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High-contact services of the transient and high-uncertainty type:

Managing customer experience

Rachel W.Y. Yee (Corresponding author)

Institute of Textiles and Clothing, The Hong Kong Polytechnic University,

Kowloon, Hong Kong

Thomas Y. Choi

Department of Supply Chain Management, Arizona State University,

Tempe, Arizona, USA, and

Andy C.L. Yeung and T.C.E. Cheng

Department of Logistics and Maritime Studies,

The Hong Kong Polytechnic University, Kowloon, Hong Kong

Abstract

Purpose – Many small-to-medium sized service shops (e.g., jewelry shops, fine-dining restaurants etc) operate in a unique service environment. They often face customers in transit (i.e., transient delivery) and with minimal information of their preferences (i.e., high uncertainty). This study investigates how such shops create service experience to customers by focusing on three constructs, namely, customer orientation, management commitment to service quality, and quality of leader-member exchange in service systems with the uncertain and transient nature. Building on a systems approach of service experience design, we examine all possible effects (main effects and two-way and three-way interaction effects) on customer experience. Specifically, to frame the two-way and the three-way interaction effects, we adopt the contingency and configuration approaches, respectively.

Design/methodology/approach – This study employs a multiple respondent approach involving managers, employees, and customers to collect data from 225 service shops in Hong Kong. Hierarchically moderated regression analysis is employed to analyze the collected data.

Findings – Contrary to our initial conceptualization, most of the direct effects and two-way interaction effects among the three constructs are insignificant. We do, however, uncover a significant effect of the three-way interaction term. We analyze the results from the configuration perspective.

Originality/value – The finding suggests that the configuration approach is necessary to determine the configuration concerning how design elements align with one another to generate an integrative effect on customer experience. We conclude that, for high-contact services of the transient and high-uncertainty type, all three constructs must operate simultaneously to evoke favorable customer experience. Customer experience is *holistically* developed in a service system with high-uncertainty and transient nature, requiring *simultaneous* alignment

across a range of design choices among those involved in service delivery (manager, employee, and customer).

Keywords: quality commitment; leader-member exchange; customer orientation; customer satisfaction

Paper type: Research paper

1. Introduction

High-contact services involve close and direct interactions between a server and a service recipient during the course of service delivery (Chase 1978, Chase 1981) and have been amply discussed in the management literature (e.g., Song, *et al.* 2017, Tucker, *et al.* 2019). Such services are often referred to as professional services, such as financial consulting (Song, *et al.* 2017) and healthcare (Tucker, *et al.* 2019). However, there is another kind of high-contact services that has not received as much attention in the literature. Such high-contact services are often rendered in beauty care salons, fine-dining restaurants, jewelry retailing shops, and so on. Though less glamorous, they are in fact ubiquitous and vital to our lives. These services are what we commonly encounter in our daily lives, and they affect how we feel about ourselves and satisfy our needs and wants. As high-contact services, they are of the transient and high-uncertainty type. For brevity, we will refer to them as "high-contact and transient services" (HCTS).

Due to the inherently diverse needs and preferences across customers, the service delivery process is *uncertain*—a key characteristic of the service system (Bordoloi, *et al.* 2019). This is a particular case for high customer-contact services, like HCTS. Moreover, the service delivery process happens in real time (Bordoloi, *et al.* 2019) in HCTS. Through customers' direct contact, their service perception is greatly affected by the real-time encounter and often immediately induces emotional and behavioral consequences, whether to be satisfied or dissatisfied and whether to stay longer or shorter in the encounter. HCTS is, therefore, *transient* in nature. From the management's perspective, the high-uncertainty and transient nature implies that while offering services, firms have to deal with a great amount of variability due to limited information of customers' exact preferences (the high-uncertainty nature) and difficulty to assure services that can favor customers due to limited service delivery time (the transient nature). Thus, HCTS firms face a formidable management challenge—how can they

effectively deliver services that are favorably experienced by customers under the service system with the high-uncertainty and transient nature?

The body of literature in service delivery can broadly be classified into two streams. The first stream emphasizes reducing process variability through standardization to deliver consistent services (e.g., Stewart and Chase 1999). However, in-depth interaction is required to meet varied needs of customers in HCTS, and standardizing delivery process is difficult. Another growing stream of research, drawing on the contemporary literature of strategic service management and customer experience, offers additional ideas. Here, accommodating variability in a service system can be strategically incorporated with design choices (e.g., Secchi, *et al.* 2019, Victorino, *et al.* 2013). Limited prior studies have generally demonstrated that this approach can be effective in satisfying diverse customer needs (e.g., Secchi, *et al.* 2019). Accordingly, we take the position that a service system, incorporated with strategic design choices to accommodate variability, is critical to achieving superior customer experience in HCTS firms.

Service scholars have advocated taking a systems approach to develop customer service experience—strategic service design elements are collectively choreographed to simultaneously evoke favorable experience to customers in a holistic manner (e.g., Secchi, *et al.* 2019, Stuart and Tax 2004, Voss, *et al.* 2008). Despite the recognition of the holistic service concept, empirical work examining the link between design choices and customer experience is sporadic. The existing studies focus mainly on the direct relationship among design elements and performance. For example, Victorino et al. (2013) examined the effects of different scripting strategies on service quality. Secchi et al. (2019) investigated the associations among experiential service design strategy, service improvisation competence, and customer satisfaction. As a result, this line of research does not account for the overall customer experience that is induced by all of the design choices and their interactions under the service

delivery system. This gap in the literature overlooks the simultaneous interplay among design elements for service performance, as widely advocated by the holistic service concept.

In response, this study aims to: 1) identify specific design elements that strategically influence customer experience in the HCTS context and 2) examine how the design elements and their interactions create favorable customer experience. We posit that the service experience is captured by the three design elements or constructs and their possible interactions (both two-way and three-way). The three constructs are the *shop's strategy of customer orientation* (CO), *management's* (i.e., the person in charge of the shop) *commitment to service quality* (MCSQ), and *quality of the leader-member exchange relationship* (LMX). Following the recent studies that emphasize service experience (Anderson and Smith 2016, Smith, *et al.* 2017), these design elements are selected from the three key parties of the entire service system, i.e., firm, employee, and customer. Further, they address various aspects of service delivery (i.e., shop's value, manager quality leadership, and employee relations) to shape customer service experience. To fully understand design elements and their relationships with performance, this study examines all the possible impacts of design elements on customer experience. Accordingly, we propose that each of these constructs should directly contribute to customers' service experience that is captured by customer satisfaction in this study. We also propose that the constructs would interact with one another to induce various conditions that ultimately create a positive service experience for the customer. This observation leads us to adopting the contingency and configuration approaches to examining interactions among design elements.

We make three main contributions to the literature. First, this study theorizes and empirically investigates the high-contact service context characterized by the high-uncertainty and transient nature. It looks at the kind of services that is under-studied, yet an integral part of our daily lives. More importantly, it focuses on the service environment with specific

operational characteristics (i.e., high-uncertainty and transience) and moves beyond the majority of service studies looking at the entire service setting such as the circus setting (Pullman and Gross 2004) and touring (Dixon, *et al.* 2017). The intent is to enrich our understanding of how customer experience can be effectively developed through addressing the operational features of the service. Second, we go beyond the direct associations between design choices and customer responses as in prior studies (e.g., Pullman and Gross 2004, Secchi, *et al.* 2019, Victorino, *et al.* 2013). Apart from direct relationships, our study explores bivariate interaction effects and specific alignment patterns among design elements to achieve superior service experience. This captures the overall customer experience in a more complete manner. The configuration perspective shows an ideal pattern among design elements (management quality commitment, employee relation, and customer orientation) for attaining favorable service experience. In addition, by adopting a holistic view, our study contributes to how customer experience is *holistically* developed in a service system with high customer contact, requiring *simultaneous* alignment across a range of design choices among human (manager, employee, and customer) elements. Third, this study extends the literature of service management. The conceptual framework is built upon concepts of strategic service design and service experience, which is then empirically investigated in the high-contact and transient service setting. This makes an important original contribution by investigating how service design plays at the level of operational characteristics in services, in addition to strategic design choices, to create positive customer experience. This study responds to Field et al.'s (2018) recent call for more studies to understand how service design and service experience fit together in designing customer experience for a service system.

2. Literature Review

2.1 The Conceptualization of Our Service Type

Several typologies of services have been proposed based on their process characteristics (e.g., Chase 1978, Mersha 1990, Schmenner 1986). In particular, the customer contact model proposed by Chase (1978) is recognized as the most influential to service researchers (Metters and Vargas 2000) and is cited in related research as the foundation for the development of various service classification frameworks (e.g., Mersha 1990, Metters and Vargas 2000, Schmenner 1986). The customer contact model classifies service industries into three kinds according to the ratio of customer contact time in the service system to the total service creation time (Chase 1978, Chase 1981). Of the three kinds of service, namely pure service (high contact), mixed service (medium contact), and quasi-manufacturing (low contact), we focus on the category of "high contact" and follow Chase (1978) by using the term "high contact" to delineate the services under study. Extending Chase's work, we focus on high-contact services that are both *transient* and *highly uncertain* in nature.

Since Chase's early classification, service researchers have argued that the operating characteristic of customer contact needs to better delineate the direct interaction between the customer and the service provider since it generally involves the physical presence of the customer in the service system (e.g., Mersha 1990, Schmenner 1986). As such, several typologies have been developed to capture the direct service provider-customer interaction (e.g., Kellogg and Chase 1995, Mersha 1990, Schmenner 1986). Among them, Schmenner's (1986) service process matrix is well accepted, which is based on interaction, customization, and labor intensity. In his model, the concept of customer contact is combined with customization as a joint measure of service. It should be noted that in applying the service process matrix, its features are more applicable at the level of the service process than at the industry level (e.g. see Verma and Young 2000). Take the retailing industry, for example, which is classified under

the category of mass service in Schmenner's model. Theoretically, both luxury fashionable boutiques and chain stores would be classified into this category. Yet, in practice, the former involves a much higher level of customer contact in the service delivery process than the latter. Thus, in view of capturing the features of services in a more pragmatic manner, the former type of services should be considered as high-contact services.

Given a relatively high level of customer contact, we re-position that HCTS as high-contact services, although they would be customarily regarded under a general group called mass service, which is originally considered low-contact services in the service process matrix. The re-positioning necessitates further investigation into the specific operating level characteristics so that HCTS can differentiate themselves from other high-contact services.

2.2 High-contact and Transient Services (HCTS) with High Uncertainty

The delivery process of HCTS is uncertain due to inherently diverse needs and preferences across customers (Bordoloi, *et al.* 2019). Moreover, at the operational level, a customer might change service requests unpredictably and multiple times even within a single service encounter, which creates an additional layer of uncertainty on the delivery process. Owing to customer-induced variability, the operating context of HCTS obviously accompanies high-uncertainty in nature.

Real-time adjustments are a function of production and consumption in the service delivery process (Bordoloi, *et al.* 2019). Given that customers receive and consume services simultaneously, their perception of how services are being delivered depends on the atmospheric clues at the moment of stimuli (Berry, *et al.* 2006); the clues perceived make an immediate impact on customers' emotional and behavioral responses (e.g., Berry, *et al.* 2006, Loureiro and Roschk 2014, Zomerdijk and Voss 2010), such as be satisfied or dissatisfied and stay longer or shorter. Customers' real-time adjustments in the service delivery process makes the operating context of HCTS transient.

2.3 Customer Experience in the HCTS Context

The concept of service experience primarily concerns with the affective or emotional nature of customer reactions to service (e.g., Gross and Pullman 2012, Stuart and Tax 2004). Scholars of strategic service design have widely advocated that design choices should be consistent with the service experience concept and service experience is evoked by choreographing various aspects of a service system collectively (e.g., Voss, *et al.* 2008). In this regard, some studies have attempted to identify design choices for customer experience in different kinds of service business. For instance, to study customer experience, Pullman and Gross (2004) selected the elements relevant to hospitality at a circus performance. These elements pertain to the physical and relational aspects of the circus setting. In another setting involving different kinds of services, including airline, theme part resort, and consulting firms, Zomerdijk and Voss (2010) chose elements from a wider spectrum of service contexts covering the three major aspects of the service system, i.e., service environment, employees, and customers. Similarly, with an emphasis on capturing the service experience holistically, recent studies have selected elements from the three key parties of the entire service system, i.e., firm, employee, and customer (Anderson and Smith 2016, Smith, *et al.* 2017). Foremost, these studies do not confirm explicit design choices that firms should follow when developing customer service experience. However, implicitly, they show that the choices should depend on the studied context and cover the major aspects of the service system.

The existing studies examining customer experience focus on direct associations of design elements on performance (e.g., Pullman and Gross 2004, Smith, *et al.* 2017, Verhoef, *et al.* 2009, Zomerdijk and Voss 2010). By focusing on pairwise relationships, these studies explain partly for the development of service experience, but fail to consider the interplay among the choices proposed by the service experience concept. Smith et al. (2017) asserted that the integrated nature of firm, employee, and customer is of essence in developing favorable

service experience; yet, their study was still confined in investigating the direct impacts of these parties on customer responses. Moving beyond, our study has a particular interest to understand service experience design in a more complete manner, including the direct association and the interplay of design choices on creating customer experience.

The intent of this study is to understand how customer experience is formed holistically under the HCTS system. Following the previous studies how to identify design elements, we consider design choices relevant to the HCTS context and these choices are from the three main parties, i.e., firm, employee, and customer, of the service system. Accordingly, we choose the three constructs, namely *customer orientation* (CO), *management's commitment to service quality* (MCSQ), and *quality of the leader-member exchange relationship* (LMX). Management is represented by the person-in-charge at the shop, i.e., shop owner, salaried manager etc, who is the leader in the leader-member relationship. They address various aspects of service delivery (i.e., shop's value, manager quality leadership, and employee relations) to shape customer service experience. The service literature has widely recognized the importance of customer orientation involving customer contact, given that it shapes a firm's value toward customers and meeting their needs (e.g., Hughes, *et al.* 2019, Miao and Wang 2016, Zablah, *et al.* 2012). Research has emphasized that management's commitment to service quality significantly affecting the performance (e.g., Ashill, *et al.* 2008, Babakus, *et al.* 2003) and its absence leading to service failures (Cheung and To 2010). LMX contends that leaders' influence in shaping relationship with their employees is crucial in affecting employee performance (e.g., Martin, *et al.* 2016, Wong, *et al.* 2022). Prior research demonstrates that through their employee relationship, managers support their employees who in turn put additional effort to deliver services (e.g., Jung, *et al.* 2021). We intend to capture their direct and integrative impacts on creating customer service experience.

3. Conceptual Framework and Hypothesis Formulation

To seek a complete understanding of customer experience, we explore all the possible impacts (direct and interaction) of the three constructs (CO, MCSQ, and LMX) on customer service experience, which is reflected in customer satisfaction in this study. Figure 1 shows the conceptual framework. In what follows, we discuss the three constructs and how they would develop favorable customer service experience.

(------ Figure I above here ------)

3.1 Direct Effects

Customer orientation (CO) puts the interest of customers first for developing a long-term profitable enterprise (Herhausen, *et al.* 2017, Zablah, *et al.* 2012). CO represents collective values and beliefs at the organization level that reinforce behaviors targeted at satisfying customers (Smirnova, *et al.* 2018). Marketing scholars generally advocate CO as a distinct form of organizational culture that management cultivates given its strategic orientation (Feng, *et al.* 2019, Herhausen, *et al.* 2017). In this regard, CO plays a specific role in strategically aligning the basic values that underlie a firm's culture with the desires of individual customers (Lukas, *et al.* 2013). These values help place customers' interests first and cultivate a favorable customer-oriented work atmosphere permeating through service delivery (Osmonbekov and Bernard 2013). CO has a beneficial impact on organizational outcomes (Lukas, *et al.* 2013). Lee et al. (2021) demonstrated that CO has positive effects on customer satisfaction and retention. In HCTS shops, such an atmosphere is particularly essential in helping customers settle into a transient service delivery process.

Management's commitment to service quality (MCSQ) encompasses a leader's personal commitment to pursuing superior service quality and active involvement in quality-improvement activities (Hartline and Ferrell 1996). The leader with strong quality commitment would be dedicated to promulgating a quality-oriented vision throughout his/her shop, seeking

quality improvement for services, and allocating organizational resources to enhancement tasks related to service operations. Confluence of such managerial quality behaviors shapes customers' service experience more favorably, yielding desirable customer perception of service (Netemeyer, *et al.* 2010). This is an integral nature of HCTS shops operating under limited information about customer exact needs.

Quality of leader-member exchange (LMX) is regarded as the quality of the relationship between the leader and followers (Tsai, *et al.* 2017). It plays a critical role in shaping employee extra-role actions (e.g., Sparrowe 2018, Tsai, *et al.* 2017). The underlying assumption is that leaders develop qualitatively different relationships with each of their employees whom they manage (e.g., Sparrowe 2018). In this sense, leaders would develop high-quality LMX relationships with their employees that are characterized by respect, liking, contribution, and loyalty (Tsai, *et al.* 2017). Underlying such high-quality LMX relationships is an inherent motivation or obligation that drives subordinates to make extra-role contributions going beyond the call of duty. Meta-analyses have confirmed that high-quality of LMX is correlated with critical performance outcomes, such as organizational commitment and citizenship performance (Martin, *et al.* 2016). Prior studies also demonstrate that LMX affects service performance (e.g., Auh, *et al.* 2016, Yee, *et al.* 2015). In HCTS, when employees perceive high-quality LMX with their individual managers, they are more motivated to serve customers. Under the uncertain and transient service system, they are likely to put effort to come up with tasks for customized services expected by individual customers, resulting in positive customer perception of the service encounter. Based on the preceding arguments, we posit:

Hypothesis 1a: Customer orientation has a positive effect on customer perception of the service encounter.

Hypothesis 1b: Management's commitment to service quality has a positive effect on customer perception of the service encounter.

Hypothesis 1c: Quality of leader-member exchange relationship has a positive effect on customer perception of the service encounter.

3.2 Two-way and Three-way Interaction Effects

The holistic approach asserts that the value of service experience is a function of design elements in a service context and how they interact to generate an outstanding performance on customers (e.g., Gupta and Vajic 2000, Stuart and Tax 2004). In other words, the deployment of design elements not only independently but also jointly influences service performance. Therefore, apart from the direct associations depicted in the previous section, we submit that interactions involving any two or all of the drivers can influence customers' perception of service. We apply the contingency theory and configuration theory to substantiate the two-way and three-way interaction effects, respectively. The development of the two-way and three-way interaction effects is described in the following.

3.2.1 The two-way interaction effects

Contingency approach assumes that there is one best practice in designing an organization (Galbraith 1977, Thompson 1967). On the basis of this assumption, an organization as being decomposable into independent entities (e.g., Sinha and Van de Ven 2005). From this perspective, the performance effect of fit depends on the alignment among organizational factors of concern (Donaldson 2001). This implies that an organization's performance can be enhanced by an internal fit among its key factors such as strategies, structure, systems, and culture to the environment (Miller 1992). Considering the customer experience is collectively choreographed among various design elements in the service system, as advocated in the literature of service design (e.g., Secchi, et al. 2019, Voss, et al. 2008), the contingency approach is applied in our studied context. It is anticipated some of the organizational factors (i.e., CO, MCSQ, and LMX) to be aligned and interact with each other in order to find fit with

uncertain and transient service operating environment while achieving organizational performance.

We expect that CO and MCSQ would reinforce each other to affect customers' perception on HCTS. MCSQ secures quality improvement (Cheung and To 2010), whereas CO provides work values guiding employees in executing customer-focused service operations (Menguc, *et al.* 2016). Customer-oriented values would persist during the service encounter and reinforce the impact of quality improvement on a customer's experience. When CO is weak, the service delivery would occur with little concern for the needs of individual customers (Lee, *et al.* 2021). Even if a manager is committed to coming up with his/her own ideas of how best to serve customers, a weak CO would impede the realization of that commitment. Consequently, the effect of MCSQ on customer perception of service would be significantly weakened. In contrast, in a strong CO atmosphere, the service delivery would emphasize individual customers' needs (Smirnova, *et al.* 2018). When offering HCTS, a joint presence of strong CO and MCSQ would ensure that employees carry out the manager's quality initiatives with a focus on catering to customers' individual needs. Thus, the influence of MCSQ on customer perception of service would be strengthened.

In much the same way, LMX and the shop's CO would have a joint influence on customer perception of HCTS. Previous research on CO has shown that the implementation of CO requires customer-contact employees to exhibit a broad range of customer-oriented behaviors, like communication, information usage, and negotiation, widely covering various stages of a service encounter (Homburg, *et al.* 2011). Often, such implementation necessitates employees to try different work practices when customizing HCTS for individual customers. We argue that the success or failure of this implementation depends on employee work engagement in service customization. LMX offers reinforcement or barriers to employees' work engagement in the extra-role behavior (Sparrowe 2018). High-quality LMX entails a social exchange

(Gottfredson, *et al.* 2020) where the obligation for reciprocity is strengthened, whose scope extends beyond formal job descriptions (Matta, *et al.* 2015). As such, employees would more readily engage in extra-role work falling outside the daily routines, yielding more favorable customer perception of the service encounter. Low-quality LMX, in contrast, reduces the encounter to economic exchange (Gottfredson, *et al.* 2020) with negative reciprocity (Matta, *et al.* 2015). With an economic calculus, employees with low LMX would tend to interpret the exchange that requires extra-role behavior as a nuisance that falls outside their contractual obligations. They would merely fulfil the basic service duties and be unwilling to satisfy customer requests beyond the minimum job requirements. This type of behaviors would eventually lead to negative customer perception of service.

Prior studies have shown that managers in close proximity with their workers can influence their attitudes, behaviors, and emotions (Liu, *et al.* 2017, Netemeyer, *et al.* 2010). Thus, when a manager is committed to customer service, the effective way the manager can influence his/her workers is to be close enough to the workers so his/her commitment can be observed. Likewise, the impact of a manager's quality commitment toward HCTS relies greatly on the extent to which frontline service employees engage with the manager in meaningful exchanges and come to share his/her quality commitment. Employees with high-quality LMX would perceive the respect and trust of their managers, and likely reflect their managers' quality visions and commitment in their work behaviors (Sparrowe, *et al.* 2006). Sharing their managers' quality vision and commitment would then lead to superior quality HCTS. Consequently, customers perceive the HCTS rendered more positively. Contrarily, with low-quality LMX, employees would tend to view their relationships with managers as primarily transactional (Sparrowe 2018), which means that the mutual obligation among them develops into doing no more than what is required per the employment contract. With such a relationship, appeals to shared visions for quality enhancement tend to sound hollow to employees

(Sparrowe, *et al.* 2006), even if the manager shares his/her quality-oriented vision with them. Low-LMX employees are then unlikely to provide high-quality HCTS expected by their managers, yielding unfavorable customer perception of service. Our arguments above suggest the following hypothesis.

Hypothesis 2a: Customer orientation and management commitment to service quality are interacted to have a positive effect on customer perception of the service encounter.

Hypothesis 2b: Leader-member exchange and customer orientation are interacted to have a positive effect on customer perception of the service encounter.

Hypothesis 2c: Management commitment to service quality and leader-member exchange are interacted to have a positive effect on customer perception of the service encounter.

3.2.2 The three-way interaction effect

The contingency approach helps to develop and understand the pairwise relationships among CO, MCSQ, and LMX. Nevertheless, due to its feature of reductionism, it provides limited explanation on complex organizational phenomena (Van de Ven, et al. 2013), such experiential service design. The configuration approach is useful to address the interrelated activities from a more holistic perspective (Van de Ven, et al. 2013). According to the configuration theory, a work system is made up of a set of constituent elements (Miller 1986). These elements are independently connected in ways that coherently function together to yield an overall pattern, i.e., a work system (Sinha and Van de Ven 2005). Per this perspective, the alignment or fit of a system is reflected in the overall pattern (Miller 1986). The configuration approach helps companies identify unique patterns of interconnected elements that enable them to achieve superior performance (e.g., Liu, et al. 2016, Lyu, et al. 2019, Yan, et al. 2021). Applying the configuration perspective in the studied context, we submit that all the organizational elements (i.e., CO, MCSQ, and LMX) are expected to simultaneously operate as a whole and align with

one another with mutual dependence to generate a congruent delivery of service to enhance customer experience.

We posit that there is a three-way interaction among CO, MCSQ, and LMX to collectively influence customer perceptions of the service encounter. Earlier, we discussed how CO and MCSQ interact and reinforce each other to impact customer perception of HCTS. Under a strong customer-oriented atmosphere in shops and with a strong commitment to service quality in managers, employees are likely directed to carry out the manager's quality initiatives that lead to positive customer perception of HCTS. Such an effect is likely to be further enhanced when there are strong LMX relationships in firms.

The LMX literature advocates that there is a spectrum of LMX quality ranging from low to high (Sparrowe 2018). Research on LMX suggests that employees with a higher-quality LMX are more prone to espouse the visions and goals of their management and tend to be more engaged in extra-role behaviors in the workplace (Muñoz-Doyague and Nieto 2012). Accordingly, in the HCTS context, when the shop's atmosphere is customer-oriented, employees with high-quality LMX are prone to share the quality vision and internalize the quality commitment of their managers. This means that the tasks expected by the shop manager and any extra services required by customer exigencies are taken up more readily and willingly by the high-LMX employees. Hence, they tend to put more effort in extra-role jobs when offering HCTS. Consequently, the shop is able to provide more complete services that the interaction effect of all the three drivers would permeate throughout the entire service encounter, leading to positive customer experience. Accordingly, we predict that customer orientation, quality commitment, and quality of the manager-employee relationship create a three-way interaction enhancing customer perception of the service encounter.

Hypothesis 3: A three-way interaction term involving the three drivers (i.e., customer orientation, management's commitment to service quality, and quality of

leader-member exchange relationship) has a positive effect on customer perception of the service encounter.

4. Methodology

4.1 Sample

High-contact services of the transient and high-uncertainty type are ubiquitous in Hong Kong. First, Hong Kong is fundamentally a service-oriented economy. According to the Hong Kong Coalition of Service Industries (2018), the service sector accounts for over 90% of Hong Kong's economy over the last decade. Second, Hong Kong has a huge, skewed toward tourist population. The Hong Kong Census and Statistics Department (2020) shows that the number of visitor arrival increased significantly from 36 million in 2010 to 55.9 million in 2019, while the population of Hong Kong was only around 7 million over this time period. To take a closer look at the tourist population, many of the visitors are day tourists that descent on service shops with varied needs and wants, making the levels of uncertainty and transience the service shops face extremely high.

The sample for this study comes from the Hong Kong's service industry. We first identified major shopping districts in Hong Kong and randomly chose main shopping malls in each district. Subsequently, we randomly selected small service shops that would involve customer interactions and transient encounters in service delivery. Small shops were considered to ensure HCTS; as such, we controlled the shop size between four to eight service employees.

We conducted a *multiple-respondent survey* of a sample of HCTS shops. We chose small-sized service shops with three to eight frontline customer-contact employees. With a view to enhancing the generalizability of our study, we selected various kinds of HCTS. We excluded service companies involving a low level of customer contact, e.g., convenient stores and fast-food restaurants. Table I reports the types of HCTS companies in our study.

4.2 Data Collection Procedures

To ensure that the items of the questionnaires were conceptually valid in the HCTS setting and that the respondents clearly understood the items, we piloted the survey in seven shops that clearly met our HCTS requirement. In the pilot study, we verified the relevance of the constructs to their corresponding measurement items. We clarified the question wording and the instructions in the survey. Upon completion of the pilot study, the survey questions became more relevant to the HCTS context and the instructions were clearer to the potential respondents.

To alleviate the single-respondent bias problem common in survey research, we collected data from *multiple respondents* in each shop. There were three groups: managers, service employees, and customers. The survey packet for each shop included one “shop-in-charge person” questionnaire, three “service employee” questionnaires, and five “customer” questionnaires. The shop-in-charge person was the shop owner or shop manager responsible for managing both the strategic and operational functions in their individual shops. This person was responsible for answering the questions on CO and MCSQ. Service employees were the frontline workers and responded on the quality of LMX. Customers were responsible for answering the questions on customer satisfaction. They developed perceptions from their personal experiences of the services provided by the shop.

To solicit the participation of HCTS shops in this study, we deployed a research team with sixteen members. First, we asked our team to conduct an on-site visit to each shop. The purpose of the on-site visit was to explain our survey criteria clearly to the potential participants in person. Our team then delivered the questionnaires individually to the four respondents individually in each shop, i.e., one person-in-charge of a shop and three service employees. We collected the filled questionnaire from each respondent individually in person.

Next, we collected data on customer satisfaction from customers randomly selected

within one week of obtaining the manager and employee data. We approached them individually after they purchased from the shop, we acquired data from five customers for each shop at various time slots on at least two separate days. The research team visited 350 service shops in total. We finally collected a complete set of data from 225 service shops, where a complete set refers to responses from a shop leader, three service employees, and five customers. Therefore, this complete set includes 2,025 respondents, including 1,125 customers, 675 service employees, and 225 shop leads. The sample size is 225 service shops. The response rate is 64.3%. Table I shows the distribution of the sampled shops.

(------ Table I about here ------)

4.3 Instrument Development

We draw the measurement items in this study from well-established instruments in marketing, OM, and organizational behavior. We use a seven-point Likert-type scale ranging from 1 being "totally disagree" to 7 being "totally agree."

Customer orientation: The construct of CO is built on the broader concept of market orientation (Dabrowski, *et al.* 2019). The relative importance of CO as compared with market orientation has been discussed widely (e.g., Lukas, *et al.* 2013). Deshpandé, Farley, and Webster (1993) developed a scale for CO, but it is actually more appropriate for the manufacturing industry working with industrial customers. We therefore turn to the scales of CO used in the service marketing and strategy literatures, particularly for the service sector with high customer contact (e.g., hotels). We identify a few key indicators such as fulfilling customer needs (e.g., Homburg, *et al.* 2002), ensuring customer satisfaction through service delivery processes (Hartline, *et al.* 2000), and encouraging customer engagement (e.g., Danneels 2003). [Cronbach's $\alpha = 0.890$, AVE = 0.733, Construct reliability = 0.891]

Management commitment to service quality: We use Hartline and Ferrell's (1996) scale for measuring MCSQ, which is well known in the marketing literature. We refine the scale by

choosing the seven most relevant items in our research context, including a strong sense on the part of the shop leader toward service quality, discussion with employees concerning service quality, and certain other items. [Cronbach's α = 0.902, AVE = 0.576, Construct reliability = 0.904]

Leader-member exchange relationship: We measure LMX using a scale developed in prior studies (Janssen and Van Yperen 2004). The scale includes seven items such as "suited to each other", "understands my problems", and "effective work relationships". This scale is usually employed in service studies (Gajendran and Joshi 2012, Yee, *et al.* 2015). Nevertheless, after the pilot testing, we delete the item relating to "defend and justify the decision of my supervisor". According to the service employees in our pilot test, this item is not suited for small service shops with a simple organizational structure. We adopt all the other six items. [Cronbach's α = 0.925, $r_{wg)}$ = 0.934, ICC(1) = 0.435, ICC(2) = 0.607, AVE = 0.699, Construct reliability = 0.932]

Customer satisfaction: We gauge customers' service experience by measuring customer satisfaction, which is an emotional state associated with the customer's experience with a shop, i.e., a summary state. This overall state covers the key service facets that customers experience, consider the essentials in the service context, and influence their satisfaction (Oliver 1997). Accordingly, we capture customer experience through customer satisfaction. Consistent with previous studies (e.g., Gustafsson, *et al.* 2005), we measure customer satisfaction in terms of various service facets, including price, enquiry service, customer service in transactions, after-sales service, and service in handling of dissatisfaction. [Cronbach's α = 0.911, r_{wg} = 0.936, ICC(1) = 0.556, ICC(2) = 0.714, AVE = 0.676, Construct reliability = 0.912]

4.4 Data Aggregation

The unit of analysis is at the shop's level. The data collected from the shop leader on CO and MCSQ exist at the shop level. However, for LMX and customer satisfaction, three employees

and five customers completed the questions, respectively. As such, the data exist at the individual employee level and at the individual customer level, respectively, and we would need to aggregate the individual-level data to the shop level. We, therefore, conducted additional testing to justify the data aggregation.

Following the recommendations in the literature (James, *et al.* 1984), we computed three coefficients of intergroup agreement: within-shop agreement statistics (r_{wg}) and two intra-class correlation statistics, i.e., ICC(1) and ICC(2). The values of r_{wg} for the variables of LMX and customer satisfaction are 0.934 and 0.936, respectively. These values are larger than 0.7, the lowest appropriate threshold for the aggregation of individual-level measures to the unit level (James, *et al.* 1993). The ICC(1) values are 0.435 for LMX and 0.556 for customer satisfaction. These values are higher than the acceptable minimum value of 0.12 as recommended by James (1982), providing a strong support of data aggregation. The values of ICC(2) are 0.607 and 0.714 for LMX and customer satisfaction, respectively. All the ICC(2) values exceed the cut-off point of 0.6 (Glick 1985), indicating that data aggregation to the shop level is proper. To sum, all the values of r_{wg}, ICC(1), and ICC(2) support averaging individual-level responses to the constructs of LMX and customer satisfaction to create shop-level variables.

4.5 Measure Validation

Prior to conducting analysis of the hypotheses, we assessed the relatability and validity of the measurement. As shown in the Appendix, all the constructs demonstrate satisfactory levels of reliability, with the values of Cronbach's alpha higher than the cutoff point of 0.8, ranging from 0.89 for customer orientation to 0.925 for leader-member exchange (Nunnally 1978). The composite reliability ranges from 0.891 for customer orientation and 0.932 for leader-member exchange, higher than the acceptable value of 0.8 (Lance, *et al.* 2006).

We further examined the convergent validity and discriminant validity of the constructs by following Fornell and Larcker (1981). For convergent validity, we evaluated construct

reliability and average variance extracted (AVE). All the values of construct reliability were above the recommended criterion of 0.8 (Nunnally 1978), ranging from 0.891 for customer orientation to 0.932 for leader-member exchange. The AVE values ranged from 0.576 for management commitment to service quality to 0.733 for customer orientation. All the AVE values were above the suggested criterion of 0.5. We assessed discriminant validity by determining whether the AVE that each construct accounts for in its own indicators was greater than the shared variance among the construct pairs, i.e., their squared correlation. The AVE values for customer orientation, management commitment to service quality, leader-member exchange, and customer satisfaction were 0.733, 0.576, 0.699, and 0.679, respectively, while the highest value of the squared correlation between any pair of these constructs was only 0.169. Such findings provide strong evidence for discriminant validity. In sum, the above results offer rigorous support for the relatability and validity of all the constructs in this study.

4.6 Analyses and Results

We employ a hierarchically moderated regression analysis to examine our hypotheses. This analysis is especially suitable for comparing various models with and without the interaction terms (Jaccard and Turrisi 2003). Following the suggestion of Aiken and West (1991), we standardized each predictor variable before creating the interaction terms. For each hypothesis, we conducted regression diagnostics to check the fulfilment of model assumptions. We carried out a Kolmogorov-Smirnov test to assess for normality. The results support the univariate normality assumption. We also calculated the variance inflation factor (VIF) values. The results reveal no significant multicollinearity problem (all VIF values < 1.969). Table II lists the means, standard deviations, and zero-order correlations for all the constructs included in the analyses. A closer look at the descriptive statistics reveals no major violations of the regression assumptions.

Table III shows the results of the hierarchical regression analyses. Firstly, we note the direct effects of CO, MCSQ, and LMX which, together, explain a share of the variance in customer satisfaction, which is statistically significant (Model 1: $F = 4.066$, $p < 0.01$). Surprisingly, MCSQ shows no significant direct relationship with customer satisfaction (Model 1: $\beta = 0.012$, n.s.), and neither does CO (Model 1: $\beta = 0.038$, n.s.). However, LMX shows a significant, positive relationship with customer satisfaction (Model 1: $\beta = 0.214$, $p < 0.01$). Thus, Hypothesis 1 is partially supported. Next, we examine the two-way interaction terms. The addition of these product terms does not increase the variance explained in customer satisfaction (Model 2: $\Delta F = 1.232$; n.s.). Hence, Hypothesis 2 is not supported.

Finally, we tested the three-way interaction term concerning the third hypothesis of the current study. The addition of this interaction term significantly increases the variance explained in customer satisfaction (Model 3: $\Delta F = 6.588$; $p < 0.05$), suggesting that the three-way interaction effect of CO, MCSQ, and LMX predominantly accounts for customer satisfaction among the sampled firms ($\beta = 0.230$, $p < 0.05$). The R^2 increases from 0.052 in Model 1 to 0.096 in Model 3, equivalent to an increase of 4.4%. This amount of increase in R^2 is generally common in research, for instance management studies (e.g., Reinholt, *et al.* 2011) and psychology studies (e.g., Skarlicki, *et al.* 2016). More importantly, in the highly uncertain service system where customers' service perception depends upon random factors in their surrounding environment, such as those firms under study here, what may appear to be a relatively moderate increase in customer satisfaction may indeed have a substantial impact on firm performance. Therefore, Hypothesis 3 is supported. In contrast to the two-way interactive effects, the three-way interactive effect of CO, MCSQ, and LMX is positive and significant, suggesting that when the three constructs *simultaneously* work together, customer satisfaction is significantly improved. To advance further interpretations, we plotted the three-way interaction term in line for two levels of LMX and CO, defining the low level as minus one

standard deviation from the mean and the high level as plus on standard deviation from the mean. For each level of LMX and CO, we plotted the relationship between MCSQ and customer satisfaction. Figure II shows the results. As can be seen in this figure, customer perception is the highest when management commitment, leader-member exchange, and customer orientation are high.

(------ Table II above here ------)

(------ Table III above here ------)

(------ Figure II above here ------)

5. Discussion

At the core of this study are the small-sized shops offering HCTS (i.e., jewelry shops, fine-dining restaurants etc.). They are ubiquitous and affect our daily lives, but have not received much attention in the literature. The specific operating characteristics of the HCTS setting make the management particularly challenging. The services are often rendered to customers in transit (i.e., transient delivery) and with minimal information of their preferences (i.e., high uncertainty). In this study, considering the features of HCTS, we advocate that creating a service experience in the customer is the best for a HCTS system with a shop's customer orientation, manager quality commitment, and employee relationships. Specifically, we investigate that all the possible effects among CO, MCSQ, and LMX (i.e., their main effects and their two-way and three-way interaction effects). The analysis results disclose an intriguing outcome. Only the three-way interaction term among the three drivers shows a significant positive effect on customer service perception. None of the two-way interaction terms is significant and, except for LMX, none of the direct effects is significant. Taken together, our results support the *holistic* approach for creating customer experience widely advocated by service scholars (e.g., Voss, *et al.* 2008), demonstrating that under the HCTS system, all three constructs have to *simultaneously* interplay with one another to evoke a favorable service

experience to customers. To state more explicitly, as shown in Figure II, when they are all *simultaneously* present at their *high* levels and interact collectively with one another, customer perception of HCTS is the *most* favorable. Noted that all of the other seven combinations generate lower service outcomes.

Although we find that customer perception is affected by LMX (i.e., the only significant main effect), we caution against concluding that LMX alone is essential for customer perception. To explain this in the HCTS context, we note that HCTS tasks are expected to be customer-oriented and performed at high-quality levels. Therefore, implementing such tasks often requires employees to exert their extra-role effort while offering customer-oriented and high-quality service. Generally, employees might put in additional effort to work because of the good relationship with their manager. Nonetheless, it is doubtful that LMX alone would really ensure that their effort is proper for customer-oriented, quality HCTS, especially if managers do not influence them through the LMX relationship by imparting quality commitment to them and fostering a customer-oriented service value in them.

5.1 Theoretical Contributions

The importance of customer service experience is well recognized. Previous research has investigated customer experience design in the service operations involving high customer contact, for instance, experience-centric services (Zomerdijk and Voss 2010), hotel (Gross and Pullman 2012), and touring (Dixon, *et al.* 2017). Moving beyond, this study raises the level of abstraction to the high-contact services with *transient* nature—services operating under time pressure and being perceived by customers instantaneously. What customers perceive in the service delivery process affects their immediate behavioral and emotional responses, highlighting the importance of customer experience in these services. To the best of our knowledge, our study is one of the first that advances understanding of customer experience in the high-contact service system with transient nature.

This study also contributes to theorizing the configuration of high-contact services of the transient nature. Prior research studies on service experience design often focuses on investigating the direct relationships among design choices and service outcomes (e.g., Smith, et al. 2017, Zomerdijk and Voss 2010). In contrast, this study explicitly examines the holistic service experience that is captured not only through direct relationships with design elements but also from the perspective of their intricate interactions. In other words, we adopt the contingency approach and the configuration approach to theorize and empirically test how the fit of design elements affects customer experience. The results of the contingency analysis show that none of the two-way interactions among design elements are significantly associated with customer satisfaction. This non-significant finding confirms that the contingency approach is unable to explain the service performance in the HCTS context. Instead, the results of the configuration analysis reveal a significant effect of the three-way interaction term. This highlights that customer experience in the HCTS context comes from a range of various design elements that are interconnected. When investigating the effects of these design elements on service performance, it is necessary to consider their integrative effect and determine the configuration concerning how they align with one another. Hence, the implication of this study is that the configuration approach is necessary to understand how design elements are interrelated and their fit makes an integrative effect on service performance.

In addition, this study contributes to the theory of service design. The results of the configuration analysis demonstrate that customer experience is generated from a specific configuration of the constructs, i.e., firm's value of customers, manager's quality commitment, and employee relationship, under which they align with one another. This is a particularly important finding that highlights the importance of their alignment in the realization of the intended service experience. In the HCTS context, the success of customer experience design is not simply related to the relationships between design choices and service outcome (e.g.,

Victorino, et al. 2013, Zomerdijk and Voss 2010). Instead, it arises from the development of a coherent service configuration that incorporates a range of design elements and their interactions, i.e., firm's value of customers, manager's quality commitment, and employee relationship. All three constructs have to simultaneously interplay with one another to evoke a favourable service experience to customers. Moreover, the finding from the configuration analysis supports the notion that the proper alignment of the design elements with the process characteristics can help create favourable customer experience, as advocated in the literature on strategic service design and customer experience (e.g., Secchi, et al. 2019, Victorino, et al. 2013). Our study is a response to Field, et al.'s (2018) call for more research to understand how service design and service experience concept fit together to create customer experience.

5.2 Managerial Implications

Our study recommends that customer experience is holistically created from an orchestration of customer orientation, management commitment, and employee relationships in the service system with the high-uncertainty and transient nature. Managers need to note that the customers' service experience in their HCTS system is developed *simultaneously* through a strategic focus on diverse customer needs, supported by shop manager, and conducted through a harmonious shop environment.

The absence of any one of the three elements would render the other two constructs ineffective. As such, managers are suggested to work out all three elements at all times, instead of putting a priority to only one or two elements, while creating a favorable service experience in customers. Prioritization is a managerial practice widely used in managing an organization by taking the consideration of its limited resource (e.g., Tucker and Singer 2015). This may be particularly the case in small-to-medium sized service shops that often have limited organizational resources.

6. Conclusion, Limitations and Future Research

The focus of our work is on high-contact, transient services. Even though HCTS affects our daily lives, it has not received much attention in the literature. Building on the emerging concept of service system design, we contribute to the literature by identifying specific design choices for customer experience and empirically examining their collective, interactive effect on customer experience. The investigation of HCTS involving high-uncertainty pushes us to depart significantly from the conventional wisdom of focusing on process systems, operational procedures, or best practices to the systems approach that emphasizes the simulations alignment among various management elements in the operating context. Such approach is further called for in dealing with less-structured problems.

As with all research, there are limitations of this study, which may point to intriguing areas for future research. In our study, the focus is on high-contact service systems that are specifically characterized by the uncertain and transient nature. We show that, in such a context, the interplay of CO, MCSQ, and LMX creates positive customer experience. Future research should be conducted to confirm if such a research context is a necessary condition for an interactive effect. For example, researchers may examine whether the level of customer contact (e.g., contact frequency) or the level of uncertainty (e.g., service variety) might moderate the three-way interaction effect to make it more significant (i.e., four-way interaction). This will help reveal a more complete set of management elements for service experience design. Another possible avenue for future research is to conduct a number of comparative case studies to identify the exact mechanism that these constructs interact to create positive experience in HCTS systems. Such case studies may derive descriptive insights (e.g., Barratt, *et al.* 2011).

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Figures and Tables

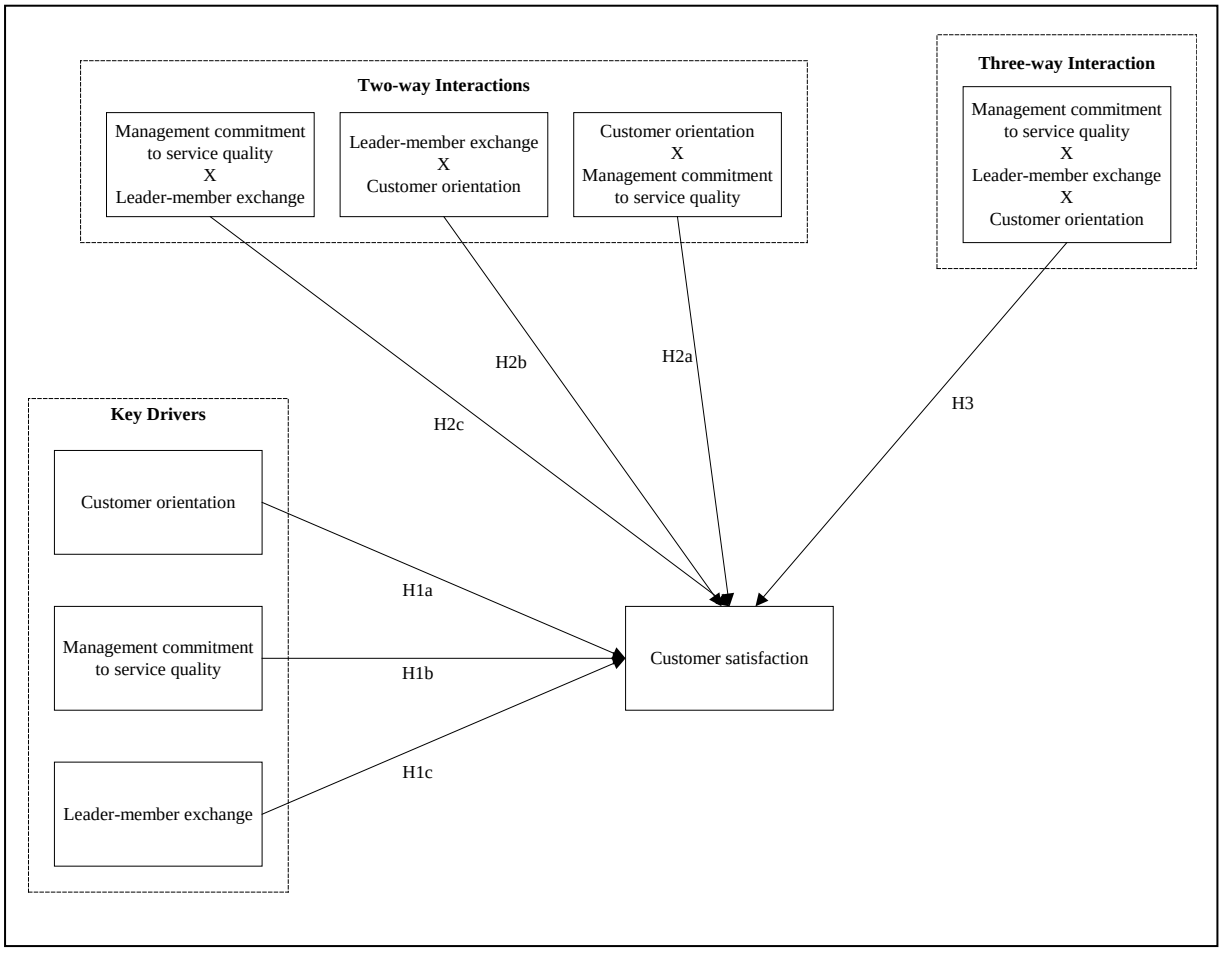

Figure I The hypothesized research model

Figure II The three-way interaction effects among management commitment to service quality, leader-member exchange, and customer orientation on customer satisfaction

Service Sector	Number of Shops
Agency service (e.g., estate agencies and travel agencies)	17
Beauty care services (e.g., salons and beauty shops)	35
Catering (e.g., steakhouses)	73
Fashion retailing (e.g., dress shops and shoes shops)	37
Optical services (e.g., optometry shops and optical shops)	10
Retailing of instruments (e.g., musical instruments shops)	9
Retailing of health care products (e.g., cosmetic shops)	12
Retailing of valuable products (e.g., jewelry shops)	13
Others	19
Total	225

Table I Distribution of sampled shops

Variable	Mean	SD	1	2	3	4
1. Customer orientation	6.221	0.996	1.000			
2. Management commitment to service quality	5.954	0.797	0.357***	1.000		
3. Leader-member exchange	4.844	0.781	0.171**	0.375***	1.000	
4. Customer satisfaction	4.863	0.639	0.078	0.105	0.225***	1.000

[a]n = 225 (shops)
*p < 0.05, **p < 0.01, ***p < 0.001

Table II Means, standard deviations, and correlations among study measures[a]

Variables	Customer Satisfaction		
	Model 1	**Model 2**	**Model 3**
Main Effect			
Customer orientation	0.038	0.042	0.015
Management commitment to service quality	0.012	- 0.028	- 0.053
Leader-member exchange	0.214***	0.211***	0.167**
Two-way Interactions			
Customer orientation × Management commitment to service quality		- 0.103	0.028
Management commitment to service quality × Leader-member exchange		- 0.055	- 0.056
Leader-member exchange × Customer orientation		- 0.010	0.000
Three-way Interaction			
Customer orientation × Management commitment to service quality × Leader-member exchange			0.230**
F	4.066***	5.298**	11.886***
$\triangle F$		1.232	6.588**
R^2	0.052	0.068	0.096
Adjusted R^2	0.039	0.042	0.066

[a] Standardized coefficients are reported.
*p < 0.1, **p < 0.05, ***p < 0.01

Table III Results of hierarchical regression analyses[a]

Appendix: Questionnaires and their measurement properties

(a) Shop-in-charge person questionnaire

Responses to the following questions range from 1 = "Totally disagree" to 7 = "Totally agree".

Customer orientation [Cronbach's α = 0.890, AVE = 0.733, Construct reliability = 0.891]

For the service delivery in our company, we focus on …

CO1	Building customer loyalty (0.808)[1]
CO2	Fulfilling customer needs (0.892)
CO3	Ensuring customer satisfaction (0.866)

Management commitment to service quality [Cronbach's α = 0.902, AVE = 0.576, Construct reliability = 0.904]

MC1	I feel strongly about improving the quality of this company's services. (0.746)
MC2	I enjoy discussing quality-related issues with people in this company. (0.720)
MC3	I gain a sense of personal accomplishment in providing quality services to the customers of this company. (0.677)
MC4	I explain to all of the service employees the importance of providing high quality services to the customers of this company. (0.726)
MC5	Providing high quality services to the customers should be the number one priority of my company. (0.809)
MC6	I am willing to put a great deal of effort beyond that normally expected in order to help this company deliver high quality services to the customers. (0.822)
MC7	I really care about the quality of this company's services. (0.800)

(b) Service employee questionnaire

Responses to the following questions range from 1 = "Totally disagree" to 7 = "Totally agree".

Leader-member exchange [Cronbach's α = 0.925, $r_{wg)}$ = 0.934, ICC(1) = 0.435, ICC(2) = 0.607, AVE = 0.699, Construct reliability = 0.932]

LM1	My supervisor and I are suited to each other. (0.574)
LM2	My supervisor understands my job problems and needs. (0.894)
LM3	My supervisor recognizes my potential. (0.913)
LM4	My supervisor is personally inclined to help me solve problems in my work. (0.881)
LM5	My supervisor considers my suggestions for change. (0.867)
LM6	My working relationship with my supervisor is effective. (0.841)

(c) Customer questionnaire

Responses to the following questions range from 1 = “Totally disagree” to 7 = “Totally agree”.

Customer satisfaction [Cronbach’s $\alpha = 0.911$, $r_{wg} = 0.936$, ICC(1) = 0.556, ICC(2) = 0.714, AVE = 0.676, Construct reliability = 0.912]

I am satisfied with …

CS1	the price of their purchased product(s) sold in this company. (0.768)
CS2	the enquiry service provided by this company. (0.751)
CS3	the customer service in transactions in this company. (0.861)
CS4	the after-sales service offered by this company. (0.862)
CS5	the service in handling customer dissatisfaction in this company. (0.862)

[1]Standardarized path weight from the latent variable to the measurement item.