



Managing internal service quality in hotels: Determinants and implications

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ABSTRACT

While internal service quality (ISQ) preconditions organizational service quality management, the tourism and hospitality management literature largely overlooks it. This study developed and tested a comprehensive model to understand the determinants and how they influence ISQ using an exploratory sequential mixed method. In study 1, we conducted 12 focus groups involving 86 hotel employees. ISQ is determined by three primary categories of organizational and personal practice: management systems (i.e., manage process, training and compensation), social systems (i.e., collaborative culture, interdepartmental communication and servant leadership), and personal characteristics (i.e., role stress, empathetic personality and collegial relationships). In study 2, we conducted 332 pairs of employee-supervisor questionnaires and confirmed the effects of these determinants on ISQ through employee's internal service orientation and efficacy. Distinct determinants interrelate to predict employees' internal service orientation and efficacy. This study thus provides hotels with targeted measures to improve their ISQ and competitive advantages.

1. Introduction

Over the past two decades, research has demonstrated the significance of internal service quality (ISQ) in tourism organizations (Bouranta, Chitiris, & Paravantis, 2009; Chen, 2013; Prentice, 2018). ISQ describes the perceived quality of service provided by employees in distinct work units or departments (Stauss, 1995). Previous studies indicate that ISQ is a prerequisite for achieving satisfactory service quality for customers (e.g., Bouranta et al., 2009; Prentice, 2018). However, in addition to the distinct target customers (e.g., employees vs. external customers), internal service differs from the external regarding how the former focuses on service quality, and customers' rights, needs and expectations (see Farner, Luthans, & Sommer, 2001; Large & König, 2009). Customer-oriented tourism organizations rely on achieving high ISQ to meet customers' dynamic needs. When it is a prerequisite to the strategy of overall service quality, ISQ can make firms more competitive by saving costs, improving efficiency, and satisfying its staff (Akroush, Abu-ElSamen, Samawi, & ; Bellou & Andronikidis, 2008). Because its complex internal processes, and how they influence, often cannot be understood and managed clearly (Braun & Hadwich, 2016), internal service is vaguer and thus less explored in research than external service, whose operational practices and requirements are

straightforward.

The theories of internal marketing (Grönroos, 1985) and service-profit chain (Heskett, Sasser, & Schlesinger, 1997) highlight the importance of internal service management in organizational management. An increasing number of tourism and hospitality companies, such as Ritz-Carlton Hotel, Southwest Airlines, and Starbucks have adopted internal service principles by promoting ISQ to maintain competitive advantage (Akroush et al., 2013; Heskett et al., 1997). Internal service is important for hotel employees owing to their work nature and needs. Hotel employees are facing various stressors in the workplace in that they must complete highly demanding tasks to meet customers' and supervisors' expectations (Goh & Lee, 2018). Moreover, hotel job vacancies are filled by young and inexperienced employees who require substantial support from their colleagues and supervisors (Stamolampros, Korfiatis, Chalvatzis, &). However, how hotels accommodate such support has not been given the research attention afforded to external customers (Stamolampros et al., 2019).

The research emphasizes mainly how ISQ is measured (e.g., Akroush et al., 2013; Brandon-Jones & Silvestro, 2010), and how it positively affects employees and organizations (e.g., Sharma, Kong, & Kingshott, 2016; Prentice, 2018) with few studies adequately exploring the determinants of ISQ (Akroush et al., 2013; Chen, 2013). However, the

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literature does indicate that employee participation in decision-making (Boshoff & Mels, 1995), internal marketing (Akroush et al., 2013; Anosike & Eid, 2011), and organizational cultures and leadership styles (Chen, 2013) can successfully motivate ISQ. Nevertheless, this branch of study concentrates on the small portion of the determinants of ISQ rather than a more comprehensive view and how they jointly produce outcomes (Akroush et al., 2013).

Therefore, this study aims to reveal fully the determinants and their influential mechanisms (i.e., intervening and contingency factors) that underlie the delivery of ISQ. Because we have used hotels as our study context, we provide hotels with targeted measures to improve their ISQ and ultimately build or maintain their competitive advantages.

2. Literature review

2.1. Internal service quality in the hotel industry

ISQ emerged in 1980s and has been greatly inspired by how management applies internal marketing theory (Grönroos, 1985) and service-profit chain theory (Heskett et al., 1997). The first holds that organizations should treat employees as internal customers and satisfy their needs by attracting, developing, and motivating them to achieve organizations' objectives. The *chain* in service-profit chain theory applies to a chain reaction from internal quality to external customer satisfaction that leads to firm profits (Heskett et al., 1997). If internal service is not well managed, the whole service chain to the customers will be undermined (Bouranta et al., 2009). Drawing on these two theories, studies are consistently being developed to find how ISQ influences employees' work attitudes and positively leads to work satisfaction, organization commitment, wellbeing, work performance, external service quality (e.g., Bouranta et al., 2009; Sharma et al., 2016), and firm performance (Akroush et al., 2013). While many hotel management studies focus on external service quality (e.g., Ling, Lin, & Wu, 2016), the forming and determining mechanism of ISQ remain largely unexplored.

Among the many service companies that have integrated internal service principles with their corporate strategies to maintain sustainable competitive advantages (Akroush et al., 2013; Heskett et al., 1997), Ritz-Carlton has notably regarded employees as 'internal customers', epitomized in its famous motto as "we are ladies and gentlemen serving ladies and gentlemen". Unlike external customers, who often face a handful of encounters associated with receiving service, internal customers of hotel organizations potentially face multiple service encounters in their daily work within both operational routines and their unexpected contingencies (Sharma et al., 2016). Furthermore, the role of internal customers, or internal service providers, is inconsistent, depending on the task performed (Bouranta et al., 2009). To date, while only a few studies investigate ISQ in the hotel sector, most use survey methods (see Table 1), which fail to comprehensively understand ISQ and its formation (Yao, Qiu, & Wei, 2019).

2.2. The determinants of ISQ

Parasuraman, Zeithaml, and Berry's (1985) service quality gap model has been extended to an ISQ model that identifies three gaps existing in ISQ and explains how they occur (Frost & Kumar, 2001; Pitt, Berthon, & Lane, 1998). These gaps occur mainly when (1) internal service is specified and delivered across different work units or departments, (2) internal service providers and receivers make their perceptions, and (3) external customers compare their perceptions and expectations (Frost & Kumar, 2001). Gaps 2 and 3 are difficult to control

Table 1
Overview of ISQ studies related to hotels.

Authors	Method	Research Participants	Findings
Bai, Brewer, Sammons, and Swerdlow (2006)	Survey	862 employees in one casino hotel in Las Vegas, US	ISQ positively leads to organizational commitment
Bouranta et al. (2009)	Survey	100 waiters in 27 restaurants in Greece	ISQ dimensions (i.e., reliability, safety and internet) positively lead to external service quality
Chen (2013)	Survey	582 employees in 25 international tourist hotels in Taiwan	Transformational leadership and bureaucratic organizational culture have the greatest influence on ISQ
Akroush et al. (2013)	Survey	334 managers and employees of 25 restaurants in Jordan	Staff training, recruitment and internal communications will positively influence ISQ
Prentice (2018)	Survey	370 dealers in casinos in Macau, China	ISQ influences service performance through occupational commitment and job security

entirely because they vary according to the people involved. Therefore, this study focuses on gap 1. While this model derived from Parasuraman, Zeithaml, and Berry (1985) briefly explains how ISQ gaps are formed, it does not identify the determinants.

The literature suggests some determinants of ISQ. For example, Frost and Kumar (2001) rank seven, from most to least important: perceived control, supervisor control systems, role ambiguity, technology-job fit, role conflict, employee-job fit, and teamwork. Chen (2013) finds that organizational cultures and leadership styles partially explain ISQ, thus suggesting more determinants need to be explored. Wahyuni-Td and Fernando's (2016) qualitative research of managers from airline businesses finds five factors are crucial in promoting ISQ. They are human factors, management style, punctuality, sales/marketing and safety.

While the literature explains certain aspects of ISQ determinants, it offers few perspectives on single or narrow facets of them. Although several organizational determinants were identified (e.g., organizational cultures and leadership), their distinct effects on ISQ were seldom identified and compared. The current framework of primary determinants is incomplete; for example, employee's personal characteristics in delivering ISQ were rarely considered even though individual differences can influence the level of internal service. Similarly, little research explores how the determinants of ISQ lead to such quality. This study thus attempts to bridge that knowledge gap by identifying and testing the prominent factors affecting ISQ.

3. Research methodology

To do so, we employed an exploratory sequential design using mixed methods. Since the theoretical framework of ISQ determinants is unclear, qualitative testing was needed to precede quantitative validation (Creswell & Plano Clark, 2011). In study 1, focus group interviews were conducted and responses were coded and analyzed for possible determinants of ISQ by using thematic analysis. In study 2, we used a questionnaire to validate and extend the results of study 1. Combining qualitative and quantitative methods comprehensively clarifies research problems, because we incorporate the strengths of both (Creswell & Plano Clark, 2011).

4. Study 1: qualitative study

4.1. Sampling and data collection

During March–April 2019, we conducted 12 focus groups in six five-star hotels in Xiamen city, a popular travel destination in southeast China. Tourism represents a strong economic pillar for Xiamen, ranked among the top three domestic destinations and the top 10 inbound destinations in China (China National Tourism Administration, 2019). As Frost and Kumar (2001) indicate, ISQ is more critical in large service organizations since internal service gaps occur more often among numerous departments and work units. Therefore, we targeted large-scale, high-star hotels in this study because they involve numerous internal service encounters within the organizations. Eight hotels were randomly selected from the star hotel list announced by the Xiamen Tourism Administration, of which six hotels agreed to participate. All were full-service hotels with rooms numbering from 327 to 620. With approval from each hotel's executives and assistance from human resource (HR) departments, we conducted two semi-structured focus group interviews in each hotel (one with frontline staff and one with back-office staff), to comprehensively understand the determinants of ISQ.

Our research reached theoretical saturation (see Strauss & Corbin, 1998) with 10 focus group sessions in five hotels when additional data collected from the sixth hotel failed to reveal novel aspects, points or issues. Focus groups provide a reasonably effective and inexpensive tool for gathering a broad range of viewpoints (Wilkinson, 2008). It is applicable when there is a focused topic that can be discussed, and the interview does not involve sensitive information or controversial topics (Lazar, Feng, & Hochheiser, 2017, pp. 187–228). Since our topic, ISQ, emanates from collegial interaction in the workplace, focus groups were used to support interactivity and help participants trigger each other's opinions, as well as overcome the potential shortcomings of individual interviews (i.e., non-talkative participants and awkward discussions). Each focus group lasted approximately 90 min, consisted of up to eight participants [note that our dividing front-from back-office staff provided us with homogeneous grouping (Catterall & Maclaran, 2006)]. Employees with less than one year's tenure in their current hotel were excluded because they could not accurately evaluate their organization's ISQ. Study 1 recruited 86 participants (45 frontline employees and 41 back-office staff), of which 52 were female; they received a thank-you gift after the interview. Nearly three-quarters of the interviewees were between 22 and 30 years old, and the others had worked in their current hotel for more than three years.

Each focus group was moderated by the first author, with two pre-trained research assistants observed and took notes. Face-to-face interviews were held in the participants' locales (i.e., hotel conference rooms) away from managers/supervisors, conducted in Chinese, and digitally recorded with participants' permission. To set the tone of discussions, a brief ice-breaking session began each focus group so participants could become familiar with each other. They were asked to take turns in voicing their opinions and were informed of their rights to withdraw their participation at any time and that their input would remain anonymous. All were free to interpret each question from their own perspective. A semi-structured interview protocol (see Appendix) was designed to help maintain focus. Questions were organized in the following sequence that relates to *internal provider-customer relationship* identification (i.e., whether interviewees recognize their dual roles as both internal customers and service providers); factors influencing the delivery of ISQ (i.e., drawn from their exemplifying how their cross-department or unit colleagues support them); and their expectations and evaluations of ISQ in their current organization. As interviewees

may have found ISQ to be a complicated term, we replaced it used "cross-department/cross-unit support". To investigate the determinants of ISQ, we used a critical incident method as exemplified in the service quality literature (Yang & Coates, 2010). Participants were asked to recall and narrate their favorable or unfavorable interactions with their cross-department and unit colleagues in the workplace.

4.2. Data analysis method

All digital and paper-pencil recordings of the interviews were immediately transcribed to minimize data loss. After we three authors decided categories, which were coded and built, two analyzed the data independently. The results of the main and sub-categories were compared and verified by the third of us. The resulting proportional agreement was 0.82, which exceeds the threshold of 80 percent (Neuendorf, 2002), thus indicating inter-analyst reliability. In addition, the category-building process was reproduced, and similar results found the inter-coder reliability to be consistent.

4.3. Findings of study 1: a proposed model

Software NVivo 12.0 was used to assist with coding and analysis. The frequencies of sub-categories appearing in our interview text were calculated (see Table 2). While all interviewees identified their dual role as an internal customer and an internal service provider, only 66.3 percent agreed that their organization's internal delivery system was successful. We conducted the three-step coding procedure to capture and explain the observed phenomena. At the first stage of open coding, we identified 32 themes by analyzing the data sentence-by-sentence (Locke, 2001). Only 18 themes remained after we abandoned four themes not related to ISQ, six single-instance-themes, and four mentioned little by interviewees (<10%, i.e., job responsibility, mood at work, work value, organizational resource) (see Papathanassis & Knolle, 2011). At the second stage of axial coding, relationships of each theme were further examined so that codes were combined into overarching themes. We identified three main categories and nine sub-categories of determinants that affect ISQ in the hotel industry (see Table 2).

Fig. 1 displays the determinants and influencing model of ISQ developed from the findings of the open and axial coding. Management systems refer to organizations' written policies and procedures that directly regulate how employees respond to their firm's objectives (Richtnér & Ahlström, 2010). Whereas management systems may be regarded as a formal control mechanism to manage internal service, the firm's social systems contextualize the interactions that employees have in their work environment (Goebel & Weipenberger, 2017). Factors such as organizational culture and leadership act as an informal control mechanism to indirectly influence ISQ. As well, the interviewees widely acknowledged the vital role of personal characteristics in determining ISQ in that individual personal differences influence the level of internal service.

At the third stage of selective coding, core categories of the main concerns or problems experienced by employees are examined in the context involved, from which we identified two core ones from study 1, namely, the internal service providers' *willingness* and *ability to achieve ISQ*. While *willingness* represents their individual attitudes that lead them to promote ISQ, *ability* represents their skills, knowledge and other capacities to deliver internal service. These two core categories occurred repeatedly and closely linked the above-mentioned three categories to delivering ISQ, thus indicating they are two prerequisites for achieving ISQ. For example, the interviewees frequently mentioned that "they cannot" (i.e., their internal service capabilities are restricted to) deliver ISQ even when they "want to" deliver good internal service; for example,

Table 2
Distributive statistics results of the main- and sub-categories.

Main categories	Subcategories	Total N (Percentage)	Statements
Management systems	Process management system	50(58%)	The process of approving repairs is too cumbersome, and we waste a lot of time on ... We need to wait for all the procedures to be approved. So how can we quickly respond to the front office's need? (a 26-year-old male staff member, engineering department)
	Training system	20(23%)	Training enables us to have a better understanding of frontline work ... we can provide support more effectively. (a 35-year-old male staff member, security department)
	Compensation system	12(14%)	Top management recognize our contribution of internal service to the frontline and provide some incentive for our work. (a 25-year-old female staff member, accounting department)
Social systems	Collaborative culture	61(71%)	Our hotel calls for a supportive culture and transmits it to every employee ... We are influenced by the culture imperceptibly and have formed a habit of acting to support our colleagues. (a 28-year-old female staff member, human resources department)
	Interdepartmental communication	46(53%)	Regular communication across distinct departments is important so that we can effectively adjust our job to support them. (a 28-years-old female staff member, housekeeping department)
	Servant Leadership	35(41%)	Our departmental managers often work overtime to support other frontline department. They have set good examples for us. (a 32-year-old female supervisor, housekeeping department)
Personal characteristics	Role stress	42(49%)	Almost every department of our hotel is short of labor. If I cannot finish my own work, how can I support colleagues in other departments? (a 26-year-old female staff member, housekeeping department)
	Empathetic personality	20(23%)	People varies in their attitudes towards other colleagues ... Some people are born with warm heart and concerns for others. (a 30-year-old female supervisor, housekeeping department)
	Collegial relation	17(20%)	I have good personnel relationship with many colleagues in front office. We eliminated many obstacles during our cooperation. (a 28-year-old male staff member, food and beverage department)

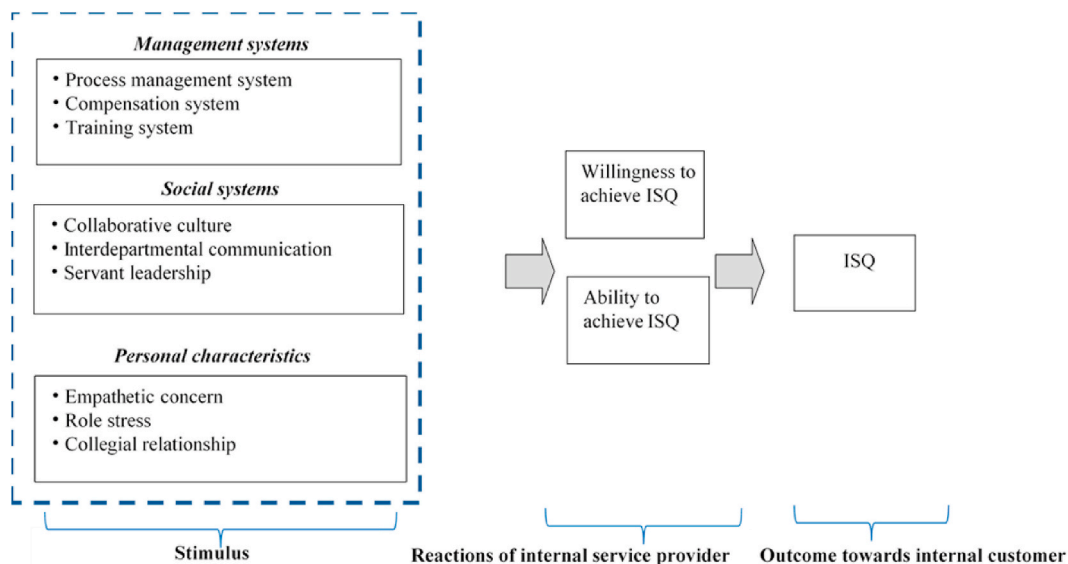


Fig. 1. The determinants and influencing model of ISQ.

when they work with great role stress or in a situation without suitable procedures). These two core categories ensure that the proposed relationships between determinants are adequately developed and explained (Locke, 2001). In addition, nearly one-third of interviewees indicated that these determinants do not work independently. Several interviewees recalled that they are more willing to provide quality internal service, even under a heavy workload, when they are supported by an experienced culture or leadership. These determinants are thus likely to combine in determining ISQ.

As Fig. 1 shows, the model accords with the stimulus-response-outcome process, which reflects how factors influence internal service providers' reactions and ultimately their behaviors toward internal customers. This model is suitable to explain the case for the ISQ gap (Frost & Kumar, 2001) that, when employees are unwilling or unable to

perform a high ISQ, a gap occurs because employees are not aware of, nor comprehend, nor are able to deliver their internal service well. This study offers three propositions that will be validated in study 2.

Proposition 1. ISQ is influenced by three primary categories of organizational and personal practice, namely, management systems (consisting of process management, training and compensation), social systems (consisting of a collaborative culture, interdepartmental communication and servant leadership), and personal characteristics (consisting of role stress, empathetic personality and collegial relationships).

Proposition 2. The determinants are more likely to affect ISQ indirectly than directly through linking internal service providers' willingness and ability.

Proposition 3. *Formal management systems, informal social systems and personal characteristics interact in predicting internal service providers' willingness and ability to deliver ISQ.*

5. Study 2: quantitative study

5.1. Theory and hypotheses

Based on the results of study 1 and other ISQ research, in study 2, we developed a quantitative method to verify our proposed model. The relationships between the determinants and ISQ accord with conserving resources theory (Hobfoll, 1989, 2001) that describes how employees always retain valuable resources and avoid their exhaustion. First, from a resource conservation theory perspective, different types of ISQ determinants can be considered as the internal and external resources that play distinct roles within different contexts (Alvaro, Lyons, Warner, Hobfoll, & Brown, 2010). For example, management and social systems can be regarded as external resources and conditions outside of individual energy; personal characteristics can be attributed to internal resources that are related to individuals' psychological, emotional, and relational energy (Hobfoll, 2001). Except role stress, which might cause employee's physical and emotional resource exhaustion, other determinants, by which employees can hope to facilitate internal service delivery, are valuable. Second, the literature applies resource conservation theory in a hospitality setting to understand how employees behave during customer service delivery (e.g., Zhou, Ma, & Dong, 2018). This theory also helps this study to explain our hypothesized model because it acknowledges the combined effect of various resources on an event. The distinct relationships among the determinants and ISQ are proposed in the following sub-sections.

5.1.1. The relationship between management systems and ISQ

Process management system. Hotel operations are highly process-orientated as managers seek to decrease cross-functional conflict and increase internal coordination. Two achievements of such management are relevant to this study: first, this strong focus improves cross-functional integration and customer orientation (Tang, Pee, & Iijima, 2012), and second, having well-developed services is crucial for firm performance (Zhang, Kang, & Hu, 2018). Therefore, we propose that a strong process management system promotes ISQ in hotel firms.

Training system. Even though skill shortages greatly challenge hotels, they also face having their employees often not receiving enough training (Stamolampros et al., 2019). Training not only helps employees understand what their work means and their firm's objectives, but also improves their knowledge and skills to align their jobs with these objectives (Akroush et al., 2013; Chang, Wang, & Huang, 2013). Because the literature indicates that good training programs increase employee motivation and job involvement (Akhtar, Khizer, Shama, &), we propose that professionally trained staff members in one working unit tend to serve other units well.

Compensation system. Since the pay level of hospitality firms is relatively low, the incentive for improvement is motivated extrinsically so that employees are urged to behave how the organization expects. The literature also indicates that well-designed compensation systems improve employee's job satisfaction and decrease staff turnover (Chang et al., 2013). That is why organizational reward is important in shaping hotel employees' service quality orientation (Chiang & Birtch, 2011). We assume that well-designed compensation systems encourage employees to be not only involved in their own work, but also to behave

supportively toward their colleagues. Based on above arguments, we propose as follows:

H1. (a) Process management system, (b) training system, and (c) compensation system correlate positively with employee's actual ISQ towards their colleagues.

5.1.2. The relationship between social systems and ISQ

Collaborative culture. Collaborative culture is a supportive culture that assists inter-functional management and reduces internal and interdepartmental conflict (Porcu, Barrio-García, Kitchen, & Tourky, 2020). It is flexibly applied within organizations so values can be shared, interdepartmental relationship can be sustained, and various departments focus on the common organizational objectives instead of separate interests (Beydilli & Kurt, 2020). While generally, a supportive organizational culture positively predicts that employees will behave collaboratively beyond the organization's expectations (Chiang & Hsieh, 2012), having a collaborative culture within international tourist hotels significantly influences ISQ. We thus propose that collaborative culture lead employees to be more responsive and trustworthy in supporting internal customers.

Interdepartmental communication. Interdepartmental communication is essential to cross-functional firms (Ahmed & Rafiq, 2003), such as hotels, to facilitate information sharing and synchronize different departments (Strese, Meuer, Flatten, & Brettel, 2016). For example, multinational companies that encourage departmental staff to communicate collectively will improve their company's performance (Gondal & Shahbaz, 2012). Thus, we argue that, all in all, strong communication between departments helps to build trust and respect among employees and foster high-quality internal service.

Servant leadership. Servant leaders are those who operate as servants rather than leaders (Greenleaf, 1977). Compared to transactional and paternalistic leaders, servant leadership is exemplified in hospitality research because practitioners accentuate providing strong service to subordinates and establishing long-term leader-follower relationships (Ling et al., 2016). The employees are thus inspired to learn and apply a leader's servant behaviors to 'serving others' in the workplace by interacting positively with colleagues. This leadership style, epitomized by the hospitality industry, positively affects the in-role behavior of service employees (Ling et al., 2016) and the extra-role behavior (Wu et al., 2013b) of external customers. Similarly, we expect servant leadership is convincing because it enables employees to cooperate better within a firm. Based on these preceding arguments, we propose as follows:

H2. (a) Interdepartmental communication, (b) collaborative culture, and (c) servant leadership correlate positively with employee's actual ISQ towards their colleagues.

5.1.3. The relationship between personal characteristics and ISQ

Role stress. Because hotel employees often bear heavy workloads, they struggle to provide ISQ. Role stress undermines employees' ability to support their colleagues (Latif & Ullah, 2016), and therefore diminishes ISQ (Frost & Kumar, 2001). Therefore, we propose high role stress is likely to undermine employees' internal service.

Empathetic personality. Empathy describes a person's ability to respond to others' thoughts, feelings, and experience (Wieseke, Geigenmuller, & Kraus, 2012). As essential to interpersonal competence and communication, being empathic within firms benefits others by inspiring collegial behavior that helps others (Frost & Kumar, 2001).

Because empathy is key to service quality and customer satisfaction (Wildier, Collier, & Barnes, 2014), we expect that empathetic employees produce better internal service because they care for the welfare of internal customers.

Collegial relations. Contemporary hotel employees are often challenged to co-exist with their colleagues (Goh & Lee, 2018). Collegial relations is thus important to co-workers because it underlies employee's well-being and perceptions of meaningful work (Chang et al., 2013). Bringing these relations closer not only develops greater awareness of each other's job, but also fosters trust and reciprocity (Stea, Pedersen, & Foss, 2017). Conversely, when collegial relations are absent, employees are more likely to compete and thus retard ISQ. Chinese workplaces often emphasize *guanxi*, a type of Confucian social networking ideal (Taormina & Gao, 2010) that provides the basis for good collegial relations, connectedness and reciprocity, whereby ISQ is promoted between cross-functional units and departments.

H3. Hotel employee's (a) role stress correlates negatively with employee's actual ISQ, while (b) empathetic personality, and (c) collegial relations correlate positively with employee's actual ISQ towards their colleagues.

5.1.4. The mediation effect of employee's internal service orientation and efficacy

From the conservation of resources theory perspective (Hobfoll, 1989, 2001), gaining resources can enhance employees' motivation and self-efficacy, while losing resources can drive employees into certain levels of stress. Importantly, self-determination theory (Ryan & Deci, 2000) tells us that motivation and ability stimulate behavior. Increasingly acknowledged is that these components consistently predict delivering excellent service to external customer. For example, service firms need their frontline employees to be both willing and able to deliver customer-oriented behavior (Pimpakorn & Patterson, 2010). Firms also need these employees to show initiative and be motivated to envisage employees' proactive service behaviors (Raub & Liao, 2012). Our qualitative study indicated that internal service providers being willing and able are two keys to linking determinants to ISQ.

Accordingly, we operationalized employee's willingness as *internal service orientation*, and their ability as *internal service efficacy* in study 2, by focusing on the internal service context. The first of these two constructs describes the internal service provider's tendency to meet their colleague's needs in organizations (Brown, Mowen, Donovan, & Licata, 2002). Similarly, the latter refers to employee's self-confidence in their skill and capacity to perform internal service that meets their colleagues' needs (Lee, 2014). This paper proposes that both internal service orientation and efficacy serve as parallel mediators in the hypothesized model. Testing the potential relationship between these two variables is beyond the scope of the paper since previous studies have indicated that service orientation and service efficacy might exert complex and dual causal relationship (e.g., Lee, 2014; Raub & Liao, 2012). The literature of service orientation and efficacy indicates that they associate closely with productivity and work performance (Ling et al., 2016; Wang, Tsai, & Tsai, 2014). By extending these two constructs from traditional external service to internal service, our study proposes that internal service orientation and efficacy are essential to motivating ISQ for internal customers. When employees are sufficiently motivated to assist their colleagues, and when they perceive that they can, the level of their ISQ is maintained or increased. Therefore:

H4. Employee's (a) internal service orientation and (b) internal service efficacy mediates the relationship between determinants and ISQ.

5.1.5. The three-way interactions of process management system, collaborative culture, and role stress

Based on study 1's findings, we propose a three-way interaction among management practice, social practice, and employees' personal characteristics. Because the scope of study 2 is insufficient to cover all possible interactive relationships mentioned so far, we select the most frequently raised by participants, that is, three prominent determinants that arose in study 1: process management system, collaborative culture and role stress, and examine their potential interaction effects. We argue that *process management system* and *collaborative culture* might weaken the negative impact of role stress on employee's internal service orientation and efficacy. Because different organizational determinants influence individual employees differently (Wong, Ma, Chan, Huang, & Zhao, 2019), we use conservation of resources theory (Hobfoll, 1989, 2001) to clarify. We argue that process management system and collaborative culture are valuable external resources that create a supportive environment by motivating and enabling employee to be better at meeting their firm's objectives. These determinants of ISQ represent the *hard* and *soft* operational capacity of hotel organizations and might jointly strengthen employees' psychological and physical resilience to heavy work with supportive resources. Conversely, when organizations lack such support, heavy role stress can cause serious physical and emotional exhaustion that influence employees' willingness and capacity to deliver quality internal service. Therefore:

H5. There will be a three-way interaction of process management system, collaborative culture, and role stress in predicting employee's internal service orientation and efficacy, such that the negative association between role stress and (a) internal service orientation, (b) internal service efficacy will be strongest when collaborative culture and process system are weak.

5.2. Methods

In study 2, we collected data using a joint questionnaire of employees and supervisors during May–July 2019. This involved 10 five-star hotels in two cities, Fuzhou and Xiamen, in China; they are the capital and sub-capital respectively of Fujian Province in south-east China. Both possess a flourishing tourism industry and market. All hotels were full-service hotels with the rooms numbering from 320 to 490. Hotels were contacted based on personal relationships with the hotel managers; their HR departments administered the questionnaire. All respondents voluntarily participated in the questionnaire after we assured them that it would be used exclusively for academic research. Respondents returned the completed questionnaires to us in sealed envelopes.

Of the 660 distributed, 506 were returned from employees and 367 from supervisors, yielding a final 332 employee-supervisor pairs of sample. Among these employee respondents, 58.1 percent were females, 65.6 percent were aged between 18 and 35, representing a somewhat young staffing sample. About 88 percent had worked for the hotel under three years, and 71.9 percent had a junior college or below education. Approximately 79 percent of respondents were from the front office, and 21 percent were from the back office, which parallels what occurs throughout hotel organizations.

We used established scales to ensure reliability and validity of our measurement. Specifically, ISQ was measured using seven items adopted from Boshoff and Mels (1995), while six items of customer orientation were adapted from Brown et al. (2002) to measure the internal service orientation after we changed the context to internal service. Similarly, we adopted six items from Lee's (2014) scale that measures internal service efficacy and eight items from Akroush et al. (2013) that capture

Table 3
Means, standard deviations, and intercorrelations among variables.

	M	SD	AVE	CR	1	2	3	4	5	6	7	8	9	10	11	12
1. Process management system	4.26	0.63	0.59	0.81	(0.80)											
2. Training system	4.22	0.60	0.51	0.80	0.59**	(0.79)										
3. Compensation system	4.14	0.59	0.64	0.85	0.58**	0.63**	(0.86)									
4. Collaborative culture	4.20	0.47	0.54	0.75	0.57**	0.54**	0.61**	(0.73)								
5. Interdepartmental communication	4.15	0.57	0.61	0.81	0.56**	0.58**	0.56**	0.45**	(0.81)							
6. Servant Leadership	4.37	0.58	0.52	0.88	0.54**	0.45**	0.49**	0.47**	0.53**	(0.88)						
7. Collegial relations	4.39	0.59	0.64	0.84	0.30**	0.31**	0.26**	0.26**	0.46**	0.31**	(0.82)					
8. Role stress	4.31	0.58	0.55	0.62	-0.31**	-0.22**	-0.21**	-0.19**	-0.32**	-0.24**	-0.24**	(0.71)				
9. Empathic concern	4.42	0.46	0.51	0.82	0.44**	0.27**	0.33**	0.31**	0.39**	0.38**	0.42**	-0.37**	(0.76)			
10. Internal service orientation	4.58	0.37	0.59	0.74	0.23**	0.28**	0.24**	0.27**	0.31**	0.24**	0.33**	-0.38**	0.26**	(0.70)		
11. Internal service efficacy	4.20	0.51	0.57	0.73	0.22**	0.26**	0.40**	0.41**	0.40**	0.31**	0.26**	-0.24**	0.33**	0.42**	(0.73)	
12. ISQ	5.55	0.89	0.61	0.91	0.19**	0.18**	0.26**	0.39**	0.26**	0.18**	0.27**	-0.19**	0.15*	0.28**	0.19**	(0.91)

Note: a. *p < 0.05, **p < 0.01. b. Figures in parentheses are Cronbach's alpha coefficients. c. AVE = average variance extracted, CR = composite reliability.

compensation system. Three items from Akroush et al. (2013) measured training systems, and two items about cross-functional training were added as our qualitative results indicate. Three items from Lee, Kim, Choi, and Lee (2009) measured process quality; eight from López, Peón, and Ordás (2004) measured collaborative culture; seven from McCormack (2001) measured interdepartmental connectedness and; seven items following Reinke (2004) measured servant leadership. Based on Jiang and Hu (2016), four items assessed collegial relations, with role stress being measured using the scale from Mansour and Tremblay (2016) of four items. Six items from Davis (1980) measured empathetic concern. We controlled for employee demographics (i.e., gender, age, firm tenure, education, and department) to exclude their potential influences on ISQ (Chen, 2013).

Alternatively, ISQ was measured using a seven-point Likert scale to capture its maximum variance (evaluated by the supervisors), while all other variables were measured with a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) as evaluated by the employees. We used the back-translation method (Brislin, 1970) to ensure translation quality. During the pilot test stage, the questionnaire was sent to five experts to guarantee the content validity of its scales, consisting of two university professors of hospitality management and three senior hotel managers. Based on their feedback, some words of the items in the original questionnaire were modified to suit the hospitality before the final questionnaire was formed.

5.3. Findings

5.3.1. Test of common method variance (CMV)

To mitigate common method bias, we use data from different sources (i.e., employees and management). In addition, we follow Podsakoff, Mackenzie, Lee, and Podsakoff (2003) by using established scales, ensuring anonymity, and using different scale anchors for dependent and independent variables. We diagnosed whether our measures were subject to CMV by controlling for the effects of an unmeasured latent methods factor (Podsakoff et al., 2003). Specifically, a confirmatory factor analyses (CFAs)-based comparison between measurement models with and without an unmeasured common latent factor revealed no significant difference (CFI = 0.01, RMSEA = 0.00). Thus, CMV is unlikely to be a serious problem in this study.

5.3.2. Descriptive statistics

Before analyzing the data, we evaluated for skewness and kurtosis to guarantee that the data did not violate the normality assumption (i.e., skewness from -1.7 to 1.7; and kurtosis from -1.8 to 1.8). Table 3 indicates the means, standard deviations, and correlations from the questionnaire data. As it shows, all nine determinants relate significantly to ISQ (p < 0.01), thus providing initial evidence of our qualitative study results. As expected, except for role stress, the other eight factors were positively related to ISQ. The average variance extracted (AVE) of all items were greater than the thresholds of 0.5. Except for role

Table 4
Goodness of indicators for the CFA and SEM models.

Models	χ^2	df	NCI (χ^2/df)	GFI	CFI	RMR	RMSEA
Model 1 (measurement model)	363.67	154	2.36	0.91	0.95	0.01	0.06
Model 2 (structural model without mediation effect)	323.11	125	2.59	0.91	0.95	0.02	0.07
Model 3 (structural model with full mediation)	482.03	195	2.47	0.89	0.94	0.02	0.07
Model 4 (structural model)	486.47	202	2.41	0.89	0.94	0.02	0.07

stress, the composite reliability (CR) values of all the other eleven variables were greater than the recommended value of 0.7 respectively, thus supporting their convergent validity (Hair, Black, Babin, Anderson, & Tatham, 2006). The CR value of role stress is 0.62, slightly lower than the generally accepted value of 0.7. One reason that may cause the low convergent validity of *role stress* is that one reverse-scored item was used in its measurement. While the way of using reverse-scored items can reduce response set bias, it can also threaten the psychometric properties of a measure (Hinkin, 1998). In addition, the AVE values of each variable exceeded the squared correlation coefficients of other variables, thus demonstrating discriminant validity.

5.3.3. Measurement model and hypothesis testing

AMOS 25.0 software was used in the CFAs and structural equation modeling (SEM) analysis. Owing to the multiple variables (i.e., 12 variables using 71 items) investigated in our questionnaire, a partial disaggregation approach was used to reduce random error and retain the multiple measure approach common to structural modeling (Bagozzi & Heatherton, 1994). Similar to previous studies using this approach (e.g., Wu et al., 2013a), items of a construct were selected randomly to create two indicators for each construct (Bagozzi & Heatherton, 1994). Following this approach, our sample size was appropriate to apply CFAs and SEM analysis (i.e., a heuristic of 10 observations per estimated parameter) (Kline, 2011).

The hypothesized model was tested using a two-stage approach (Anderson & Gerbing, 1988). All measurement models were undertaken using bootstrap procedures, using 1000 bootstraps when re-running. In the first stage, CFAs were conducted to examine the factor structures of the measurement model (Model 1). It has a good fit with the data: NCI (χ^2/df) = 2.36, goodness-of-fit index (GFI) = 0.91, comparative fit index (CFI) = 0.95, and residual mean square error of approximation (RMSEA) = 0.06 and RMR = 0.01.

In the second stage, we used SEM to test the hypothesized relationships using a bootstrap method. In Model 2, all exogenous variables

were assumed to directly affect ISQ. As shown in Table 4, the model demonstrated good fit. Except for compensation system ($\beta = 0.05$, $T = 0.67$, n. s.), all other antecedent factors significantly affected the dependent variable, ISQ, thus supporting H1a, H1b, H2 and H3. Specifically, training system ($\beta = 0.26$, $T = 1.99$, $p < 0.05$), process management system ($\beta = 0.39$, $T = 2.41$, $p < 0.05$), collaborative culture ($\beta = 0.25$, $T = 2.51$, $p < 0.05$) and interdepartmental communication ($\beta = 0.16$, $T = 1.98$, $p < 0.05$) significantly explained ISQ. Servant leadership ($\beta = 0.23$, $T = 2.05$, $p < 0.05$), colleague relation ($\beta = 0.35$, $T = 2.32$, $p < 0.05$), role stress ($\beta = -0.17$, $T = -2.01$, $p < 0.05$) and empathic concern ($\beta = 0.18$, $T = 2.07$, $p < 0.05$) also significantly explained ISQ. The explained R^2 of outcome variable (i.e. ISQ) is 0.17. The results of the bias-corrected bootstrapped, parameter estimates for the full structural model were all significant at 95% confidence intervals.

In Model 3, we assumed that all determinants influence ISQ through two mediators, namely, internal service orientation and internal service efficacy. Although this model fit the data well: NCI (χ^2/df) = 2.47, GFI = 0.89, CFI = 0.94, RMR = 0.02, RMSEA = 0.07, eight of the 18 paths tested in the model were not significant. With these paths removed, Model 4 fit with the data best and more parsimoniously: NCI (χ^2/df) = 2.41, GFI = 0.89, CFI = 0.94, RMR = 0.02, RMSEA = 0.07. Therefore, Model 4 was accepted (Fig. 2).

Specifically, training system ($\beta = 0.31$, $p < 0.01$), servant leadership ($\beta = 0.23$, $p < 0.05$), collegial relations ($\beta = 0.20$, $p < 0.01$), and role stress ($\beta = -0.44$, $p < 0.01$) significantly explained internal service orientation, whereas interdepartmental communication ($\beta = 0.30$, $p < 0.001$) and empathic concern ($\beta = 0.31$, $p < 0.001$) significantly predicted ability. Process quality and collaborative culture significantly explained both internal service orientation ($\beta = 0.31$, $p < 0.01$; $\beta = 0.34$, $p < 0.01$) and internal service efficacy ($\beta = 0.52$, $p < 0.001$; $\beta = 0.65$, $p < 0.001$). In addition, internal service orientation ($\beta = 0.26$, $p < 0.001$) and internal service efficacy ($\beta = 0.15$, $p < 0.05$) significantly affect ISQ (Table 5).

Based on the calculated total effects, the relative importance of each

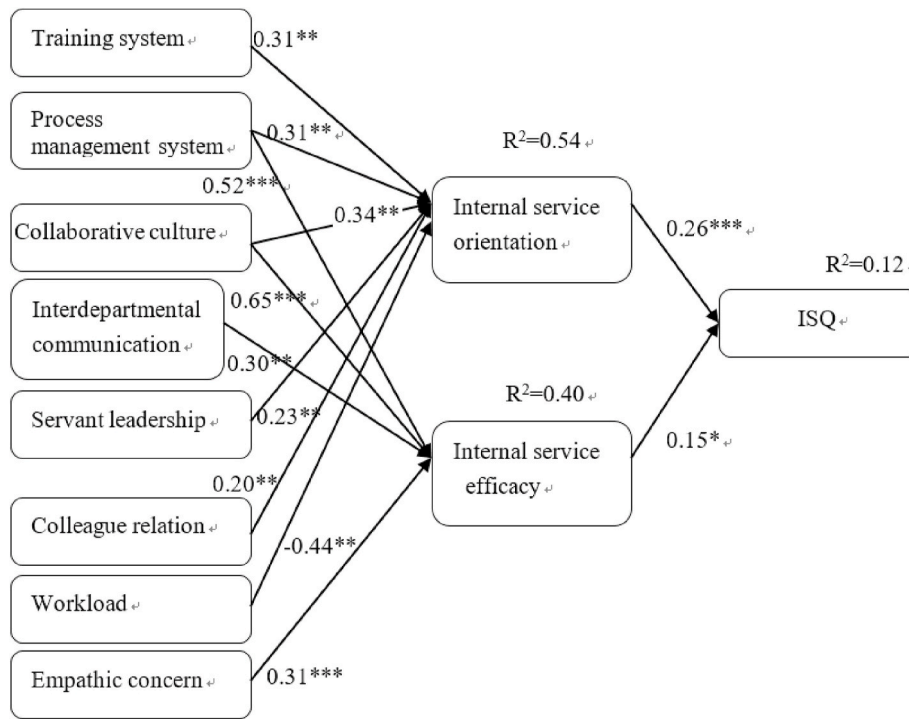


Fig. 2. The SEM analysis results of proposed model (Model 4).

Note: a.* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$. b. The non-significant antecedent variable (i.e., the compensation system) and all non-significant paths were removed from the proposed model.

Table 5
Results of SEM analysis.

Relations	β	T	p	Relations	β	T	p
Training system →internal service orientation	0.31	2.40	0.05	Process quality →internal service efficacy	0.52	4.97	0.00
Process management system →internal service orientation	0.31	4.53	0.00	Collaborative culture →internal service efficacy	0.65	5.66	0.00
Collaborative culture →internal service orientation	0.34	2.97	0.01	Interdepartmental communication →internal service efficacy	0.30	3.06	0.01
Servant leadership →internal service orientation	0.23	3.59	0.04	Empathic concern →internal service efficacy	0.31	3.56	0.00
Collegial relation →internal service orientation	0.20	3.12	0.04	Internal service orientation →internal service quality	0.26	3.09	0.00
Roll stress →internal service orientation	-0.44	-6.58	0.00	Internal service efficacy →internal service quality	0.15	2.04	0.04

Table 6
Standardized direct, indirect and total effects of predictor variables on ISQ.

	Compensation system	Training system	Process management system	Collaborative culture	Interdepartmental communication	Servant leadership	Collegial relations	Role stress	Empathic concern
Direct effect	-	-	-	-	-	-	-	-	-
Indirect effect	0.03	0.08	0.18	0.16	0.04	0.03	0.06	-0.04	0.05
Total effect	0.03	0.08	0.18	0.16	0.04	0.03	0.06	-0.04	0.05
lower bound 95% CI	-0.21	0.09	0.06	0.08	0.02	0.01	0.00	-0.23	0.03
upper bound 95% CI	0.02	0.22	0.28	0.32	0.13	0.11	0.15	-0.02	0.13

predictor for ISQ is shown in Table 6. Among all the determinants, the total (direct plus indirect) effects of process management system and collaborative culture, were larger than other determinants. The bootstrap estimate of the indirect effect and its 95 percent confidence interval (CI) based on 1000 replications show that, except for the mediation relationship predicated by compensation system, other mediation effects are significant (Preacher & Hayes, 2008). Therefore, H4a and H4b were partially supported since some determinants influence ISQ because of internal service orientation, whereas others do so because of internal service efficacy .

Hypothesis 5 proposed a three-way interaction of collaborative culture, process management system and role stress in their predicting effect. We conducted hierarchical regression analyses to test the interaction effect with the standardized predictors in the following four steps: (1) control variables (Model 1); (2) role stress, collaborative culture, and process management system (Model 2); (3) the two-way interactions (Model 3); and finally, (4) the three-way interaction (Model 4). As Table 7 indicates, the results of regression analyses indicated that the three-way interaction term explains additional significant variance in internal service orientation and efficacy, thus supporting H5a and

H5b. To further clarify this interaction, we carried out a simple slope analysis and plotted the interaction effect (Fig. 3). We redefined the independent and the moderator variables with one standard deviation above and below the mean (Cohen, Cohen, West, & Aiken, 2003). We found that the relationship between role stress and internal service orientation was significantly negative under the following conditions: when collaborative culture and process management system were weak (simple slope = -0.55, p = 0.04), and non-significantly different from zero when collaborative culture was low and process management system was high (simple slope = 0.17, p = 0.46); when collaborative culture was high and process management system was low (simple slope = -0.25, p = 0.29); and when both moderators were high (simple slope = -0.27, p = 0.28). Similarly, the relationship between role stress and internal service efficacy was significantly negative under these premises: when both moderators were weak (simple slope = -0.47, p = 0.05), and non-significantly different from zero when collaborative culture was low and process management system was high (simple slope = 0.32, p = 0.09); when collaborative culture was high and process management system was low (simple slope = 0.39, p = 0.07); and when both moderators were high (simple slope = -0.27, p = 0.21). These findings

Table 7
Results of regression analysis testing the three-way interaction effect.

	Internal service orientation				Internal service efficacy			
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Sex	0.14*	0.17**	0.16**	0.16**	-0.13*	-0.12*	-0.11*	-0.13*
Education	0.09	0.14*	0.13*	0.10	0.14*	0.19**	0.17**	0.12*
Age	-0.04	-0.05	-0.07	-0.08	0.23**	0.22**	0.21**	0.19**
Tenure	0.03	0.03	0.06	0.06	-0.12	-0.14*	-0.14*	-0.13*
Department	0.01	-0.04	-0.05	-0.05	0.10	0.07	0.07	0.07
Role stress		-0.37***	-0.36***	-0.28***		-0.13*	-0.14*	0.04
Collaborative culture		0.17**	0.19**	0.15**		0.42***	0.45***	0.38***
Process system		0.05	0.02	0.02		0.10	0.11	0.09
Role stress × Collaborative culture			-0.01	-0.02			-0.04	-0.06
Role stress × Process system			-0.18**	-0.17**			-0.08	-0.06
Collaborative culture × Process system			0.08	0.11			0.12*	0.18***
Role stress × Collaborative culture × Process system				-0.16*				-0.34***
F-value	1.56	9.98***	8.51***	8.33	3.94**	10.28***	8.17***	10.19***
R ²	0.03	0.23	0.26	0.28	0.07	0.24	0.26	0.32
ΔR ²	0.03	0.20	0.03	0.02	0.07	0.17	0.02	0.06

Note: *p < 0.05, **p < 0.01, ***p < 0.001.

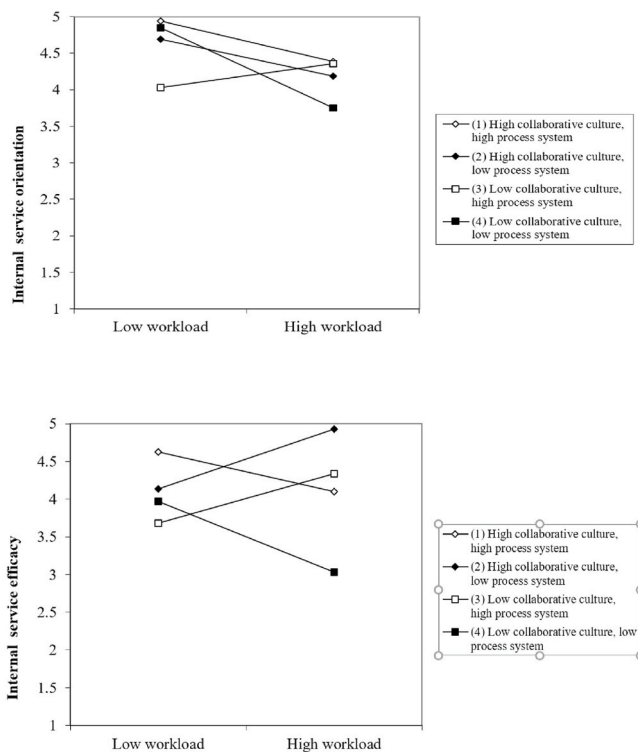


Fig. 3. Three-way interaction between collaborative culture, process management system and role stress on internal service orientation/efficacy.

further support H5a and H5b.

5.4. Discussion

Study 2 validated the model proposed in study 1. Except *compensation system*, the other eight significantly determine ISQ (Model 2). This may be explained by compensation system being a typical extrinsic motivation (Ryan & Deci, 2000) with internal service relying more on employees' intrinsic motivation. Findings relating to several determinants of ISQ (i.e., *training system*, *organizational culture*, *leadership* and *role stress*), are consistent with the literature (Akroush et al., 2013; Chen, 2013). More importantly, identifying some new determinants in both the organizational and individual domains, (i.e., *process management system*, *interdepartmental communication*, *empathetic personality*, and *collegial relations*), has extended the knowledge in ISQ.

Results suggest that these determinants do not influence employee ISQ directly, but through a dual indirect link based on internal service orientation and internal service efficacy (see Model 4). The results are in line with studies in external service quality (e.g., Pimpakorn & Patterson, 2010) that identify the primary roles of both employees' willingness and abilities. Furthermore, our determinants not only vary in their magnitude but also in how they determine ISQ in that more determine employee ISQ through being linked by their internal service orientation. This orientation more strongly impacts ISQ than internal service efficacy. The result resembles Raub and Liao's (2012) finding that employees' "willing to" motivation is more important than "able to" motivation to predict their proactive customer service performance. Because our results imply the value of hotel employees' being oriented to efficacy in forming ISQ, our using them extends the research into moving from external service to the internal service.

Furthermore, we identify a three-way interaction effect by which collaborative culture and process management system mitigate the negative impact of role stress on employee's internal service orientation and efficacy. Because our findings suggest that distinct factors might interact to influence the delivery of ISQ, incorporating these factors into

ISQ more systematically is worthwhile.

6. Findings and implications

6.1. Implications for theory and research

This study contributes to the literature on ISQ in the following ways. First, we identify a comprehensive but parsimonious set of determinants to understand ISQ. It answers three research calls: by Akroush et al. (2013) and Chen (2013) to explore the barriers and motivation of ISQ in service firms, and by Yao et al. (2019) to investigate the demands of internal customers. While some research focuses on some determinants of ISQ, such as organizational culture (Chen, 2013) and internal marketing (Frost & Kumar, 2001), most are theoretical or depend largely on quantitative designs for hypothesis testing.

This study discovered that ISQ is unlikely to flourish if implemented without combining formal management and informal social systems, and without considering the human relations that characterize internal service encounters. This study particularly reveals a new set of determinants, that we name, process management system, interdepartmental communication, empathetic personality, and collegial relationship, which the ISQ literature does not cover. Compared with external customer service, which highlights work regulations and quality standards, internal service is often undertaken within situations where the organizational regulations are unclear. Our study finds that the dual organizational control systems (i.e., management systems and social systems) are crucial in determining internal service management and representing the *hard* and *soft* operational capacity of hotel organizations. While management systems facilitate ISQ in a regulated way, the effect of informal means of management control (i.e. social systems) cannot be ignored, since it might effectively promote socialization by creating congruence between individual and organizational values (Goebel & Weißenberger, 2017). Our findings shed new light on forming ISQ by identifying that it needs to be broadened from a single, separate factor perspective.

This study also contributes to the people-management approach in the hotel industry (Brien & Smallman, 2011) that values 'systems' supporting 'people' (internal customers), instead of focusing mostly on maximizing efficiency. Our results accord with the literature that finds the industry's rather young workforce expects better leader direction, harmonious organizational environment marked by collegial relations, and a diversified training system (Goh & Lee, 2018) in their workplace.

Second, this study broadens the knowledge of ISQ by adding the relative strengths of different determinants needed to foster it. We found that collaborative culture and process management more strongly determine ISQ than other organizational factors, and role stress is a significant people-based factor detrimental to ISQ. Compared with the compensation system, which focuses more on extrinsic motivation, our study highlights the importance of involving other organizational determinants that will improve employee's intrinsic motivation to foster ISQ.

Third, this study reveals the mediation effect of employees' internal service orientation and efficacy in the ISQ process in hotel firms (see Fig. 2). Both qualitative and quantitative study showed that the internal service provider's motivation and ability are two necessary determinants in fostering ISQ. The results justify the ISQ gap model (Frost & Kumar, 2001) by indicating that, when employees are unwilling or unable to perform an internal service sufficiently, the gap lies in their internal service delivery. We expand the two constructs, service orientation and self-efficacy derived from the external service literature (e.g., Boshoff & Mels, 1995; Ling et al., 2016). Furthermore, our results stress the success of internal service orientation over internal service efficacy in hospitality firms. Our results are also consistent with the nature of the tourism and hospitality industry, in which, while employees' professional expertise are necessary, their service orientation is usually prioritized to deliver excellent service.

Fourth, this study also reveals a three-way interaction among the three types of determinants that anticipate employee's internal service orientation and the efficacy that follows. These comprise the influence of a process management system and a collaborative culture that may relieve the toll of heavy role stress on hotel employee's internal service orientation and efficacy. Our findings enrich the understanding of resource conservation theory (Hobfoll, 1989, 2001) by showing an interplay among different types of resources (e.g., external and internal resources). While this paper's scope was too narrow to examine the interaction effects among all potential determinants, our results show that both management and social systems (i.e., external resources) modify the effect of employees' personal characteristics (i.e., internal resources). This paper extends the literature by exploring a novel interaction relationship that highlights the organizational (Cohen, Cohen, West, & Aiken, 2003) conditions involved, that is, formal and informal control systems.

Lastly, consistent and convergent evidence from mixed-methods research contributes to the generalizability of the findings, thus offering a more rigorous and elaborate framework to contribute theoretically (Whetten, 1989). Frontline and back office staff were investigated since both constitute internal customers; however, prior studies often limit their research to the attitudes and behaviors of frontline staff (e.g., Prentice, 2018). In addition, to minimize common method issues, both the employees and their supervisors were surveyed to avoid the single-source data.

6.2. Managerial implications

Improving ISQ is important to hotel management since one quarter of interviewees thought that their five-star hotels fail to provide sufficient internal service delivery. To address this problem, this study provides three recommendations based on its findings, particularly focusing on the determinants of ISQ that are neglected in the literature. First, leaders need to monitor and advance management systems, particularly the *process management system* to improve the ISQ, which has been recognized as a strategic tool to enhance operational efficiency and business performance (Zhang et al., 2018). For example, hotels can redesign service-oriented process to align processes with hotels' strategic goals, adapt process measurement systems to make them stronger and more responsive to changes and, most importantly, reinvent "human-centered work processes" that not only balances structure and flexibility, but that also allows collaboration across internal organizational boundaries (Harrison-Broninski, 2015). These commitments to improving process management, with better compensation (e.g., incorporating ISQ in evaluating and rewarding employees) and training systems, can motivate and enable employees to support their colleagues, and ultimately achieve their organization's objective to improve international service.

Second, hotel managers need to stimulate their environments by fostering *social systems* within which an increased collective awareness of high ISQ can be nurtured. Managers may build a *collaborative culture* by developing the ways and means of employees sharing and understanding that their contributions are valued and supported (Latif & Ullah, 2016). In such a collaborative culture, employees would share collegiality with strong intrinsic motivations and the interdependence of various departments, and enjoy a spirit of cooperation. Our results also indicate that departmental *servant leadership* in the organization is key to intra-organizational service. Therefore, leaders should exemplify internal service, rather than follow top-down management (Ling et al., 2016). *Interdepartmental communication* needs to be improved since vague or unclear information prevents internal service providers from understanding the true demands and expectations of internal customers. As several interviewees indicated, important information about changes in products, policies, and procedures needs to be transmitted on time across different departments.

Third, the *personal characteristics* that emerged in our study also

suggest several ways for management to improve ISQ. Managers can recruit employees who are empathetic and amenable, and thus responsible for providing high-quality internal service to colleagues. After-work and outreach activities are needed to help employees become collegial with interdepartmental colleagues, so they can better develop relationships befitting their work (Tse & Dasborough, 2008). *Collegial relations* play a significant role in building and maintaining a human-centered workplace in the Chinese hotels; however, they have been neglected in the previous ISQ literature. In addition, as several interviewees mentioned, cross-training is essential to extending employees' expertise and their understanding of interdepartmental colleagues' jobs. Training should cover more than traditional job-related skills by also including programs on emotional management or interactive communication, which are necessary for both internal customers and providers. Furthermore, jobs need to be well designed and realistically assigned so that they ensure hotel employees can take responsibility for, and be aware of, job functions, and thus *not suffer role stress*.

In sum, we suggest hotel managers consider comprehensively improving ISQ. Varying management practices should be tailored to motivate internal service providers' commitment and improve their expertise.

7. Conclusions, limitations and future research

This research has focused exclusively on single or separate factors to explain ISQ. To do so, we used a mixed-method approach to understand the complex and dynamic factors and how they influence internal service delivery. Our study identified three domain categories consisting of nine determinants: except for compensation system, another eight determinants play vital roles in determine ISQ. We illustrate the salience of internal service orientation and efficacy as intervening factors. The determinants not only vary in their magnitude but also how they influence ISQ. Our findings also imply that formal management practices and informal social system are the organizational conditions for moderating the effect of personal characteristics regarding internal service.

This study has several limitations that need to be addressed. First, our study investigated employees from 16 luxurious hotels in two cities of China, mainly representing the nation's predominantly young workforce in that industry. This study focuses on large-scale, high-star hotels to increase the internal validity of research. Further studies are encouraged to collect data from various types of hotels in other countries and cultures to test the generalizability of our findings since the literature suggests that the collaborative orientation towards colleagues of Western and Eastern employees might differ (Chen, Xie, & Chang, 2011). Second, while focus group research might collect a greater diversity of opinion than individual interview, it might also allow "minority views [to] dominate" (Williamson, 2018, p. 395). Future studies are encouraged to use a combination of data collection ways so that the research topic can be fully understood. Third, our quantitative study was based on a cross-sectional design, which could be further validated by longitudinal data or an experimental design in further studies. Fourth, this study explores only the interaction among three representative determinants; future research is needed to understand the boundary of the determinants of ISQ more deeply. Lastly, following most research in this subject (e.g., Chen, 2013), this study measures organizational-level factors by employees' perception. Future studies are encouraged to use multilevel analysis to examine the effects of organizational factors on ISQ.

Despite these limitations, this study provides an important first step to understand the determinants of ISQ more comprehensively. Our approach provides us with opportunities to build and develop theory because it provides new theoretical grounds for studying how ISQ develops. This study identifies the determinants of ISQ, and discovers the mechanism of how these factors merge to determine ISQ. Finally, our study supplies hotels with targeted measures to improve internal service

and ultimately maintain competitive advantage.

Author contribution

Xiaoyi Wu: is responsible for research design, data collection and analysis, and paper writing. Jie Wang: is responsible for the idea generation, paper writing, submission and revision. Qian Ling: participated in data analysis, and paper discussion.

Declaration of competing interest

None.

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Appendix A

Group interview protocols:

1. In your opinion, what does 'internal service' mean in hotel firms?
2. Do you act as an internal customer as well as internal service provider in your firm? And why?
3. Is internal service crucial in hotel firms, and why?
4. Please exemplify how your cross-department or unit colleagues support you. It might be a favorable or unfavorable example. Please explain it in detail about when, where, and how it happened?
5. Please exemplify how you support your cross-department or unit colleagues. It might be a favorable or unfavorable example. Please explain it in detail about when, where, and how it happened?
6. What kind or standard of internal service do you expect from your cross-department or unit colleagues?
7. In your opinion, what are the main factors that facilitate or inhibit internal service in your hotel?
8. Please evaluate the level of internal service quality in your hotel.

Appendix B. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.tourman.2021.104329>.

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