The Effect of Service Improvisation Competence on Hotel Performance

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Purpose

The development of a Service Improvisation Competence (Serv-IC)—operationally defined as "the systemic ability of a service firm's employees to deviate from established service delivery processes and routines to respond in a timely manner to unforeseen events using available resources" (Blinded, 2019, p. 1329)—has been proposed as an effective way to accommodate customer variability while increasing the quality of the service experience. However, empirical evidence of its impact on service performance is scant. This paper tests the effect of Serv-IC on performance in the hospitality industry.

Design/methodology/approach

This paper develops a conceptual typology of service delivery systems (hereafter service typology is used interchangeably) in the hotel industry based on the experiential content of the service and the amount of standardization of service delivery routines. Then, using a survey of hotel managers, the effect of Serv-IC on hotel performance is estimated within each service group in the typology.

Findings

Serv-IC is associated with increased occupancy in high-process-standardization and high-experience hotel operations but does not have a significant relationship with the average price per room. The results suggest that that managers could invest in Serv-IC to increase loyalty and positive word of mouth, but not to increase prices.

Originality/value

This paper provides evidence of the effectiveness of developing a Service Improvisation Competence while also offering boundary conditions to its applicability. The proposed service typology disentangles the design of service processes from their execution, thereby shedding new light on the complex relationships among service design, employee behaviors, and business outcomes.

Keywords: Service design, improvisation, customer heterogeneity, service typology, service performance, front-line employee behavior, empowerment, routines, service operations strategy

1 Introduction

This paper develops and tests boundary conditions for the effect on performance of the ability of employees to improvise in the face of unexpected events, in the context of the hotel industry. Face-to-face service encounters in many contexts such as hotels, restaurants, retail, and healthcare are increasingly characterized by the expectation that service providers adjust to unique customer needs and requests in real-time (Beatty et al., 2016). In recognition of such customer expectations, for example, Ritz-Carlton abandoned its highly routinized but equally rigid "20 rules" in favor of "12 guidelines" that have to be constantly interpreted by the employees (Sanders, 2006). Earlier, customer encounters with Ritz-Carlton employees were highly scripted. For example, they were required to only use specific words or phrases when greeting customers (e.g., "Good Morning" but not "Hi" or "Hello"). Furthermore, they were asked to follow very strict procedures during each interaction with the customer. For instance, when customers asked for directions, the employee was to escort them to their destination.

While such rigid rules may have worked for Ritz-Carlton in the past, the changing customer needs and demographics required the company to relax its scripted service in favor of more general rules that provide the employees the authority to improvise as the situation demanded. Such flexibility is becoming more common as service customers increasingly look for personalized experiences over standardized services. The notions presented above lead to the following questions: (1) What are the conditions under which this type of improvisation leads to better performance? and (2) What dimensions of performance are affected by improvisational competencies?

To address these questions, this paper draws from organizational behavior and strategy literatures that discuss the role of employee improvisation in a variety of organizational settings. Blinded (2019) argued that some service companies develop a

specific Service Improvisation Competence (Serv-IC), defined as "the systemic ability of a service firm's employees to deviate from established service delivery processes and routines to respond in a timely manner to unforeseen events using available resources" (p.1329). Extant research indicates that one or more elements of the Serv-IC construct are associated with higher customer satisfaction (John *et al.*, 2006; Daly *et al.*, 2009; Cunha *et al.*, 2009; Leybourne, 2009; Blinded, 2019). This paper adopts a contingency theory perspective to establish boundary conditions to the effectiveness of Serv-IC. Using the hotel sector as context, it explores the relationship between improvisational competencies and performance depending on the service bundle (Roth and Menor 2003b). To this end, building upon prior service literature, a conceptual typology of service delivery systems is introduced (Figure 1). This conceptual typology is based on two salient aspects of high contact services (Chase 1978). Namely (1) the relative degree of process standardization and (2) the degree of experiential content in the service offering.

It is argued that improvisation is more likely to play a strategic role in the design of service delivery systems where customer contact is high and customer experience is prioritized. In these "high touch" service systems, customers participate as co-creators in the production process, requiring a higher degree of adaptability in the service delivery system (Schmenner, 1986; Prahalad and Ramaswamy, 2013; Karmarkar and Karmarkar, 2014; Mustak *et al.*, 2016).

[Figure 1 about here]

The vertical axis of Figure 1 builds on earlier conceptualizations of service experience proposed by Pine and Gilmore (1999), Stuart and Tax (2004), Pullman and Gross (2004), Voss *et al.* (2008), and Zomerdijk and Voss (2011). It displays the degree to which the service is explicitly designed to evoke an emotional response in the

customer (Experiential Content of Service). The horizontal axis displays the degree of Process Standardization of the service (often referred to as "scripting"), defined as the rigidity and complexity of service delivery processes (Schmenner, 1986; Tansik and Smith, 1991; Victorino *et al.*, 2012; Victorino et al., 2013). The research presented in this paper sheds light on important aspects of process design and implementation in hotel services by testing the effects of Serv-IC within the generic service delivery systems types in Figure 1, employing a sample of hotels. It provides empirical evidence that the effect of systemic improvisation on hotel performance outcomes differs across service types and that this difference goes beyond the classic dichotomy between highly standardized and highly personalized services. Serv-IC has a positive effect on service outcomes in hotels that combine a comparatively higher degree of experiential content with high levels of process standardization. Counter to conventional wisdom, which equates increased process standardization with increased efficiency and productivity (Schmenner, 1986, 2004; Frei, 2006), this research suggests that the relationship between process design choices and service outcomes is not straightforward. A relatively high degree of improvisation competence can not only coexist with process standardization but improvisation in a highly standardized context can result in better service outcomes.

This paper contributes to service design literature and practice in several ways. First, it advances a service typology (Figure 1) built on service operations strategy choices (service concept and process design), rather than on their outcomes, thus beginning, in part, to disentangle the relationship between design choices, actual system behavior, and outcomes. Second, using a survey of hotel managers, the effect of developing a Service Improvisation Competence on hotel business outcomes is empirically tested, highlighting the important role of operations in choreographing

service experiences (Voss *et al.*, 2008; Zomerdijk and Voss, 2011). Finally, it contributes to a broader stream of research on organizational improvisation by adding to the sparse empirical literature that explores its effects on organizational outcomes and by providing a useful classification of the contingencies that influence its appropriateness as an organizational practice.

2 Theoretical Background

2.1 A Typology of Service Delivery Systems

This section develops a general typology of service delivery systems based on established principles of service delivery systems design. While the focus of this paper is on the hospitality industry, the typology reflects characteristics that are common to all high-contact service settings. Therefore, this typology serves two goals: first, it establishes the theoretical foundation for the empirical analysis of the hospitality industry that follows; second, it develops a general framework that could be used in future research to test the findings of this paper in other service contexts.

The design of services, especially high-contact services, has to accomplish a difficult balance between process standardization and personalization of the service offering. On the one hand, standardization, leading to consistency and predictability, is pivotal in matching customers' expectations. On the other hand, the server's ability to adapt to individual customers plays a fundamental role in eliciting feelings of empathy; it creates a personal connection that can lead to increased perceptions of quality, potentially resulting in repeat business and referrals. Service operations strategy plays an important part in achieving a balance between consistency and adaptability by specifying the intended behaviors of individual employees according to various work

process designs (Chase, 1978; Chase and Tansik, 1983; Heskett *et al.*, 1990; Menor *et al.*, 2001).

Behavioral guidelines for high-contact employees—often referred to as service *scripts* (Tansik and Smith, 1991)—can be characterized by their level of detail, including the number of sub-processes (script complexity), and the latitude allowed to the performer in deviating or reinterpreting the procedure (script intensity or divergence, Tansik and Smith, 2000). These guidelines play a pivotal role in shaping the interactions between employees and customers, the "moments of truth" that ultimately determine service success (Normann, 2001; Carlzon 1987). Conventional wisdom in service operations has long contended that when work is conducted in a standardized, factory-like manner (e.g., McDonald's) higher levels of efficiency will be achieved, thereby driving down operating costs (Levitt, 1976; Chase, 1978; Chase and Tansik, 1983; Stewart and Chase, 1999; Cook *et al.*, 2002). About two decades ago, a new line emerged in the service literature that stressed the importance of customer "experiences" in creating customer value and satisfaction (Pine and Gilmore, 1999). Voss *et al.* (2008) explicitly expanded the service concept (e.g., the bundle of services customers purchase) to include the provision of emotional connections with customers in face-to-face services. In this framework, genuine service experiences convey to customers feelings of caring and authenticity or, in other words, a spirit of service (Pullman and Gross, 2004; Gilmore and Pine, 2007; Voss *et al.*, 2008). To the detriment of customer satisfaction, Victorino *et al.* (2012) and Victorino *et al.* (2013) offered empirical evidence that the adoption of rigid scripts in the employee-customer interactions may hamper such feelings. In this vein, researchers have stressed the importance of service personalization conveyed through the employees' initiative and judgment, rather than through strictly predefined scripts (Hartline and Ferrell, 1996).

The emotional element in service delivery is becoming increasingly important for the retention of customers through the creation of meaningful experiences (Voss *et al.*, 2008; Karmarkar and Karmarkar, 2014).

Most of the existing literature (see Frei, 2006 for a notable exception) frames the choice between standardization and experience as a trade-off. In contrast, the conceptual typology of service offerings described in Figure 1 extends the traditional dichotomy between personalized and standardized services and provides a more nuanced systematization of service experiences. The Process Standardization (PS) variable on the horizontal axis is formally defined as the complexity and formalization of service delivery processes (Tansik and Smith, 2000). The Experiential Content of the Service (EXP) on the vertical axis is defined as the degree to which the service system is designed to elicit an emotional response in the customer (Pullman and Gross, 2004). Thus, this study identifies four service types that are strongly characterized by diverse combinations of high and low values of EXP and PS. This typology is analogous to that proposed by Frei (2006) in classifying the different approaches to the management of customer-introduced uncertainty; however, this typology differs from Frei as it focuses on the two salient design choice inputs (i.e., relative degree of PS and EXP) rather than on the intended outcomes of such choices (i.e., cost and quality). The conceptual typology is discussed mainly in the context of the hotel industry, which is the focus of this study. The hotel industry has several characteristics that make it ideal to examine the effects of service delivery system design choices and service improvisation at the level of analysis of a single property. First, hotels are characterized by high levels of customer contact, which would create many opportunities for employees to improvise. Moreover, the industry has diverse arrangements in terms of management, ownership, and brands, making local decisions at each distinct hotel

property the key to the realized delivered service (Roth and Menor 2003a; Roth and van der Velde 1991). Additionally, the size of the hospitality industry (3.7% of GDP in the EU in 2010, Hospitality Europe 2019) would make findings useful even if they were not generalizable.

The upper left quadrant in Figure 1 covers service systems that are termed "Personalized Experience" types; they are personalized through the absence of a rigid set of customer contact rules. They are characterized by providers that can deliver a wide variety of services using a skilled workplace. Personalized Experience types are likely to adopt what Frei (2006) calls a "classic accommodation strategy" to deal with customer-introduced uncertainty. Upscale boutique hotels, such as Kimpton Hotels, are good examples of personalized services, in that they specialize on satisfying the unique needs of the guests. Some boutique hotels even offer personal butlers during the stay. Luxury hotels, such as Ritz-Carlton, would also fall in this category.

To the lower right quadrant in Figure 1, the opposite type, "Standardized Services," is situated. Standardized Service types—likely to adopt what Frei (2006) calls a classic variability reduction strategy—are akin to the production line services (Levitt, 1972; Levitt, 1976); they offer efficient, typically low-cost processes with few options that allow for customization. Business traveler oriented hotel chains, like Marriott's Fairfield Inn, Hilton's Garden Inn, or Mövenpick Hotels, are good examples of hotels in this category.

Firms in the upper right quadrant in Figure 1, labelled as "Scripted Experience," are relatively high on both EXP and PS. The companies in this category possess the ability to reap the benefits of both standardized process design—in terms of consistency and cost savings—and a high degree of experiential content. Classic examples of this type in the hospitality industry include theme hotels, such as those in Disney or

Legoland resorts worldwide. Services in the lower-left quadrant of Figure 1 are low on both EXP and PS; they can be represented by many small bed and breakfasts or AirBnb properties aiming to provide little more than a place to sleep. They are not expected to be either especially efficient or to provide any kind of "emotional" experience. It should be noted that not all B&Bs would fall in this category.

2.2 Service Improvisation Competence (Serv-IC)

Customer-introduced variability poses considerable problems to the system designer and significantly impacts service outcomes (Shostack, 1977; Bitner et al., 1990; Menor and Roth, 2007; Menor and Roth, 2008). Variability management strategies are typically conceptualized on a continuum from attempts to reduce it to ones that attempt to accommodate it. The variability reduction approach has been the focus of much service operations literature and can take different forms, mainly reducing the variety in customer requests, reducing the intrinsic variance in the service processes themselves, or decoupling the front- and back-stage of the service system as much as possible (Chase, 1978; Frei, 2006). In contrast, a variability accommodation strategy entails the creation of a flexible system, capable of responding to a wide variety of disturbances, which can lead to a substantial competitive advantage in service businesses (Menor *et al.*, 2001; Voss *et al.*, 2008).

Improvisation—generally defined as a situationally-induced, rapid, and spontaneous adaptive process (Eisenhardt and Tabrizi, 1995; Moorman and Miner, 1998)—has been proposed as a way to cope with high-uncertainty settings (Brown and Eisenhardt, 1998). The development of a Service Improvisation Competence (Serv-IC)—operationally defined as the ability of a service firm's employees to deviate from established service delivery processes and routines to respond in a timely manner to unforeseen events using available resources (Blinded, 2019)—represents a way to

break from this perceived trade-off, because it requires standardized processes to start with, but allows variations when the situation requires. A significant stream of literature in organizational behavior, entrepreneurship, and strategy examined the role of employee improvisation in organizations to face environmental turbulence or to generate innovative solutions (Brown and Eisenhardt, 1997; Vera and Crossan, 2005; Cunha *et al.*, 2014). Improvisation has been examined both as a conceptual tool to understand service delivery as well as a practical way to introduce flexibility in the system (John *et al.*, 2006; Cunha *et al.*, 2009; Leybourne, 2009).

This paper adds to a stream of research exploring improvisation in service settings. Prior related work developed the measurement instrument employed in this study and explored the service delivery design choices that lead to the development of a Service Improvisation Competence (Serv-IC) (Blinded, 2019). Furthermore, Blinded (2019) showed that Serv-IC can have a significant positive effect on performance in some hotels, but their analysis was limited by the use of hotel star rating as the only element to classify different types of properties. The contingent effects of Serv-IC are assessed using the service typology created in the previous section, which is based in specific service delivery design choices. Blinded (2019) focused on employees' perspectives, whereas this paper presents data from hotel managers.

3 Hypotheses Development

Service operations strategy literature has consistently shown that the creation of enticing service experiences has a positive effect on customer satisfaction, and a growing body of literature is devoted to the analysis of design elements that impact the creation of such experiences (Menor *et al.*, 2001; Pullman and Gross, 2004; Voss *et al.*, 2008; Zomerdijk and Voss, 2010; Zomerdijk and Voss, 2011). The systemic presence of Serv-IC is expected to have different outcomes across the four service types, given

the general organizational and operational characteristics of the service system. Serv-IC can work in concert with other policies and procedures or it can produce a disruption of the service delivery. The dimensions of the proposed service typology are meant to unravel the complex relationships between different aspects of service design (the concept and process elements) and the implementation of the design elements during the service encounter (the ability to improvise). Victorino *et al.* (2013) provide evidence that hotel guests value authentic and "unscripted" interactions when not performing routine operations. Building on their work, this paper posits that Serv-IC will have a positive performance effect on average, by increasing feelings of authenticity and engagement in customers (Gilmore and Pine, 2007; Victorino et al., 2012), but such effect will be moderated by the design choices represented by EXP and PS. In the hospitality industry, it is expected that a more flexible and accommodating service delivery will be associated with higher prices for guests, measured by average daily rate (ADR), and with higher customer satisfaction, resulting in higher occupancy. The following hypotheses are therefore advanced.

H1a. Service Improvisation Competence (Serv-IC) has a direct positive association with hotel average daily rate (ADR)

H1b. Service Improvisation Competence (Serv-IC) has a direct positive association with hotel occupancy.

The effect of Serv-IC on hotel performance variables is not likely to be equal across service types. A property marketed to business travelers seeking efficient and easy to follow procedures will likely focus on process standardization more than a vacation resort. Therefore, improvisation is likely to have a different effect on property types with a different degree of process standardization. Similarly, guests of hotels that build their offering around a high degree of experiential content, such as themed or

boutique hotels, will respond differently to improvisation compared to guests in more mundane settings. Consequently, the following hypotheses, which are meant to establish the validity of classification variables in assessing the effects of Serv-IC on service performance, are advanced.

H2a. The relationship between Service Improvisation Competence (Serv-IC) and hotel ADR is moderated by the Experiential Content of the Service (EXP).

H2b. The relationship between Service Improvisation Competence (Serv-IC) and hotel occupancy is moderated by the Experiential Content of the Service (EXP).

H3a. The relationship between Service Improvisation Competence (Serv-IC) and ADR is moderated by Process Standardization (PS).

H3b. The relationship between Service Improvisation Competence (Serv-IC) and occupancy is moderated by Process Standardization (PS).

While H2 and H3 concern the presence of a moderating effect of EXP and PS, the following paragraphs build on the same logic to formulate specific hypotheses for each hotel type, therefore considering the joint effect of EXP and PS. Hospitality services that focus on providing unique customer experiences will present a more favorable environment for improvisational activities (John *et al.*, 2006; Palmer, 2010). Therefore, the presence of a Service Improvisation Competence (Serv-IC) in hotels will lead to favorable outcomes in the Personalized Experience service type (Figure 1), where customers expect a certain degree of accommodation.

H4a. Serv-IC has a direct positive association with ADR for hotels in the Personalized Experience type.

H4b. Serv-IC has a direct positive association with Occupancy for hotels in the Personalized Experience type.

In addition, the use of improvisation would be particularly suited to environments in which a high degree of control coexists with the necessity to create meaningful service experiences. As a result of the dual nature of improvisation, which allows a balancing act between the creation of stable routines and the free initiative of front-line employees, Serv-IC can be a valid mechanism to introduce flexibility into an otherwise standardized service. Therefore:

H5a. Serv-IC has a direct positive association with ADR for hotels in the Scripted Experience type.

H5b. Serv-IC has a direct positive association with Occupancy for hotels in the Scripted Experience type.

Conversely, the use of improvisation in highly standardized service environments can lead to a disruption of service delivery systems that are built with a focus on efficiency and reliability (Heskett *et al.*, 1994; Stewart and Chase, 1999; Frei, 2006). The failure to adequately execute the processes required by the current situation, without the omission or modification of the steps of a routine, can result in serious repercussions on the service delivery system and on the business outcomes. Stewart and Chase (1999) discuss the potential consequences of this class of errors, referred to as "skill-based errors" (p. 243), on service quality. These authors conclude that rule misapplication as well as interruptions or omissions in the execution of a service delivery routine are major sources of service failures. This kind of process-based and reliability-oriented conception of the service delivery is particularly fitting in the Standardized Service type. A negative association is hypothesized among the use of

improvisation in services built around low experience and high process standardization and service performance.

H6a. Serv-IC has a direct negative association with ADR for hotels in the Standardized Service Type.

H6b. Serv-IC has a direct negative association with occupancy for hotels in the Standardized Service Type.

Hotels in the lower-left quadrant in Figure 1 are characterized by low emotional involvement (low EXP) and low Process Standardization (PS). They are usually simple services that can be delivered with a minimal amount of planning and without being particularly engaging. In this kind of service, some improvisation is likely necessary but not required (or expected by customers) as much as for the highly experiential services; therefore:

H7a. Serv-IC has no association with ADR for hotels in the Unstructured Service Type.

H7a. Serv-IC has no association with occupancy for hotels in the Unstructured Service Type.

4 Methods

4.1 Modeling Strategy

To test the hypotheses advanced in Section 3, the model in Equation 1 tests the relationship between Serv-IC and performance outcomes, ADR and Occupancy. However, the estimation of the outcomes of Serv-IC in terms of hotel performance could be subject to endogeneity problems, due to omitted factors in the error term that might be correlated with Serv-IC. For example, cultural and psychological characteristics of employees have been theorized to increase the ability to improvise as

well as being related to service performance. Similarly, market characteristics can lead to an increase in Serv-IC as well as having consequences on the firm performance, hence leading to correlation between the error term and the outcome. This paper employs instrumental variables to reduce the impact of these sources of endogeneity in the estimation of Equation 1. In addition to the possibility of omitted variables, the instrumentation is an effective way to remove measurement error from the regressors (Greene and Zhang, 2003). The second stage of the system of equations has the following form:

$$Performance = \alpha_0 + \alpha_1 MARKER + \alpha_2 ROOMS + \alpha_3 STARS + \alpha_4 PS + \alpha_5 EXP + \beta_1 ServIC + \beta_2 ServIC * PS + \beta_3 ServIC * EXP + \epsilon$$

Equation 1

where α_n are the coefficients of exogenous variables; MARKER is a marker variable to account for common method variance; ROOMS is the hotel size measured as number of rooms available; STARS is the hotel star rating; and PS and EXP represent effect coding for Process Standardization and Experiential Content of Service. β_n are the coefficients of endogenous variables, where *ServIC* represents the Service Improvisation Competence variable. Number of rooms and star rating are included as controls to further remove possible confounding factors from estimation. Hotel size is likely related to experience and professionality of management, the presence of formal hiring procedures, and similar factors that could impact performance. Star rating is usually an indication of the quality of facilities, which affects performance.

The instrumental variables (IVs) have to satisfy two basic conditions in the population: (1) they need to be uncorrelated with the error ε; and (2) they need to be correlated with the instrumented variable (Stock and Yogo, 2005; Bascle, 2008). Two instruments are proposed. Empowerment (EMP), defined as the degree to which

managers allow front-line employees the latitude to make decisions about service delivery tasks, satisfies both conditions to be a candidate as a valid instrument. First, empowerment is a necessary condition for service employees to engage in improvisation. If managers do not allow the necessary latitude to front line employees, they will be less likely to deviate from standard routines. As for the second requirement, that the instrument be uncorrelated with the error of second-stage equation, previous research shows that the relationship between empowerment and performance is mediated by actual employee behavior, so much so that researchers have failed to identify a clear positive effect of service employee empowerment on customer satisfaction (Hartline and Ferrell, 1996). Therefore, Employee Empowerment (EMP) is a reasonable candidate instrument for Equation 1.

Customer Introduced Uncertainty (CIU) is a variable that measures the uncertainty introduced into the service system by the customers in terms of their arrival time, the degree to which they are willing to participate in the creation of the service, and in their preferences. This variable will be correlated to Serv-IC, in that the more the customers introduce variation into the system, the higher the likelihood that customer-contact employees will improvise, given that they possess the necessary competence (Blinded, 2019). In addition, CIU does not have a significant direct effect on the performance measures under investigation. Service management literature has repeatedly shown that the key element in generating customer satisfaction and revenue is the way in which variation is handled rather than how much variation is present in the system (Schneider and Bowen, 1999). Beyond the theoretical basis for the choice of instruments, Section 5 provides empirical validation.

4.2 Data Collection and Measures

Primary data was collected through a survey of hotel managers in charge of employees that occupy customer contact positions. The data has been collected through the Center for Hospitality Research (CHR) at Cornell University: when signing up to the CHR website, subscribers are invited to classify their jobs and are asked if they are willing to participate in research. 3,500 email invitations were sent to subscribers who indicated that they occupy management positions in the hospitality industry. The unit of analysis of this study is the individual hotel property, and therefore managers in charge of multiple hotels or in corporate positions were excluded. The job titles of managers in the survey are typically those of Hotel Manager, Front Desk Manager, Director of Rooms, and Food & Beverage Director, and similar. Of the 3,500 invitations sent, 774 responses were received (i.e., clicked on the link). In a total of 448 responses, the survey was more than 90 percent incomplete, and 4 responses of individuals who did not fall into the sample frame were deleted. Two cases emerged as multivariate outliers and were more closely examined: one of them was constituted by identical responses to all questions (the respondent answered “strongly agree” to everything) and the second presented very odd operating and demographic characteristics. After deleting these outliers, the survey resulted in 320 usable observations, corresponding to a 9 percent response rate. The high non-response rate is likely due to the length of the survey as well as to the fact that subjects who looked at the survey first and then went back at a later time to fill it might be counted as non-respondents. As expected by the typical profile of managers that are interested in getting access to research results, the sample is skewed toward higher star-rating properties. Descriptive statistics and correlations are reported in Tables A.1 and A.2.

To prepare the data for analysis, hotel properties have been classified according to the conceptual typology in Figure 1. The sample was split in groups representing relatively extreme characteristics to provide insights on the differences in service typologies. The cutoff point needed to be as far away as possible from the mean without resulting in samples that were too small within each group. Observations were considered "high" on the variables of interest (EXP and PS) if they exhibited a value higher than one-sixth of a standard deviation away from the mean. Similarly, values lower than the mean minus one-sixth of a standard deviation were considered "low" on the corresponding dimension. Those in the middle represent services that do not clearly fall in any of the "pure" categories. Thus, for effects coding purposes, EXP and PS have been coded as +1 for "high" values and -1 for "low" values, and 0 for the "middle". The partitioning resulted in a sample size of 44 for the Personalized Experience type, 104 for the Scripted Experience, 40 for the Standardized Service, and 38 for the Unstructured Service.

To assess the differences among groups, and therefore the validity of the classification, a single factor ANOVA was conducted for several variables measured by the survey, and if the omnibus F value for the ANOVA was significant ($p<.05$), multiple comparisons were tested using the Tukey pairwise-comparison method (Kramer, 1958). First, differences in the classification variables, EXP and PS, were tested. The results indicated that cutoff points resulted in significantly different scores. Next, other variables of interest which were included in the survey to better describe the service types were considered. The high experience groups are, on average, star rated higher than the other two groups. The unstructured services report statistically lower amounts of training and other human resource development practices than the other types. The scripted experience group differs from the personalized experience by

reporting that their performance measurement is formally tied to measures of customer satisfaction.

4.2.1 Nonresponse and common method bias

Nonresponse bias was tested by performing a series of t-tests between the last twenty five percent of respondents and the rest of the sample on a large number of variables in the survey. Only two of the fifty variables tested are significantly different across the groups ($p<.05$) (Armstrong and Overton, 1977).

When data are collected from a single respondent there is a risk of spurious covariance between the measures in the survey, commonly referred to as Common Method Variance (CMV), possibly resulting in biased estimators (Podsakoff *et al.*, 2003; Siemsen et al., 2010). Several steps were taken to minimize CMV as well as limit its potential effect on the analysis. First, the wording of the survey items was refined in order to improve their clarity by using expert judgment and q-sort techniques, resulting in tentative item reliability and validity (Churchill Jr, 1979; Menor and Roth, 2007). Then, items were kept concrete by referencing actual behaviors, instead of beliefs and attitudes (Podsakoff and Organ, 1986). Finally, the survey addressed concerns about privacy, reducing social desirability bias (Podsakoff *et al.*, 2003). Harman's single factor test results in four factors with eigenvalue greater than one, indicating that no single method factor explains the covariances among items. A marker variable was included. The variable is a single 7-point, Likert-type scale question asking for a prediction on the state of the economy. The correlation that might emerge between the marker and the other variables can be attributed to the tendency of the respondent to gravitate towards a certain set of values (Lindell and Whitney, 2001; Siemsen *et al.*, 2010). Finally, Siemsen *et al.* (2010) proved analytically that common method variance does not inflate the estimate of nonlinear terms in the regression equations. Given that

the focus of this research is on estimating interaction effects, CMV is not likely an issue in this study.

4.3 Measures

Table 1 reports the measurement properties of the instrument. All items for the independent variables are measured on a 7-point Likert scale, ranging from "strongly disagree" to "strongly agree." Table 1 reports the survey questions and the standardized loadings for each item. For reflective constructs, it reports measures of reliability, namely, composite reliability as measured by the coefficient ω with unequal weights (Bacon *et al.*, 1995) and average variance extracted (AVE) (Fornell and Larcker, 1981). In the remainder of this section, each scale is discussed individually as it concerns its origin and psychometric properties.

4.3.1 *Dependent variables*

The dependent variables in this study are commonly used performance metrics in the hospitality industry: Average Daily Rate (ADR) and Occupancy. The measures are self-reported averages over the three months preceding the survey. Average Daily Rate (ADR) is the average amount charged by the hotel for one room for one day, and can be regarded as a proxy for customers' willingness to pay. Occupancy indicates the average percentage of occupied rooms in a given time interval and it is considered a reliable indication of customer loyalty and of hotel reputation.

4.3.2 Typology variables

The variables used to create the typology are measured as reflective constructs and have been validated using confirmatory factor analysis (Fornell and Larcker, 1981; Bentler, 1990; Hu and Bentler, 1999). The CFA exhibits reasonable fit (CFI = 0.986, RMSEA = 0.061).

Process Standardization (PS) is adapted to the managers' setting from the scale developed by Blinded (2019). This scale reflects the extent to which routines and procedures in service delivery are complex and formalized, consistent with the definitions of service scripting accepted in the literature (Tansik and Smith, 1991; Tansik and Smith, 2000). The measure exhibits good composite reliability (0.827) and AVE higher than 0.5, which provide evidence for the reliability and unidimensionality of the construct.

Experiential Content of Service (EXP) is also adapted from Blinded (2019). The scale reflects the degree to which the service delivery system is designed to emotionally engage customers during their interaction with service personnel (Pullman and Gross, 2004; Voss *et al.*, 2008). This scale represents the intended strategy of the service firm, that is, the intentions of the service designers (Roth and van der Velde, 1991; Roth and Menor, 2003b; Voss *et al.*, 2008). The scale exhibits good composite reliability (0.868) and a high AVE (Table 1)

[Table 1 about here]

4.3.3 Instrumental variables

The instrumental variables have been conceptualized as formative constructs and have been validated by testing a MIMIC model where the items individually predict the latent construct Serv-IC (Diamantopoulos and Winklhofer, 2001).

Employee Empowerment (EMP) is operationally defined as "the extent to which managers allow employees to use their own initiative and judgment in performing their jobs" (Hartline and Ferrell, 1996). This study employs a subset of the measure by Hartline and Ferrell (1996). The construct is intended to measure a set of practices that create a climate of employee empowerment and can, therefore, be modelled

formatively. The analysis shows that only two of the three items load significantly on Serv-IC and therefore one item was dropped from the scale.

Customer-Introduced Uncertainty (CIU) measures the uncertainty introduced by the guests into service operations. CIU is a multi-item measurement scale developed by Blinded (2019) and based on the different types of variability in customer behaviors that can introduce uncertainty in service operations, such as arrival times, preferences, and type of service required (Frei, 2006). The scale measures the multifaceted nature of uncertainty in service operations and has been modeled formatively. Only one of the original items created for the scale loaded significantly on Serv-IC and was therefore retained and used as a single-item scale.

4.3.4 *Service improvisation competence (Serv-IC)*

This paper adopts Blinded's (2019) operationalization of *Service Improvisation Competence* (Serv-IC) as a second-order latent construct composed of the multi-item dimensions of creativity, spontaneity, and bricolage. Creativity is operationalized as the frequency with which service employees deviate from established procedures during the service encounter. Spontaneity is operationalized as the frequency with which customer-contact employees need to provide a fast response to guest requests. Finally, bricolage is operationalized as the frequency with which employees need to assemble the informational and physical resources at their disposal in new and unplanned-for ways. The measurement instrument for Serv-IC is composed of items taken from previous literature on improvisation (Moorman and Miner, 1998; Vera and Crossan, 2005) as well as by items specifically created for the hospitality setting. All first-order dimensions and the second-order Serv-IC construct exhibit good composite reliability and AVE (Table 1). The CFA results in a good fit (CFI=0.988, RMSEA=0.012).

5 Analysis

The empirical strategy of this paper is driven by an attempt to mitigate possible endogeneity problems that might obfuscate the relationship between Serv-IC and performance. The test of endogeneity suggested by Hayashi (2000, pp. 233-234), which compares estimations in which the suspect variable is treated as endogenous or as exogenous, was performed to verify that endogeneity is affecting the results of the OLS regression. The results of the test indicate that the null hypothesis that Serv-IC is exogenous cannot be rejected. However, due to strong theoretical reasons to suspect the presence of endogeneity, both due to omitted variables (factors such as location and facilities) and to measurement error in Serv-IC, the results for both OLS and 2SLS estimation are reported.

The estimation was conducted using the ivregress command in Stata 13 (Baum, 2006; StataCorp, 2013b). The variables indicating number of rooms and Star ratings (Star)—generally known in the industry to influence business outcomes—have been included as controls. Missing values in the independent variables have been imputed using the Multiple Imputation/Expectation Maximization (EMB) algorithm implemented in the package Amelia II in the statistical software R (Honaker *et al.*, 2011). The analysis presented is the result of multiple imputation across five repetitions. The estimate of the parameters of interest is obtained as the average of the estimates across the five runs, and the standard errors are computed using the formula proposed by Rubin (1987) as implemented in the mi command in Stata 13 (StataCorp, 2013a). The first stage regressions predicting Serv-IC exhibit F values larger than 10 (Table A.3), which is the cutoff usually suggested by the literature (Greene and Zhang, 2003, pp. 399–400), indicating that the instruments are not weak (i.e., they meet the criterion

of relevance). The validity of the instruments employed is predicated on the theoretical arguments presented in Section 4.1, as the commonly used test of validity (the Sargan-Hansen statistic, see Cameron and Trivedi, 2009, p. 191) has not been extended to datasets subjected to multiple imputation.

Table 2 reports the results of the OLS and 2SLS estimations for the two outcome measures. The results are displayed in successive hierarchical order, where the first equation only tests the controls, the second introduces the main effects, the third and fourth cover each interaction, and finally the fifth model presents the complete estimation of Equation 1.

[Table 2 about here]

Control variables behave according to expectations. Number of rooms (ROOM) is positively related to occupancy rate (.255, $p<.01$). Larger hotels are likely to have scale economies, and managers will be focused on keeping rooms filled using overbooking and similar strategies. Conversely, smaller hotels would be very wary of adopting booking practices that might involve relocating their guests. Star rating influences ADR (.374, $p<.01$). Higher star hotels signal performance quality, allowing them to demand higher prices from their guests. The marker variable is never statistically significant ($p>.10$), therefore adding credence to robustness checks that CMV is not a significant source of bias (Lindell and Whitney, 2001; Siemsen *et al.*, 2010). In contrast to what was hypothesized in H1, Serv-IC does not have a direct, significant effect on ADR nor Occupancy, on average. Also contrary to expectations, the only variable that predicts ADR apart from star rating is EXP, therefore H2a and H3a are not supported. This is an interesting finding, in that it shows an increase in the value delivered to the customer through improvisation is not associated with a higher price point, while higher experiential content is.

Conversely, a statistically significant interaction effect between Serv-IC and PS (.519, $p<.05$) is found, supporting H3b, while the interaction between Serv-IC and EXP is only present in the OLS regression (0.158, $p<.05$). Thus, H2b is only partially supported. Figure 2 and Figure 3 plot the slopes of the interaction terms. The result in Figure 2 is intuitive: Victorino *et al.* (2013) found the adherence to predetermined scripts detrimental to customer satisfaction in customized services, as it detracts from the sense of authenticity that indicate an emotional connection. Conversely, when customers expect a more standardized interaction, Serv-IC can lead to a negative effect on performance. Remember that, consistent with Pullman and Gross (2004), Experiential Content of Service (EXP) was defined as the degree to which service design elements are *intended* to elicit an emotional response in the customers. It is therefore no surprise that hotels that are high in EXP would benefit from allowing their employees to deviate from procedures as they deem necessary to establish authentic relationships with their customers.

[Figure 2 about here]

[Figure 3 about here]

The results presented in Figure 3, however, are at odds with conventional wisdom. The effect of Serv-IC is positive for services high on the Process Standardization (PS) dimension and negative for those with a low PS score. The prevailing logic in service operations is that highly standardized services are low in experiential value. In these cases, performance is driven by seamless execution of predetermined and highly routinized processes. The results in this study highlight the importance of a previously under-investigated nuance to traditional perspectives in service strategy, namely, the explicit delineation of the Scripted Experience service types. They build their service offering by combining the strengths of standardization

with the delivery of a highly engaging service experience. The empirical findings of this paper are an indication that Serv-IC may play an important strategic role in the delivery of this kind of service. The managerial implications are considerable. Service firms can exploit employee improvisation to delight customers, even in a highly scripted environment. Together, the interaction effects of Serv-IC on both EXP and PS point towards the need for a contingency theory in the evolution of organizational improvisation.

[Table 3 about here]

Having established the presence of an effect of PS and EXP in the moderated relationship between Serv-IC and Occupancy, within-group effects can be further explored. Table 3 reports the results of a test performed by splitting the sample into the four generic service types (Figure 1) according to the levels of EXP and PS, and subsequently, performing a test of the effect of Serv-IC on occupancy within each subsample. Table 3 shows a positive effect of Serv-IC on Occupancy in the Scripted Experience type, providing support for H4b. No effect is observed on the other groups, leading to rejection of H5b, H6b. The finding concerning the effect in the Scripted Experience group is particularly important, in that it exactly matches the insight that improvisation is most effective when it rests on solid and well-understood procedures, rather than in a free environment. Additionally, from a strictly service-management-based perspective, the joining of high PS and improvisation is the key to creating an environment that can consistently surprise customers and leads to feelings of delight (Schneider and Bowen, 1999; Chase and Dasu, 2001).

Contrary to H6, predicting a negative association between Serv-IC and performance in Standardized Service types, no effect (p>.10) was found. A finding of no support for H6 is intriguing because conventional wisdom led to the expectation of

improvisation systemically adding to service variability, which is classically thought to be detrimental to standardization. As predicted, there was no effect of Serv-IC on occupancy in the Unstructured Service type (H7a and b are supported). Given the somewhat arbitrary choice of the cutoff point for different groups in our analysis, the results presented in this section have been validated using groups obtained with a cluster analysis (using Ward method followed by K-means, Brusco et al., 2017). The cluster analysis results are reported in Table A.4 and are analogous to the groups used in the main analysis. The hypotheses tests on the groups obtained by clustering yield the same results as the ones obtained with cutoff point used in the main analysis.

6 Discussion and Conclusions

The results in this paper partially support the proposed model of the effects of Service Improvisation Competence on the performance outcomes of hotels, as well as the insights provided by the literature on service experiences (Pullman and Gross, 2004; Voss *et al.*, 2008; Zomerdijk and Voss, 2011). In general, the higher the intended experiential content of services as a salient component of the service concept, the higher the positive influence of Serv-IC on occupancy.

The contingency approach adopted in this paper lends support to the idea that improvisation is useful in certain types of services but not in others. Namely, Serv-IC has a significant effect on occupancy in the Scripted Experience group but has no effect on the average daily rate. This implies that hotel guests within this type are more likely to be attracted to properties that provide the flexibility offered by the firm's improvisation competence, but are not necessarily willing to pay a higher price. Part of the reason for this finding can be attributed to the changes occurred in the past few decades in the industry. Online booking systems have made it extremely easy to compare prices across different options. In this environment of price transparency, it is

easy for travelers to find reasonable accommodations at the desired price. The main finding of this paper is the lack of an effect in the Personalized Experience type and the strong effect in the Scripted Experience type. While a significant amount of improvisation competence is present in both groups, the first type does not benefit. A plausible reason for this can be found in the fact that customers of the first type of hotels expect a high degree of flexibility, making it almost an order qualifier. Conversely, when guests arrive at a hotel of the type characterized as Scripted Experience, they expect competent service in a pleasant atmosphere. In this scenario, the use of improvisation—in case of a guests' special request—can add the touch that moves the customer from *satisfaction* to *delight* (Schneider and Bowen, 1999). Improvisation is likely to result in further positive reviews and, in turn, increase the likelihood of the guest returning to the same property, as well as other readers of the review booking a room in the property. While improvisation tends to be usually associated with high-end, expensive hotels typical of the Personalized Service group, the results of this paper suggest that the combination of Serv-IC and PS is a viable operations strategy to break the perceived trade-off between the quality of experiences and the efficiencies stemming from process standardization.

The results in the Standardized Service Type (i.e., low experiential content and high degree of scripting) indicate that Service Improvisation has no effect on the performance measures examined. The expectation was of a negative effect, in that customers that choose services that are supposed to offer a standardized, highly efficient delivery are not usually likely to welcome any deviation from the expected delivery processes. The lack of significant findings might also be due to the low sample size in the standardized service group. Even if this paper has not found evidence of a negative effect on revenues, the body of previous research suggests that spending

resources to develop a Serv-IC in this group is not generally a recommendable course of action. As expected, no effect is found in the Unstructured Service Type—characterized by both a low degree of experiential content and a low degree of scripting. Properties of the Unstructured Service Type are likely to compete on price, and do not put a strong emphasis on customer delight or on efficiency. Therefore, some improvisation is likely to be occurring, but it does not have a substantial effect on either revenue or occupancy rates.

Like any research effort, this study presents limitations. First, while the typology advanced in the background section builds on general principles and is intended to be of general applicability, the empirical validation offered in the paper is tightly focused on the hospitality industry. Therefore, the question of the generalizability of the result presented in this paper remains open. While our independent variables (improvisation competence, experience, and process standardization) are easily transposed into other contexts, the industry-specific dependent variables might not have direct correlates. Future research should test the typology as well as the effect of Serv-IC on performance in more general, cross-industry surveys or targeting different service sectors.

Moreover, the business performance outcome variables do not include a cost element. It is commonly accepted both in research and in practice that one of the main drivers of scripting is the gain in efficiency, which results in cost savings. However, in the hotel sector, managers typically use ADR and Occupancy rates to gauge their business performance, and therefore have those numbers readily available in their mind. Asking for more appropriate measures (such as the Gross Operating Profit per Available Room), would likely result in a significant drop in response rate. A second important limitation is that the sample size within some types is small for the estimation

performed. Future research will attempt to collect larger samples to better estimate the smaller effects that are likely to be present in the low-experience groups. Third, this paper relies on a single respondent in a managerial position. While managers are the most appropriate respondents for questions regarding service delivery system design and operations, employees might offer a different view of how they improvise in service delivery.

Finally, this research focuses on routine front-line operations and, therefore, the inferences that can be made from these data provide only general guidance. A different scenario is likely to emerge in the case of service recovery situations, whereby some aspect of the service delivery has failed. In this subset of events, it is possible that possessing some degree of Service Improvisation Competence would be beneficial even in the low experience groups.

These limitations notwithstanding, the results presented in this paper provide several contributions to the literature and practice of service design and management. First, this paper examines the long-standing theoretical classification of service delivery systems between standardized and personalized services and provides a strong empirical link between the process design element of standardization and the service concept in the context of service strategy. A new service delivery typology is advanced, based on process design choices and choices concerning the intended service concept. This typology offers a mechanism to shed new light on the different ways in which service operations address customer-introduced uncertainty.

Second, this research provides empirical evidence that service firms can indeed break the trade-offs between process standardization and quality of the experience, through a strategic use of their Serv-IC. Chase *et al.* (1984) argued for separating the technical core of the organization from the customer-contact part to effectively manage

customer-introduced uncertainty. This paper shows that a different approach is also possible: using improvisation, managers can make highly standardized processes and flexibility coexist in the same high-contact service delivery system.

These results indicate that managers have to clearly define their service concept and that relying on employee judgment becomes particularly important when the intended service strategy falls away from classical accommodation and reduction strategies. Employees' skills, management systems, and, more important, customer expectations, have to be managed carefully to avoid the deleterious effects of Serv-IC in standardized environments. Consistent with the expectation disconfirmation paradigm of service quality, customer expectations generated by the strategic positioning of the service offering play an important role in the final assessment of the service received.

The findings corroborate the literature on service experience, suggesting that the service strategy has to be the driver of the operational choices and that the whole service system should be designed in such a way as to provide the right cues both to customers and employees (Voss *et al.*, 2008). At the same time, this paper provides a new perspective on the design of service delivery processes in experiential services, broadening the theoretical linkage between service delivery and performing arts—embedded in the use of terms like "service scripts" (Tansik and Smith, 2000) and "choreographing" service experiences (Voss *et al.*, 2008)—to explicitly include employee improvisation as a fundamental element of service operations design. In conclusion, this study significantly contributes to the understanding of service delivery systems design, it sets the foundations for future research and for a deeper understanding of the dynamic interplay between process design and systemic on-the-spot decision making.

APPENDIX

[Table A.1 about here]

[Table A.2 about here]

[Table A.3 about here]

[Table A.4 about here]

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Figure 1. Conceptual Typology of Service Delivery Systems.

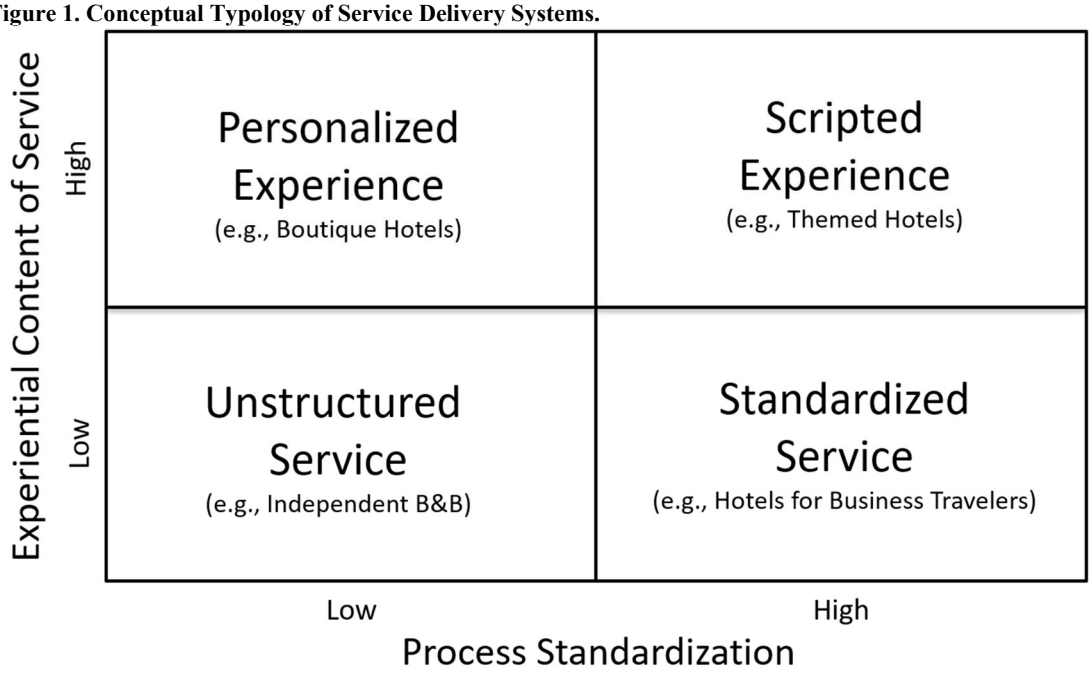

Figure 2. Interaction of Serv-IC and Experience (effect on Occupancy)

Figure 3. Interaction of Serv-IC and Process Standardization (effect on Occupancy)

Table 1: Measurement Models (items adapted from Blinded, 2019)

First-Order Reflective Constructs			
Constructs/Items	**(Composite Reliability, AVE)**	**Std. Loading**	**t-value**
Process Standardization (PS)	**(0.827, 0.531)**		
When they are in contact with guests...			
...most of the actions that employees have to perform are outlined in formal processes		0.879	a
...employees have detailed instructions for handling most unusual situations		0.621	13.68***
How much do your employees' interactions with guests follow standardized procedures?		0.659	15.46***
Experiential Content of Service (EXP)	**(0.868, 0.669)**		
Customer experience is at the center of our offering		0.770	a
We provide our guests with a feeling of genuine caring and authenticity		0.877	35.30***
We make a deliberate attempt to emotionally engage our guests		0.803	28.72***
$\chi^2(8) = 17.608$ (p = .024), CFI=0.986, RMSEA=0.061, 90% C.I. RMSEA: 0.021, 0.100			
a: loading fixed at 1 for specification			
Service Improvisation Competence (Serv-IC)	**(0.883, 0.640)**		
Creativity	**(0.785, 0.532)**	**0.908**	**64.00*** **
The employees in this hotel...			
...often find new ways of working together to accommodate specific customers' requests		0.730	a
...often deviate from standard routines to respond to customers' requests		0.651	15.48***
...often try new approaches to solve guests' problems		0.799	24.75***
Spontaneity	**(0.818, 0.582)**	**0.644**	**a**
During their contact with guests...			
...our employees are spontaneous in their interactions		0.674	a
...our employees often have to respond in the moment to unexpected problems		0.820	25.89***
...our employees deal with unanticipated events on the spot		0.784	23.50***
Bricolage	**(0.861, 0.667)**	**0.825**	**21.01*** **
The employees in this hotel...			
...often pull information from many different sources to respond to customers' requests		0.853	a
...often make use of several other workers' expertise to satisfy guests		0.809	29.93***
...often use extra discretionary resources in order to satisfy guests		0.787	27.43***
χ^2 (23) = 36.736 (p = .035), CFI=0.988, RMSEA=0.046, 90% C.I. RMSEA: 0.012, 0.072			
a: loading fixed at 1 for specification			
First-Order Formative Constructs			
Employee Empowerment (EMP) (validated predicting Serv-IC)			
I allow employees to do their work the way they think best		0.264	4.17***
I encourage initiative in my employees		0.009	0.13
I encourage employees to participate in important decisions concerning service delivery		0.218	2.84**
Customer Induced Uncertainty (CIU) (validated predicting Serv-IC)			
It is difficult to predict how much effort our guests are going to put in helping staff provide a satisfactory service		-0.092	-1.25
It is difficult to predict how many guests will require service at any given time		0.027	0.37
Guests vary widely in what they consider a satisfactory service experience		0.310	4.59***
**p<.05, ***p<.001			

Table 2: Effect of Serv-IC on Performance

	Controls	Main Effects		Serv-IC*EXP		Serv-IC*PS		Full Model	
Estimation Method:	OLS	OLS	2SLS	OLS	2SLS	OLS	2SLS	OLS	2SLS
DV: Occupancy (N=302)									
Intercept	0.012	-0.009	0.007	-0.079	-0.100	-0.024	-0.048	-0.076	-0.126
	(0.057)	(0.062)	(0.064)	(0.063)	(0.085)	(0.062)	(0.076)	(0.063)	(0.103)
Marker Variable	0.025	0.009	-0.007	0.019	0.017	0.008	0.001	0.016	0.017
	(0.058)	(0.059)	(0.060)	(0.057)	(0.060)	(0.057)	(0.062)	(0.056)	(0.068)
# Rooms	0.247***	0.236***	0.234***	0.238***	0.238***	0.242***	0.252***	0.242***	0.255***
	(0.063)	(0.064)	(0.065)	(0.064)	(0.064)	(0.064)	(0.069)	(0.064)	(0.068)
Star Rating	-0.032	-0.042	-0.043	-0.046	-0.049	-0.035	-0.022	-0.040	-0.028
	(0.062)	(0.068)	(0.069)	(0.069)	(0.070)	(0.068)	(0.073)	(0.069)	(0.076)
EXP		0.041	-0.014	0.052	0.037	0.032	-0.003	0.042	0.029
		(0.079)	(0.088)	(0.079)	(0.093)	(0.079)	(0.099)	(0.078)	(0.108)
PS		0.051	0.048	0.051	0.050	0.062	0.083	0.060	0.083
		(0.065)	(0.066)	(0.064)	(0.065)	(0.065)	(0.072)	(0.064)	(0.072)
Serv-IC (H1b)		0.079	0.215	0.093	0.147	0.071	0.099	0.083	0.069
		(0.076)	(0.155)	(0.068)	(0.161)	(0.063)	(0.178)	(0.064)	(0.183)
Serv-IC * EXP (H2b)				0.203**	0.280*			0.158**	0.216
				(0.065)	(0.163)			(0.072)	(0.184)
Serv-IC* PS (H3b)						0.189**	0.548**	0.153**	0.519**
						(0.060)	(0.176)	(0.065)	(0.169)
DV: Average Daily Rate (N=289)									
Intercept	0.016	0.001	-0.026	0.006	-0.001	0.008	-0.019	0.009	-0.002
	(0.055)	(0.060)	(0.065)	(0.050)	(0.087)	(0.060)	(0.066)	(0.062)	(0.086)
Marker Variable	0.060	0.039	0.070	0.041	0.062	0.041	0.070	0.043	0.063
	(0.048)	(0.049)	(0.059)	(0.050)	(0.058)	(0.049)	(0.059)	(0.050)	(0.058)
# Rooms	0.043	0.061	0.062	0.061	0.060	0.056	0.058	0.056	0.056
	(0.063)	(0.063)	(0.062)	(0.063)	(0.062)	(0.063)	(0.064)	(0.063)	(0.063)
Star Rating	0.408***	0.375***	0.376***	0.374***	0.377***	0.372***	0.374***	0.371***	0.374***
	(0.016)	(0.067)	(0.069)	(0.068)	(0.068)	(0.067)	(0.069)	(0.068)	(0.069)
EXP		0.138**	0.235**	0.139**	0.215**	0.140**	0.231**	0.142**	0.213**
		(0.070)	(0.093)	(0.070)	(0.093)	(0.070)	(0.089)	(0.071)	(0.091)
PS		-0.080	-0.073	-0.079	-0.076	-0.083	-0.074	-0.081	-0.078
		(0.063)	(0.065)	(0.062)	(0.065)	(0.063)	(0.066)	(0.062)	(0.065)
Serv-IC (H1a)		0.074	-0.170	0.075	-0.131	0.075	-0.157	0.079	-0.119
		(0.069)	(0.144)	(0.069)	(0.139)	(0.065)	(0.141)	(0.066)	(0.139)
Serv-IC * EXP (H2a)				0.020	-0.064			0.053	0.046
				(0.070)	(0.087)			(0.069)	(0.135)
Serv-IC* PS (H3a)						-0.082	-0.065	-0.096	-0.070
						(0.056)	(0.137)	(0.062)	(0.138)

Standardized coefficients (standard errors in parentheses)

*p < .1, **p < .05, ***p < .01 two-tailed test

Table 3. Effect of Serv-IC on Occupancy: Within-group analysis

	N	OLS	2SLS
Personalized Experience (H4b)	44	0.068	0.008
		(0.219)	(0.321)
Scripted Experience (H5b)	104	0.413***	0.837***
		(0.115)	(0.243)
Standardized Service (H6b)	40	-0.143	0.396
		(0.176)	(0.373)
Unstructured Service (H7b)	38	-0.144	-0.807
		(0.096)	(0.738)

Standardized coefficients (standard errors in parentheses)

Coefficient is calculated controlling for # of rooms and star rating

*p < .1 **p < .05 ***p < .01 two-tailed test

Table A.1. Correlations and Descriptive Statistics

	N	Mean	Std. Dev.	1	2	3	4	5	6	7	8	9
1. Occupancy	302	0.70	0.15	1								
2. ADR (USD)	289	205.8	230.72	0.077	1							
3. # Rooms	265	343.6	522.36	0.202***	0.106*	1						
4. Star Rating	270	3.98	0.87	0.014	0.267***	0.083	1					
5. Process Standardization (PS)	310	4.37	1.17	0.129**	-0.056	0.047	0.059	1				
6. Experiential Content (EXP)	298	5.87	0.99	0.136**	0.143**	0.035	0.187***	0.291***	1			
7. Empowerment (EMP)	304	5.19	1.19	0.141**	0.099*	0.155**	0.088	0.091	0.118**	1		
8. Customer-Induced Uncertainty (CIU)	296	5.21	1.64	0.056	-0.129**	-0.112*	0.019	0.017	0.018	0.097	1	
9. Service Improvisation Competence (Serv-IC)	281	5.10	0.99	0.131**	0.135**	-0.044	0.095	0.087	0.486***	0.366***	0.298***	1

* p< .1 **p< .05 ***p< .01

Table A.2 Respondents' descriptive statistics

Respondent Characteristics	Median Group
Experience in Hotel Industry	16-25 Years
Experience with Current Employer	4-6 Years
Experience as a Manager	11-15 Years
Education	Bachelor's Degree
Age Group	25-34 Years

Hotel Characteristics	Percent in sample
Star Rating	
1-3 Stars	29.63%
4 Stars	38.52%
5 Stars	31.85%
Hotel Category	
Full-Service Hotel	49.65%
Limited-Service Hotel	8.45%
Resort Hotel	22.89%
Other	19.01%

Table A.3 Results of First Stage Regressions Predicting Serv–IC.

	2nd Stage Dependent Variable	
	ADR	Occupancy
Intercept	-0.098	-0.102
	(0.069)	(0.068)
Marker	0.089	0.081
	(0.065)	(0.063)
Rooms	-0.044	-0.043
	(0.052)	(0.050)
Star Rating	-0.022	-0.016
	(0.059)	(0.060)
Experiential Concept (EXP)	0.387***	0.392***
	(0.065)	(0.064)
Process Standardization (PS)	-0.007	-0.010
	(0.061)	(0.059)
Empowerment (EMP)	0.271***	0.278***
	(0.082)	(0.076)
EMP*EXP	0.035	0.018
	(0.080)	(0.074)
EMP*PS	-0.031	-0.003
	(0.064)	(0.063)
Customer-Induced Uncertainty (CIU)	0.205***	0.224***
	(0.062)	(0.061)
CIU*EXP	-0.098	-0.091
	(0.069)	(0.069)
CIU*PS	0.116*	0.099
	(0.061)	(0.068)
F	11.22	11.84
N	289	302

*p < .1 **p < .05 ***p < .01 Two-tailed test of significance
The table shows standardized estimates (std.err. in parentheses)

Table A.4 Cluster Analysis Validation of Typology

Cluster	N	EXP	PS	Description
a)	16	4.59cd	1.65bcd	Low Exp, Low PS
b)	60	4.75cd	4.48acd	Low Exp, High PS
c)	68	6.06abd	3.18abd	High Exp, Low PS
d)	146	6.39abc	5.13abc	High Exp, High PS

A letter near a value indicates that the value is significantly different (p<.05) from the correspondent cluster.