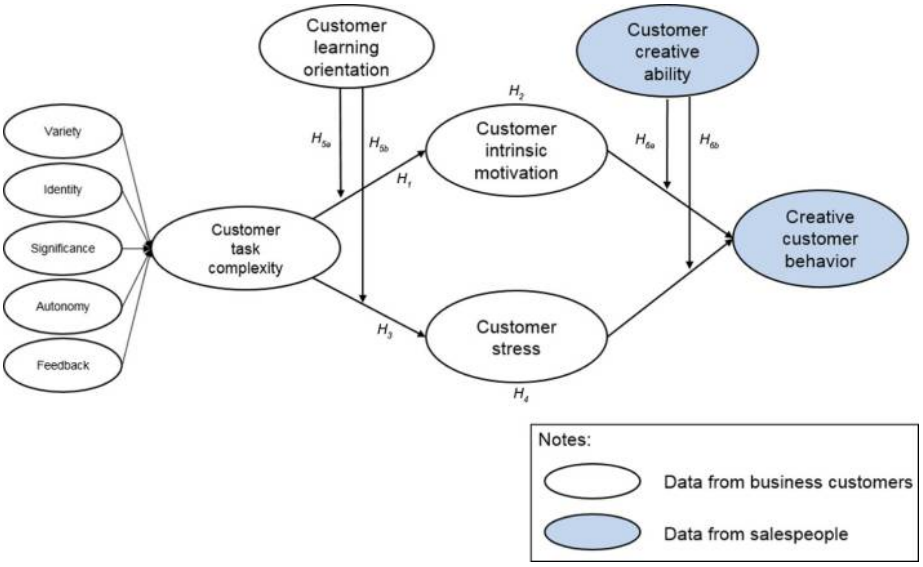

Figure 1. Conceptual framework

that are rich in variety, identity, significance, autonomy and feedback. Specifically, variety is the extent to which customers use different skills and perform diverse tasks; identity is the extent to which customers must perform a complete task; significance is the extent to which customers perceive their task as being important and meaningful; autonomy is the extent to which customers enjoy freedom in performing their tasks; and finally, feedback is the extent to which customers obtain direct evaluative information about their task performance (Coelho and Augusto, 2010; Coelho *et al.*, 2011; Hackman and Oldham, 1980). Previous studies have confirmed the multi-dimensionality of JCM by demonstrating that task complexity is better represented with all five dimensions (Fried and Ferris, 1986).

JCM was developed to improve the motivational properties of tasks by redesigning them using the five job characteristics. In this regard, task complexity is the primary driver of individual motivation and subsequent performance in terms of both quantity and quality (Becherer *et al.*, 1982; Humphrey *et al.*, 2007). Similarly, creative customer behavior in the B2B context can also be meaningfully related to customer task complexity. In particular, when customers autonomously use diverse skills to perform identifiable and significant tasks as well as receive performance feedback, they become empowered and willing to exert extra, voluntary effort, which allow them to generate creative ideas and find better ways to perform their tasks (Tierney and Farmer, 2004).

Empirical studies have demonstrated the significant link between task complexity and individual creativity (Shalley *et al.*, 2004). While extending these studies to the service context, the current study also identifies and contrasts theoretically plausible underlying mechanisms that account for such a relationship. Customer task complexity, which is based on the five task dimensions, can lead to either experienced meaningfulness, empowerment and responsibility or psychological burden and performance pressure (Hackman and Oldham, 1980). Hence, we propose that customer task complexity may drive distinct, often competing, motivational states among customers (e.g. intrinsic motivation and task-related stress) that ultimately affect their creativity during service encounters or their interactions with salespeople. Comparing these plausible but competing mediating psychological states can further reveal the function of task complexity in the service setting, particularly for creative customer behavior.

Cognitive evaluation theory: mediating role of intrinsic motivation

According to CET (Deci and Ryan, 1985), the task-performing context influences intrinsic motivation. If individuals perceive the context as supporting autonomy and promoting competence, then they will change their perceived *locus* of control from external to internal, and such change will lead to increased intrinsic motivation (Ryan, 1982; Ryan and Deci, 2000). In this study, customer intrinsic motivation refers to the engagement in tasks owing to the interest, enjoyment and satisfaction derived from the task itself (Cadwallader *et al.*, 2010).

According to CET, customers experiencing high task complexity perceive their cognition, affect and behavior as unconstrained and not pressured by external controls or conditions. This contextual perception encourages psychological freedom or empowerment, which then leads to intrinsic motivation (Becherer *et al.*, 1982; Shalley *et al.*, 2004; Tyagi, 1985). Specifically, when customers' task requires them to engage in a wide range of behaviors, they may find the task to be personally meaningful and

enjoyable. Similarly, if customers view the task as a whole and identifiable piece of work, then they are likely to feel that they are performing a worthwhile task. Customers may also feel that the task is meaningful when it substantially affects the wellbeing of others. Furthermore, when customers have autonomy in performing tasks, they feel more competent in producing the desired task outcomes (Cadwallader *et al.*, 2010). Finally, feedback provides customers with information about the effectiveness of their buying task, which in turn, facilitates feelings of competence and achievement that are instrumental for intrinsic motivation (Agnihotri *et al.*, 2014).

These psychological reactions foster a customer's intrinsic motivation, which promotes creative customer behavior (Oldham and Cummings, 1996; Shalley and Perry-Smith, 2001; Shalley *et al.*, 2004). Customer intrinsic motivation leads to additional time and effort based on the enjoyment and satisfaction derived from the task itself, allowing sustained task engagement and the exploration of various ways to better perform such tasks (Burroughs *et al.*, 2011; Grant, 2008). Intrinsically motivated customers:

> […] expend effort based on interest, curiosity, and a desire to learn. Intrinsic motivation is thought to enhance creativity by increasing positive affect, cognitive flexibility, risk taking, and persistence (Grant and Berry, 2011, p. 73).

In summary, this study proposes that intrinsic motivation is a compelling mediating mechanism through which customer task complexity enhances creative customer behavior. Complex tasks enable customers to experience a sense of accomplishment, increased self-efficacy and autonomy, thus promoting intrinsic motivation, which in turn, allows them to take risks, explore new pathways and be unconstrained by existing rules and procedures (Coelho *et al.*, 2011; Shalley *et al.*, 2004). These characteristics enable customers to develop novel and useful solutions in the service value creation setting (Amabile, 1988). Thus, we propose the following mediation hypotheses regarding intrinsic motivation:

H1. Customer task complexity is positively associated with customer intrinsic motivation.

H2. Customer intrinsic motivation mediates the relationship between customer task complexity and creative customer behavior.

Challenge stressor theory: mediating role of stress

According to challenge stressor theory, an environment perceived as a challenging one is experienced as demanding and strain-inducing. This kind of environment also offers the opportunity for personal development and accomplishment, which can stimulate problem-focused coping and creative problem-solving (Lazarus, 1966; Podsakoff *et al.*, 2007; Webster *et al.*, 2011). Consistent with challenge stressor theory, customer task complexity can be interpreted as a challenge, but it can also be regarded as unwelcome work overload (Humphrey *et al.*, 2007, p. 1335). Therefore, a high level of task complexity could be detrimental to the customers and may impose extreme external demands on them, resulting in increased task-related stress. Nonetheless, this situation could be:

> […] a trigger for change when those who are [stressed] […] try to change their current work situations by coming up with new and better ways of doing things […], [which] is the essence of creativity (Zhou and George, 2001, p. 682).

Advancing a similar logic, Byron *et al.* (2010) propose that stress increases creativity by providing cognitive stimulation, that is, individuals exposed to stress tend to have creative thoughts for solutions and engage in focused problem-solving strategies. This view is consistent with the distinction between hindrance stress, which is often caused by role ambiguity or conflict, which often comes from social surroundings and challenge stress, which is frequently caused by the demands of the work itself (Cavanaugh *et al.*, 2000; Jex *et al.*, 2014). Individuals facing challenge stress, such as that from challenging and complex tasks, cope by allocating more time and effort to address the task-related challenges, because such additional resource investment can eventually resolve the challenges at hand. Customers may, therefore, regard high task complexity as a challenge that can be overcome by extra effort, such as creative customer behavior (Byron *et al.*, 2010; Cavanaugh *et al.*, 2000; Lin *et al.*, 2014).

In summary, we isolate stress as another plausible mediating mechanism that explains the positive effect of customer task complexity on creative customer behavior. Although customer task complexity introduces additional demands and responsibilities, these difficulties could be appraised as manageable (Pearsall *et al.*, 2009; Zhou and George, 2001). Customers who experience challenge stress tend to allocate more of their cognitive and affective resources because they believe that their efforts are more effective in resolving those task situations (LePine *et al.*, 2004). In other words, when customers interpret the situation involving task complexity as challenging and demanding novel approaches, they experience challenge stress, which in turn, increases creative customer behavior that helps overcome the challenges. Thus, we propose the following hypotheses:

H3. Customer task complexity is positively associated with customer stress.

H4. Customer stress mediates the relationship between customer task complexity and creative customer behavior.

Customers' personal characteristics as moderating contingency

Previous studies suggest that contextual factors interact with the personal characteristics of individuals to affect their behavior (Choi *et al.*, 2009; Oldham and Cummings, 1996; Shalley *et al.*, 2004). Failure to consider such interactive dynamics may lead to the incomplete understanding of the role of contextual factors in shaping customer value creation behavior, further transpiring managerial failure in allocating resources to interventions that encourage creative customer behavior (Homburg *et al.*, 2007).

Individual interpretation and psychological reactions to task complexity may be more positive when individuals have a learning orientation that is "a concern for, and dedication to, developing one's competence" (Gong *et al.*, 2009, p. 765) "by acquiring new skills, mastering new situations, and learning from new experiences" (Bettencourt, 2004, p. 167). Learning orientation serves as the organizer of cognitive, affective and behavioral processes, so that highly learning-oriented individuals tend to attribute failures to low effort based on the belief that competence is flexible and that they can master the task (Dweck, 2000). Consequently, learning-oriented

customers interpret the features of task complexity – variety, identity, significance, autonomy and feedback – as personally meaningful and ultimately competence-boosting, which should accentuate the effect of task complexity on their intrinsic motivation (Gong and Fan, 2006).

A learning orientation also motivates customers to interpret task complexity as a challenge that must be overcome rather than as a threat that may reveal their incompetence. Thus:

> […] when faced with challenging situations, [customers] with a strong learning orientation […] view errors as feedback and opportunities for learning and […] often increase their effort toward developing new skills (DeRue and Wellman, 2009, p. 862).

For this reason, customers with a learning orientation consider complex tasks as a challenge and believe that effort leads to success because effort is "a means for activating current ability for task achievement" (VandeWalle *et al.*, 1999, p. 251). Individuals with a strong learning orientation also tend to readily accept the burden and stress of increased task demands and view task complexity as challenge stress (Bettencourt, 2004). Thus, they are likely to engage in creative efforts with persistence because they regard the task as an opportunity for personal growth and mastery, even when the task involves high levels of workload and accompanying stress (LePine *et al.*, 2005; Pearsall *et al.*, 2009; Rodell and Judge, 2009). In summary, customer learning orientation is expected to amplify the effect of task complexity on customer intrinsic motivation and customer stress. Hence, we present the following hypothesis:

H5. Customer learning orientation positively moderates (a) the relationship between customer task complexity and customer intrinsic motivation, as well as (b) the relationship between customer task complexity and customer stress.

Customer creative ability is hypothesized to accentuate the positive effects of both customer intrinsic motivation and customer stress on creative customer behavior. The basic notion of trait activation theory states that individuals have several traits, such as creative ability, that reflect a latent propensity to behave in certain ways. These latent traits facilitate the emergence of individual behavior, such as creative behavior, in reaction to trait-relevant situational cues, such as intrinsic motivation and stress. Specifically, as people tend to alter their behaviors according to the trait-relevant cues, intrinsic motivation and stress can elevate creative behavior to a greater extent for customers with high creative ability than for those with low creative ability (Tett *et al.*, 2013). In addition, according to trait activation theory (Tett and Guterman, 2000), highly creative individuals are more likely to initiate creative efforts when they experience psychological states that favor creativity. By contrast, the creativity of customers with low creative ability is less affected by intrinsic motivation and stress because such customers may refrain from offering creative ideas despite the presence of creativity-fostering factors (Choi *et al.*, 2009). Thus, we present the following hypothesis:

H6. Customer creative ability positively moderates (a) the relationship between customer intrinsic motivation and creative customer behavior, as well as (b) the relationship between customer stress and creative customer behavior.

Research method

Sample and data collection procedure

The unit of analysis of this study is the dyad, which comprises an individual salesperson in a supplier company (who is responsible for business customers only) and a business customer for whom the salesperson is responsible. To reduce the possibility of common method bias, data were collected from two sources: salespeople and their business customers. In addition, to avoid the possibility of reverse causality and endogeneity, data were collected using multi-wave, time-delayed surveys. In the first stage (Time 1), the researchers contacted salespeople who were randomly selected from a mailing list provided by a trade association in South Korea; they were then asked to participate in this study. The salespeople who agreed to participate provided the contact information of their business customers, who represented various industries. Data from each salesperson and the counterpart business customer were matched using code numbers.

One year later, in the second stage (Time 2), the same salespeople were visited in the same manner as in the first stage. In the first stage, of the invited sample of 300 customer–salesperson dyads, 166 participated in the surveys. In the second stage, the final matched data set included the dyads comprising 103 salespeople and 103 counterpart business customers. The average age of these 206 participants was 44 years (SD = 11.8), and 38 per cent of the sample were females. The average length of employment in their current organization and their given business relationships were 18 years (SD = 39.64) and 12 years (SD = 52.77), respectively. A comparison of this final sample of 103 dyads, with the respondents excluded from the final sample but included in the Time 1 sample, showed that the two samples were not significantly different in various demographic characteristics (all $p > 0.05$). Furthermore, a comparison of the demographic characteristics of the total sampling frames with the respondent pool in each wave of data collection also showed no significant differences (all $p > 0.05$).

Measurement

The instrument was prepared in English and translated into Korean using standard back-translation methods (Brislin, 1980). All measures were based on existing scales (see Appendix). All items were measured at Time 1, except for creative customer behavior, which was measured at Time 2. Given the study's definition of customer task complexity, the items were borrowed from the standard measure of the Job Diagnostic Survey (Coelho and Augusto, 2010; Coelho *et al.*, 2011; Hackman and Oldham, 1980). Customers were asked to rate the extent to which they perceived their tasks as meaningful (in terms of variety, identity and significance) and autonomous. They were also asked to rate the ease of obtaining feedback on their task effectiveness.

To assess customer intrinsic motivation, we adopted the scale developed by Chan and Wan (2012). To assess customer stress, we also used the items developed by Chan and Wan (2012) pertaining to the stress and pressure that a customer experiences during his/her work. Items for learning orientation, which were adopted from the scale of Button *et al.* (1996), assessed customers' intention to perform challenging tasks, learn new skills and develop different approaches when facing difficult value-creation work.

So as to avoid common method bias in the first stage (Time 1), the salespeople rated customer creative ability using items from Choi (2004) and Choi *et al.* (2009) to measure the extent to which they perceived customers to have creativity-relevant skills. In addition, at Time 2 or one year later, the salespeople assessed creative customer

behavior using scale items adopted from Zhou and George (2001). By rating these items, the salespeople reported the extent to which business customers exhibited creative behaviors regarding the development of ideas about innovative products, practices, services and procedures, which they observed while working with their customers in the B2B setting.

Results

SmartPLS software (Ringle *et al.*, 2005) was used to validate the measurement model and test the hypotheses. The composite reliabilities for all variables exceeds the cutoff value of 0.80, and the average variance extracted for all focal variables exceeds 0.50, demonstrating that each construct has acceptable psychometric properties. In support of the convergent validity of the scales, all indicators load significantly ($p < 0.05$) and substantially (> 0.70) on their hypothesized factors. Furthermore, the square root of the average variance extracted for each construct exceeds the correlations of the construct with other model constructs (Table I), thus supporting discriminant validity. In addition, the cross-loadings are not substantial compared with the loadings on the hypothesized factors, thus providing additional support for discriminant validity (Hair *et al.*, 2014).

The percentages of explained variance (R^2) for customer intrinsic motivation, customer stress, and creative customer behavior are 0.09, 0.29 and 0.08, respectively, indicating acceptable explanatory power of the model (Hair *et al.*, 2014). A bootstrapping method with 1,000 re-samples was used to test the significance of all path coefficients. Table II provides a summary of the results.

Analysis of the main and mediation effects

Hypotheses 1 and 3 predict that customer task complexity is positively associated with customer intrinsic motivation and customer stress. The current analysis confirms both hypotheses ($\beta = 0.30$, $p < 0.01$ and $\beta = 0.54$, $p < 0.001$ for *H1* and *H3*, respectively). Regarding the mediation effects, as expected, the effect of customer task complexity on creative customer behavior through customer stress is significant ($\beta = 0.31$, $p < 0.01$), thus supporting *H4* and highlighting the significance of customer stress as a source of creative customer behavior. By contrast, the analysis indicates that the effect of customer task complexity on creative customer behavior is not mediated by customer intrinsic motivation ($\beta = 0.00$, *ns.*), thus rejecting *H2*.

Analysis of the moderating effects

H5 proposes that customer learning orientation strengthens the positive effects of customer task complexity on both customer intrinsic motivation and customer stress. The data confirm the main effects of two moderators ($\beta = 0.24$, $p < 0.05$ and $\beta = 0.27$, $p < 0.05$, respectively) as well as the hypothesized interaction effects on two intermediate psychological outcomes ($\beta = 0.45$, $p < 0.001$ and $\beta = 0.41$, $p < 0.01$, respectively). Meanwhile, *H6* suggests that customer creative ability accentuates the positive effects of customer intrinsic motivation and customer stress on creative customer behavior. As predicted, the main and interaction term for customer stress is significant ($\beta = 0.16$, $p < 0.05$, $\beta = 0.20$, $p < 0.05$, respectively), thus confirming the moderating role of creative ability on the relationship between customer stress and creative customer behavior. By contrast, the main and the interaction term for customer

Table I.
Means, standard deviations, correlations and square root of the average variance extracted

Variable	M	SD	1	2	3	4	5	6	7	8	9	10
Variety	5.30	0.97	0.77									
Identity	5.35	0.98	0.16	0.80								
Significance	5.16	1.13	0.43*	0.20	0.89							
Autonomy	5.68	0.92	0.08	0.19	0.21	0.86						
Feedback	5.64	0.99	0.37*	0.07	0.13	0.27	0.88					
Customer intrinsic motivation	5.15	1.07	0.12	0.22	0.13	0.06	0.23	0.86				
Customer stress	5.72	1.39	0.13	0.03	0.28	−0.04	0.03	−0.04	0.92			
Customer learning orientation	5.43	0.89	0.27*	0.10	0.25*	0.28*	0.29*	0.34*	0.06	0.81		
Customer creative ability	5.84	1.09	0.03	0.14	0.14	0.09	0.09	0.16*	0.11	0.10	0.78	
Creative customer behavior	5.30	1.26	0.04	0.13	0.21*	−0.04	0.15	0.09	0.28*	0.07	0.60*	0.89

Note: *$p < 0.05$; the diagonal is the square root of the average variance extracted

Path	Path coefficient (β)	t-value
H1: Customer task complexity → customer intrinsic motivation	0.30	2.64**
H2: Customer task complexity → customer intrinsic motivation → creative customer behavior	0.00	0.10
H3: Customer task complexity → customer stress	0.54	7.13***
H4: Customer task complexity → customer stress → creative customer behavior	0.31	2.72**
H5a: Customer task complexity × customer learning orientation → customer intrinsic motivation	0.45	3.37***
H5b: Customer task complexity × customer learning orientation → customer stress	0.41	2.57**
H6a: Customer intrinsic motivation × customer creative ability → creative customer behavior	0.06	0.58
H6b: Customer stress × customer creative ability → creative customer behavior	0.20	2.30*

Notes: *$p < 0.05$; **$p < 0.01$; ***$p < 0.00$

Table II. Results of the structural model

intrinsic motivation is not significant ($\beta = 0.02$, ns., $\beta = 0.06$, *ns.*, respectively), thereby rejecting the moderation hypothesis involving intrinsic motivation.

Post hoc analysis

Although this study does not formulate a hypothesis stating that customer task complexity is positively related to creative customer behavior, several prior studies attended to the direct effect of contextual variables, such as task complexity on creativity (Oldham and Cummings, 1996). Thus, we examined this plausible alternative direct relationship by adding a direct path. The analysis confirms that customer intrinsic motivation and customer stress completely mediates the relationship between customer task complexity and creative customer behavior because the direct effect is not significant ($\beta = 0.07$, *ns.*). Similarly, although customer learning orientation and customer creative ability are posited as an individual-difference moderators of the context-attitude-behavior relationship, they could exert direct main effects on creative customer behavior (Gong *et al.*, 2009; Choi, 2004). Thus, we tested these plausible direct effects of customer learning orientation and customer creative ability on creative customer behavior, which turned out to be insignificant ($\beta = 0.02$, *ns.* and $\beta = 0.05$, *ns.*, respectively).

In addition, this study relies on a second-order factor for job complexity, which is consistent with most prior studies on job characteristics. However, Hackman and Oldham (1980) suggested a formula to compute the Motivating Potential Score (MPS) Index, which was adopted in some prior studies to operationalize job complexity. Thus, we validated the current findings using MPS as an alternative measure of job complexity. To this end, we performed the same set of analyses conducted to test the current hypotheses using the MPS-based measure of customer task complexity. The results based on MPS provided identical patterns to those based on the second-order factor for customer task complexity, thereby offering additional support for the current findings.

Discussion

Implications for research

Considering the importance of creative customer behavior, this study explored the underlying mechanism and contingencies through which a critical job-related factor influences creative customer behavior in B2B service settings. This study confirms the *positive* mediating role of customer stress, whereas prior studies have neglected this possibility. The identification of this somewhat unusual mediating mechanism among customers in B2B settings is a significant contribution because it provides a more sophisticated understanding of the drivers of creative customer behavior in different contexts. A follow-up analysis indicates that the mediating effect of customer stress on the relationship between task complexity and creative customer behavior is significantly greater than the mediating effect of intrinsic motivation ($\Delta\beta = 0.31$, $p < 0.05$).

On the one hand, this strong contrast between intrinsic motivation and stress as a potential mediating mechanism is somewhat surprising, given the salience of intrinsic motivation in the creativity literature, although the mediating role of intrinsic motivation is not conclusive and has received only mixed support (Shalley *et al.*, 2004). Perhaps, the importance of stress in the current sample may reflect the competitive and performance-oriented culture in the B2B sales and purchasing context. Unlike the engineering culture, which often offers inherently enjoyable work and breakthrough innovations that come from a liberal and leisurely work pace (Kunda, 1995), the sales culture tends to be hyper-competitive, with pressing targets and numerical goals of meeting deadlines and reducing costs (Brown *et al.*, 1998). In such a culture, salespeople and customers cannot enjoy the work itself but strive simply for competitive performance and stress management (Behrman and Perreault, 1984). Customers who can successfully manage stress and frame it as a positive challenge are better able to generate innovative solutions to resolve the tension. This speculation indicates the need for further studies on psychological and behavioral dynamics in various service settings.

On the other hand, the findings of this study may suffer from the potential under-specification of the model, particularly the omission of customer extrinsic motivation. A basic assumption of CET states that extrinsic rewards, such as performance-contingent incentives or social approval, may undermine intrinsic motivation and decrease creative behavior (Deci, 1975). For this reason, the exclusion of the extrinsic aspect of work motivation could render the effect of intrinsic motivation to be somewhat nebulous because of the lack of contrast between the compensatory and competitive functions of different motivational aspects. Future studies could examine the possibility that extrinsic rewards and motivation for customers in B2B settings should be controlled, so as to clarify the effect of intrinsic motivation or the possibility that extrinsic aspects are actually more important than intrinsic ones.

In any case, the present analysis highlights the significance of customer stress for creative customer behavior in the service setting, particularly in the context of B2B transactions. Customers are urged to improve undesirable conditions by engaging in creative customer behavior, such as proposing new ideas for improvements that reduce their stress and contribute to value creation during service exchanges (Zhou and George, 2001). In line with the theoretical rationale offered by JCM (Coelho and Augusto, 2010; Tyagi, 1985), the current research presumed that customer task complexity engenders

challenge stress instead of hindrance stress among customers, thus leading to constructive problem-solving behavior that is needed for customer value creation (LePine *et al.*, 2004). Despite the theoretical plausibility of such a presumption, a fruitful investigation might reveal the activation of two distinct types of stress that promote customer value creation in various service settings.

This research also finds that learning orientation, as a contingency factor, systematically strengthens the effects of customer task complexity on customer intrinsic motivation and customer stress. Prior investigations have mainly focused on the personal characteristics of salespeople, neglecting those of customers. However, our investigation demonstrates that personality characteristics have a major role in eliciting customers' psychological reactions to the work environment, which are beneficial for creative customer behavior. This pattern resonates with previous studies that reveal the interaction between contextual and personal characteristics in shaping the cognitive and emotional processes of employees (Choi *et al.*, 2009; Oldham and Cummings, 1996; Shalley *et al.*, 2004).

Finally, this study proves that customer creative ability accentuates the effect of customer stress on creative customer behavior. That our analysis demonstrates the significance of this interaction using multi-source, longitudinal data is particularly important because this approach rules out the possibilities of common method bias and reverse causality, thus enhancing the validity of the results. Furthermore, the current findings contribute to the service marketing literature by revealing a personal characteristic that enables customers to transform their stress into creative customer behavior. The availability of personal resources that are relevant to creativity seems critical for such a constructive conversion of stress.

Implications for practice

The current findings have significant managerial implications. First, they guide customers, salespeople and managers in boosting creative customer behavior to enhance service and sales performance in their respective businesses. Given the current results, managers of purchasing departments may strategically enrich the task of customers with core job characteristics, such as variety, identity, significance, autonomy and feedback. Such an effort toward greater task complexity can be efficacious in increasing innovative solutions and in accompanying value creation by heightening challengeable stress (or intrinsic motivation) among customers in the B2B setting. In this research, given that customer task complexity is modeled as a second-order factor with the five core task characteristics used as formative first-order factors, weight could be used to evaluate the relative importance of the first-order factors. The estimated significance weights for variety, identity, significance, autonomy and feedback are 0.30, 0.21, 0.45, 0.26 and 0.38, respectively, indicating that significance and feedback are the most important aspects in inducing customer intrinsic motivation and customer stress, as they have the strongest effects in shaping customer task complexity. As a result, managers that aim to promote task complexity and, subsequently, creative behavior among customers should focus on improving significance and feedback for customers in the B2B setting.

Second, customers, salespeople and managers should understand the positive mediating role of customer stress and its function toward creative customer behavior. Customers and their managers should find ways to more constructively and effectively use customer stress to create greater values in B2B service transactions. Importantly, we

do not argue that managers and salespeople should try to increase levels of purchasing employees' stress to promote their creative customer behavior. Rather, we merely suggest that customers and managers could view stress as an opportunity to generate new ideas instead of a problem to be avoided (Zhou and George, 2001). In other words, managers should encourage purchasing employees to interpret task complexity, work overload and new responsibilities as positive, surmountable challenges to achieve personal growth, mastery and increased task performance (Lin *et al.*, 2014).

Third, considering the positive moderating roles of customer learning orientation and creative ability, salespeople and managers should recruit customers or purchasing employees with these characteristics and encourage such characteristics through a favorable climate and training. Particularly in the B2B setting, the sales context is often characterized by a cutthroat culture with pressing task demands that can result in the aggressive or even reckless pursuit of quantitative goals. In such a task environment, endorsing learning-oriented goals and creative efforts that often involve risk-taking and high rates of failure would be difficult (Bettencourt, 2004). Nonetheless, sales and purchasing managers appreciate creative endeavors among customers that lead to innovative solutions, which should improve the quality and delivery of service.

Finally, salespeople can benefit from having long-term relationships with business customers with high levels of learning orientation and creative ability. Although salespeople may face challenges while identifying customers with these characteristics, they need to be selective and use the abovementioned criteria when they form long-term business relationships. Furthermore, if they already have such relationships, then they could proactively educate business customers and request them to hire employees who possess those desirable characteristics. In this respect, salespeople might develop mentoring programs to advance business customers' growth in terms of learning orientation and creative ability (Liu *et al.*, 2015).

Limitations and directions for further research

Similar to all studies, this study has some limitations. First, we relied on salespeople's ratings of creative customer behavior, which can be problematic. The creativity of customers is not observed by the salesperson on a daily basis; thus, their ratings reflect customers' creativity during service-related interactions only, which could be somewhat different from the customers' daily task-related behavior. This limitation could possibly introduce some bias to the creativity measure. Although this methodology is widely accepted in field studies, future research could measure creative customer behavior objectively (e.g. number of suggestions or product improvement ideas). An alternative approach might be the use of multiple raters, which could increase the validity of the assessment for creative customer behavior (Shalley *et al.*, 2004).

Second, we acknowledge that the current measure of customer stress does not make a distinction between challenge stress from hindrance stress. The use of a general stress measure is a limitation of this study, given that the theoretical hypothesis is based on the assumption that customers experience challenge stress as a reaction to task complexity. Future studies should replicate the current findings using diverse and more refined measures assessed by multiple approaches.

Third, the current data were collected from Korean organizations, which are often characterized by collectivistic culture, hierarchical control and long working hours (Hofstede *et al.*, 2010). Such a cultural and organizational climate could diminish the

significance of intrinsic motivation related to creative customer behavior while amplifying the role of stress. Moreover, business relationships in Asian countries are based on long-term interpersonal ties between salespeople and customers and can be characterized more by affective trust based on social exchanges than by cognitive trust based on economic exchanges (Yang, 2006). Future studies should thus consider these plausible cultural influences, as they offer an intriguing avenue for gaining cross-cultural implications related to service marketing.

Fourth, this study positioned creative customer behavior as the outcome, offering an incomplete view of service delivery. Future research must complete this view by investigating the positive relationship between creative customer behavior and service outcomes such as cost reduction, quality and innovation in service delivery (Agnihotri *et al.*, 2014).

Fifth, the findings of this study are based on a relatively small sample of dyads. Clearly, partial least square structural equation modeling makes a minimal demand on sample size, thus making it especially appropriate for testing a conceptual model with a relatively small sample size (Hair *et al.*, 2014). Nonetheless, we acknowledge that validating the current findings with a larger sample size would be ideal as it could result in more robust empirical findings.

Sixth, we recognize that creative customer behavior may not occur in all situations, but it is more likely to be manifest under a set of contingent customer. First, customers with greater self-efficacy and experience are more likely to show creative behavior because they have more confidence in their ability to perform a creative behavior. Second, customers high in novelty seeking tend to look favorably on creative behavior and have stronger intrinsic motivation to show such behavior. Third, if customers have a high need for interaction with the firm, they will have more opportunity to show creative behavior than those have a low need for interaction with the firm (Dabholkar and Bagozzi, 2002). Thus, further studies may explore contexts and contingencies that either weaken or strengthen the value of customer behavior for firms.

Finally, our conceptual model is basically a moderated mediation model. However, we took a piecemeal approach in testing the model by looking at components of the model rather than taking a holistic approach, which is warranted given the model. Interesting hypotheses that could have been tested is that the extent to which the two mediators (customer intrinsic motivation and customer stress) will play a mediating role depends on the level of the two moderators (customer learning orientation and customer creative ability).

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Appendix 1

Table AI. Scales and items used in the study

Constructs and measurement items	CR	AVE	Loading
Customer ratings			
Customer task complexity (adapted from Coelho *et al.*, 2011; Hackman and Oldham, 1980; seven-point scale: 1 = "strongly disagree" and 7 = "strongly agree")			
Please indicate the degree to which you agree with the following statements concerning your job			
Variety	0.82	0.60	
This job gives me the opportunity to do many different things			0.81
I perform different tasks during a typical work day			0.77
This job requires me to use a number of skills and talents			0.76
Identity	0.84	0.64	
I have many opportunities to complete the work I started			0.79
In this job, I can see the entire piece of work			0.72
I have many opportunities to do a job from beginning to end (i.e. the chance to do a full job)			0.88
Significance	0.92	0.80	
My work significantly affects the lives and wellbeing of other people			0.88
Many other people can be affected by how well the work gets done			0.92
The job itself is highly significant or important in the broader scheme of things			0.89
Autonomy	0.89	0.74	
I have many opportunities for independent thought and action in my job			0.84
I have many opportunities to take the initiative in this job			0.89
I have a great deal of control over the pace of my work			0.85
Feedback	0.91	0.78	
I can easily ascertain whether I am performing well or poorly in this job			0.89
I can easily determine how well I am doing in the job I am working on			0.92
I have many opportunities to find out how well I am doing in my job			0.84
Please indicate the extent to which the following statements are an accurate reflection of the nature of your task			
Customer intrinsic motivation (adapted from Chan and Wan, 2012; seven-point scale: 1 = "strongly disagree" and 7 = "strongly agree")	0.92	0.74	
The tasks that I do at work are enjoyable			0.90
My job is so interesting that it is a motivation in itself			0.89
The tasks that I do at work are themselves a driving power in my job			0.82

(*continued*)

Constructs and measurement items	CR	AVE	Loading
Please indicate the extent to which you agree with the following statements regarding your job			
Customer stress (based on Chan and Wan, 2012; seven-point scale: 1 = "strongly disagree" and 7 = "strongly agree")	0.94	0.84	
Over the past few months, your stress in your current job has increased			0.91
Overall, you feel a significant degree of pressure in your current job			0.96
Overall, your work stress has increased			0.89
Please indicate the extent to which the following statements are an accurate reflection of you			
Learning orientation (adapted from Button *et al.*, 1996; seven-point scale: 1 = "strongly disagree" and 7 = "strongly agree")	0.88	0.66	
The opportunity to do challenging work is important to me			0.81
I prefer to work on tasks that force me to learn new things			0.76
I do my best when I am working on a fairly difficult task			0.84
When I have difficulty solving a problem, I enjoy trying different approaches to see which one will work			0.83
Salespeople ratings: *Please indicate the extent to which you agree with the following statements regarding the behavior of your customer as you observed during your interaction with him or her*			
Creative customer behavior (adapted from Zhou and George, 2001; seven-point scale: 1 = "strongly disagree" and 7 = "strongly agree")	0.94	0.80	
My customer comes up with new and practical ideas to improve his or her task performance			0.85
My customer exhibits creativity on the task when given the opportunity to do so			0.92
My customer comes up with creative solutions to task problems			0.94
My customer suggests new ways of performing work tasks			0.88
Please rate the extent to which you agree with the following statements about your customer			
Customer creative ability (based on Choi, 2004; Choi *et al.*, 2009; seven-point scale: 1 = "strongly disagree" and 7 = "strongly agree")	0.95	0.85	
My customer is good at perceiving problems			0.80
My customer is good at intuitive thinking			0.87
My customer is good at using his or her imagination			0.71

Note: CR = composite reliability; AVE = average variance extracted

Table AI.

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