Hospitality servicescape effects on customer-employee interactions:

A multilevel study

Abstract

Servicescapes are the manmade environments where hospitality activities, such as dining and lodging, occur. For more than two decades tourism and hospitality research has sought to understand the impact of hospitality servicescapes, primarily on hospitality customers and, to a lesser degree, on hospitality customer-contact employees. So far no empirical study has investigated, however, how servicescapes affect the interactions of customers with employees; there is therefore no empirical evidence that hospitality servicescapes can contribute to mutually satisfying encounters between customers and employees. We explore this question within the context of full-service restaurants by measuring the perceptions and attitudes of both customers and the waiters/waitresses who served them within the same restaurant servicescape. Results from our multilevel analytical approach demonstrate that servicescapes significantly and systematically affect interactions between restaurant customers and the waiters/waitresses interacted with them. The implications of these findings for theory and practice within tourism and hospitality are discussed.

1. Introduction

The servicescape is the manmade space where the key hospitality activities of accommodation (e.g. hotels, camping, etc.), food and beverage provision (e.g. restaurants, bars, etc.), and travel and tourism (e.g. airplanes, cruise ships, theme parks, etc.) take place (Bitner, 1992). The importance of the servicescape for the hospitality industry is highlighted by the large investments on the design and construction of servicescapes aiming to attract customers and keep them loyal. Between 2013 and 2016, 15 US-based hotel-chain renovations amounted to nearly USD 2 billion (Statista, 2016). One such example is the Hyatt hotel conglomerate that recently completed the USD 250 million renovation of the Andaz hotel at San Diego (Statista, 2016; see also Heide, Lærdal, & Grønhaug, 2007 for the importance of hotel design). Similarly for restaurants, McDonald's, in an effort to combat intense competition both from other quick-service and casual restaurants, began in 2011 a massive USD 2.4 billion refurbishment of its restaurants globally with the aim of making them appear upmarket and modern (Paynter, 2010). Starbucks also undertook a massive store make-over with the goal of changing café-goers' perceptions of their coffee shops from a "third-place" to a quick-service, quality takeaway coffeemaker (Walton, 2012).

It is evident, therefore, that hospitality practitioners consider servicescapes a key management tool and employ hospitality servicescapes to induce specific customer behaviors, such as prolonging their stay, spending more money, coming back, and advocating the hospitality facility to other potential customers. Thus, hospitality and marketing researchers have paid significant attention to the role of the servicescape in hospitality and tourism, and have produced a voluminous research output. Our extensive literature search in tourism, hospitality and marketing journals[1] between 2000 and 2017 produced 114 papers (83 in tourism

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[1] We performed a keyword search using words such as servicescape(s), atmosphere, atmospheric(s), environment, etc., in the leading tourism and hospitality journals (*Tourism Management, Annals of Tourism Research, Journal of Travel Research, International Journal of Hospitality Management,*

and hospitality and 31 in marketing journals) assessing servicescape effects in hospitality and tourism contexts. Restaurants, coffee shops, and bars are the most studied hospitality servicescapes, followed by hotel rooms and other hotel facilities, as well as transportation servicescapes (e.g. cruise ships, airplanes, etc.).

Notwithstanding this significant research output on the effects of servicescapes within tourism and hospitality, a scan across the literature clearly shows that the interest of researchers has almost exclusively focused on customers, with only a handful of studies looking into the role of hospitality servicescapes on hospitality employees (see Horng, Chou, Liu, & Tsai, 2013; Wan & Chan, 2013; Yeh & Huan, 2017), a shortcoming that is evident across many other fields in tourism and hospitality research (Baum, Kralj, Robinson, & Solnet, 2016). Nevertheless, as we detail later in the paper, studies in non-hospitality, office-like workspaces demonstrate that office-work environments have an important and systematic effect on employees' emotions, attitudes, and performance (Davis, 1984; Elsbach & Pratt, 2007).

Even more importantly, our review also reveals that there is no study evaluating the simultaneous effect of hospitality servicescapes on both customers and employees, and subsequently, on hospitality customer–employee interactions. This is a critical gap in the literature, since in high-contact service contexts, such as full-service restaurants and hotels, customers and employees interact under the influence of the same servicescape. While hospitality research has already pinpointed the importance of customer–employee interactions

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Cornell Hospitality Quarterly, International Journal of Contemporary Hospitality Management, Journal of Sustainable Tourism, International Journal of Tourism Research, and *Journal of Hospitality and Tourism Research*, as suggested by Koseoglu et al.'s (2016) bibliometric study). In addition, given the strong interest of marketing scholars in servicescapes, we included the top marketing journals (*Journal of Marketing, Journal of Marketing Research, Marketing Science, Journal of Consumer Research, Journal of Consumer Psychology, Journal of Service Research, Journal of Retailing, International Journal of Research in Marketing*, and *Journal of the Academy of Marketing Science*), as well as a number of other marketing journals that are known for publishing research on servicescapes (*Journal of Business Research, Psychology & Marketing, Journal of Service Management, Journal of Services Marketing*, and *Service Industries Journal*), from which we excluded all studies in non-hospitality-related servicescapes (e.g. banking, grocery retailing, apparel retailing, etc.).

for business success (e.g. Choo & Petrick, 2014; van Dijk, Smith, & Cooper, 2011), no study has as yet evaluated whether or not the hospitality servicescape has any effect on these interactions. The review of the literature therefore revealed that hospitality servicescapes systematically affect the approach/avoidance behaviors of hospitality customers, but, to the best of our knowledge, whether hospitality servicescapes affect the approach/avoidance behaviors of customers and employees to each other has not yet been empirically investigated. We have thus no empirical evidence assessing whether servicescapes can affect the quality of the interaction between customers and employees.

Importantly, such an effect must be assessed simultaneously for customers and employees. Capturing such an effect separately for customers and employees, in different facilities or in the absence of interaction, provides insufficient empirical conditions for adequately evaluating whether the servicescape influences customer–employee interactions. To adequately evaluate such an effect, data must be collected from customers and employees that interact under the same servicescape, and the hierarchical nature of such data must be taken into consideration (i.e. data from customers served by an employee are nested within this employee; see Hitt, Beamish, Jackson, & Mathieu, 2007; Kozlowski & Klein, 2000; Mathieu & Chen, 2011).

The present study is the first to assess the feasibility and size of the simultaneous effect of hospitality servicescapes on both customers and employees, and the resulting impact upon the quality of their interaction. In addition, the study provides empirical evidence for the important, yet neglected, indirect effect of the hospitality servicescape upon customers: through the hospitality employees. As we describe in more detail in the literature review section, the organizational behavior and human resource management streams of the literature eloquently demonstrate that workspaces significantly and systematically affect employees' psychological reactions (emotional and cognitive) and job-related behaviors. These studies, however, do not

consider, beyond job performance metrics, the strategic consequences of workspaces on customer satisfaction via the customer-contact employees' emotions, attitudes, and behaviors that the workspaces instigate. Being the first to employ nested data and a multilevel analytical approach, the present study manages to appropriately assess the indirect effects of the hospitality servicescape on customer emotions, attitudes, and behavioral intentions via the effects of the servicescape on hospitality employees.

From a hospitality practitioners' point of view, this study directs managerial attention to the critical role of the hospitality servicescape for both customers and employees. More specifically, the study points to the strategic role of the hospitality servicescape in shaping employee performance, since it demonstrates that servicescapes can be an additional tool – along with rewards, training, and coaching – in hospitality firms' efforts to positively influence employees' customer-related performance. Furthermore, by simultaneously assessing the effect of the servicescape on both customers and employees, this study offers a comparative assessment of the nature and size of the effect of the hospitality servicescape, allowing an assessment of the relative importance of the servicescape for both customers and employees. As such, hospitality managers have a reference point to help them determine the scope of their interventions upon their servicescapes, and to carefully balance the impact upon both customers and employees, especially in cases of conflicting priorities.

The paper is organized as follows. In section 2, we present the theoretical foundation of the conceptual framework, as well as the rationale for the choice of the study constructs along with evidence in support of the hypothesized relationships among the constructs. This is followed by the methodology of the study, the presentation of the analyses and results, and the discussion of the findings and their implications for tourism and hospitality research and practice. The manuscript concludes with the limitations of the study and suggestions for future research.

2. Literature review & research hypotheses

Bitner (1992) proposed one of the first and most widely cited theoretical frameworks in an effort to portray the effects of elements (e.g. temperature, noise, layout, furnishing, signs, personal artifacts, décor, etc.) of the manmade service-consumption environment on customers' internal responses and interactions both with the service offering and the employees responsible for making the service offering available to customers. By integrating a large number of empirical findings from environmental psychology (e.g. Darley & Gilbert, 1985; Holahan, 1986; Russell & Ward, 1982; Stokols & Altman, 1987), Bitner (1992) suggested that servicescapes have a systematic effect on the emotional, cognitive, and physiological responses of both customers and employees. Importantly, echoing Bennett and Bennett (1970) and Forgas (1979), Bitner (1992) suggested that servicescapes are a major determinant of the instigation and duration of social episodes between customers and employees.

Despite its important contribution in directing attention to the effect of servicescapes on both customers and employees, as well as on their interactions within service delivery contexts, such as hospitality and tourism facilities, Bitner's framework suffers from a lack of specificity both in terms of pointing out critical variables (rather than enumerating examples of variables) within the three main building blocks of her framework (i.e., environmental dimensions, internal responses, and behavioral outcomes), and in terms of defining the hierarchical nature of relationships among such critical variables (i.e., there are only high-level connections among groups of variables without however delineating the plausibility and nature of the relationships among specific variables both between and within the proposed groups of variables).

To deal with this specificity shortcomings in Bitner's framework, we build our exploration of the servicescape effects on both customers and employees, on the highly cited within the tourism and hospitality literature framework of Mehrabian and Russell (1974a) (e.g.,

Ali, Kim, & Ryu, 2016; Barnes, Mattsson, & Sørensen, 2016; Bigné, Andreu, & Gnoth, 2005; Dong & Siu, 2013; Duman & Mattila, 2005; Grappi & Montanari, 2011; Han, 2013; Heide et al., 2007; Hew, Leong, Tan, Lee, & Ooi 2018; Kang & Gretzel, 2012; Mason & Paggiaro, 2012; Organ, Koenig-Lewis, Palmer, & Probert, 2015; Su & Swanson, 2017; Yüksel, 2007). Mehrabian and Russell (1974a) suggest that physical environments directly influence emotional reactions such as pleasure and arousal of individuals present in such environments, which in turn directly influence a number of approach/avoidance behavioral responses taking place within such environments, such as staying longer in the place, interacting with other individuals also present in the same place, etc. By putting emotional reactions (i.e., pleasure, arousal, dominance – PAD) at the epicenter of their conceptualization, Mehrabian and Russell (1974a) provide a model with a specific set of variables, interlinked with well-defined hierarchical relationships.

According to Mehrabian and Russell (1974a) pleasure-displeasure, degree of arousal, and dominance-submissiveness (also known as pleasure-arousal-dominance or PAD model) are necessary and sufficient dimensions to adequately define human (affective) emotional responses to servicescape stimuli. Two of the three dimensions, the pleasantness-unpleasantness and arousal dimensions, are also analogous to the semantic differential dimensions of evaluation and activity respectively (Russell & Mehrabian 1977). These two dimensions subsequently formed the basis for the development of the Circumplex Model of Affect (Russell 1980), according to which affective states are not independent of one another, but are instead related to each other in a highly systematic fashion. These interrelated affective states are best represented as a circle in a two-dimensional bipolar space, the axes of which are interpretable as pleasure-displeasure and degree of arousal.

The PAD model has demonstrated overall considerable generality and versatility as a descriptive system for emotions (Valdez & Mehrabian, 1994). Evidence for the suitability of

the pleasure and arousal dimensions appeared very convincing over a broad spectrum of situations; however, evidence for the dominance dimension was more tenuous (Donovan & Rossiter, 1982). Based on theoretical reasons, as well as lack of empirical support, the dominance dimension has been therefore deleted in studies using the PAD model (Donovan, Rossiter, Marcoolyn & Nesdale, 1994; Russell & Pratt, 1980).

In its modified form, using only the pleasure and arousal dimensions, the Mehrabian and Russell (1974a) model is proven appropriate for the study of customer behavior within retail service contexts behavior (Donoval & Rossiter, 1982; Donovan, Rossiter, Marcoolyn & Nesdale, 1994). These dimensions are independent and bipolar: pleasure is a continuum ranging from extreme pain or unhappiness at one end to extreme happiness or ecstasy at the other end, while arousal ranges from sleep through immediate states of drowsiness and then alertness to frenzied excitement at the opposite extreme (Russell & Mehrabian, 1977).
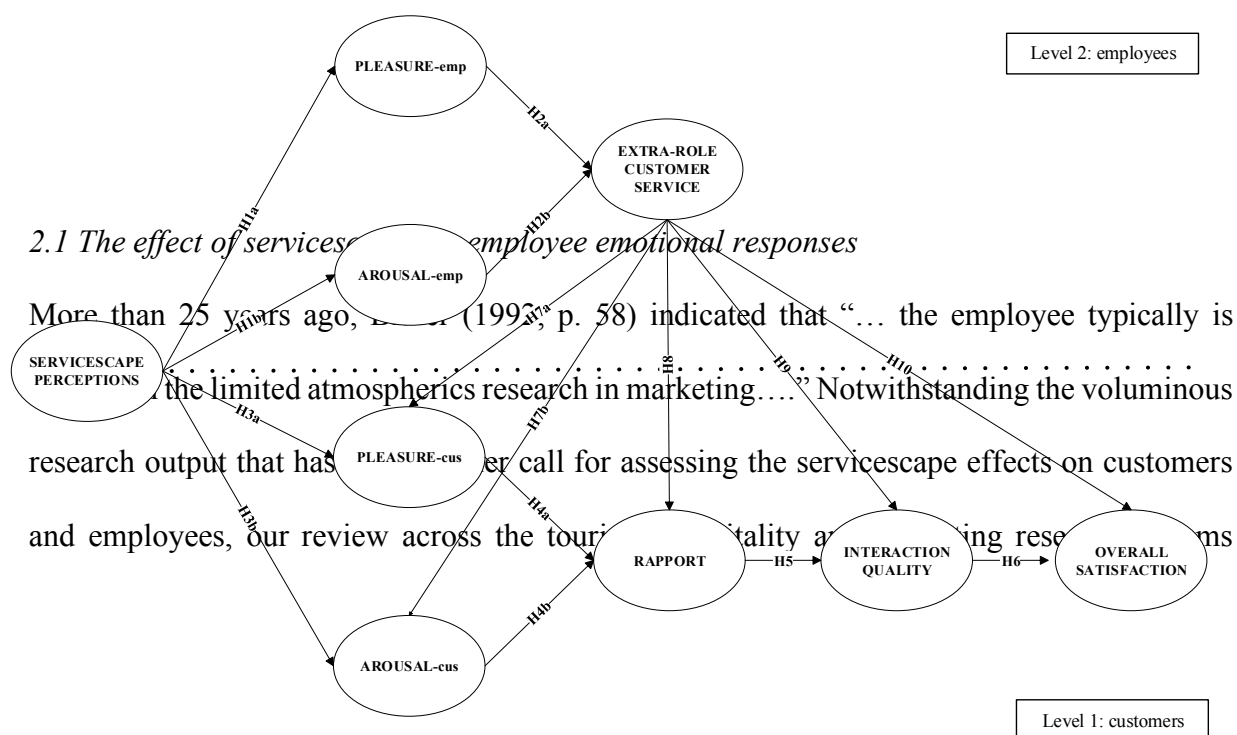
Figure 1 presents the conceptual framework of our study. We closely follow Mehrabian and Russell's (1974a) framework, suggesting that while within hospitality facilities, both customers and employees are under the influence of the same servicescape that directly affects their emotional reactions, comprising pleasure and arousal. These servicescape-triggered emotional reactions affect employees' extra-role behaviors towards customers (i.e., extra-role customer service), while in the case of customers, servicescape-triggered emotional reactions affect customers' perceptions of rapport with employees, which in turn affect customers' perceptions of interaction quality with employees, and ultimately overall satisfaction with the service. In sections 2.1 through 2.5 we provide justifications for the choice of behavioral outcomes for customers and employees, as well as theory-derived arguments regarding the plausibility of the relationships among the variables depicted in our conceptual framework.

To fully incorporate the effect of the servicescape on customer–employee interactions, we also introduce the cross-level effect from employees' extra-role behaviors towards

customers to customers' perceptions of interaction quality with employees. In addition, to account for any potential spillover effects of servicescape-driven employee extra-role behaviors towards customers on both antecedent and subsequent variables of customers' perceptions of interaction quality with employees, our framework incorporates the cross-level effects of extra-role behaviors towards customers on customers' emotions, rapport with employees, and overall satisfaction with the service. In sections 2.1 through 2.5 we provide theoretical evidence in support of the hypothesized relationships among the constructs depicted in our conceptual framework, drawing from tourism and hospitality, marketing, organizational behavior, and human resource management research streams. We begin by presenting evidence in support of the servicescape effects on employees and then on customers. Next we demonstrate the crossover effects from the employee level to the customer level.

Figure 1: Conceptual model of the study

2.1 The effect of servicescape on employee emotional responses

More than 25 years ago, Bitner (1992, p. 58) indicated that "… the employee typically is ignored … the limited atmospherics research in marketing…." Notwithstanding the voluminous research output that has answered her call for assessing the servicescape effects on customers and employees, our review across the tourism, hospitality and marketing research streams

uncovered only a handful of studies (see Horng et al., 2013; Parish et al., 2008; Wan & Chan, 2013; Yeh & Huan, 2017) assessing the servicescape effects on contact employees. Given this lack of empirical findings in the tourism, hospitality and marketing literature, we drew upon the organizational behavior and human resource management literature to complement these few studies with empirical evidence on the impact of manmade environments on employees. Given that organizational behavior and human resource management researchers assess the effects of the man-made physical environment in office spaces where employees, in principle, do not physically interact with customers, to maintain consistency with the terminology in these fields, we use the terms workspace and office space instead of the term servicescape where appropriate.

Within the fields of organizational behavior and human resource management, it is well established that workspaces trigger affective-motivational states (e.g. Staples, 1996). Inalhan and Finch (2004), for example, indicated that office relocations and refurbishments create mostly negative feelings for employees. Office environments that have high temperature and air pollution are linked to anger (Rotton, Frey, Barry, Milligan, & Fitzpatrick, 1979), whereas luminous conditions with variations in fluorescent lamp type and light level (Baron, Rea, & Daniels, 1992) create positive affective states. The use of red color in workspaces increases employees' perceptions of vigor, anger, and tension (Levy, 1984), stimulation (Stone, 2003), stress and anxiety (Kwallek, Lewis, & Robbins, 1988), and happiness and excitement (Plack & Shick, 1974). However, the use of blue and blue-green color in workspaces increases the sense of relaxation (Levy, 1984), calmness, comfort, security, and peace (Plack & Shick, 1974).

A significant body of research in organizational behavior has assessed the impact of the workspace upon employees' stress levels, with stress defined as the combination of high levels of arousal with low levels of pleasure (e.g. Leather, Pyrgas, Beale, & Lawrence, 1998). Several studies (e.g. Ulrich, Simons, Losito, Fiorito, Miles, & Zelson, 1991) have demonstrated that

the presence of plants or even images from nature (Kweon, Ulrich, Walker, & Tassinary, 2008), as well as workspace personalization (Wells, 2000), can have a significant mitigating effect upon employees' stress levels. Similarly, surroundings that mimic nature result in positive emotional responses (Elsbach & Pratt, 2007), nature-like workspaces lead to emotionally restorative feelings (Newell, 1997), and workspaces with living plants result in happier workers (e.g. Dravigne, Waliczek, Lineberger, & Zajicek, 2008).

The studies presented above provide additional evidence to Bitner's (1992) proposed significant effect of workspace stimuli on employees' emotions. Even though none of these studies has specifically examined the effect of workspace on emotional reactions of customer-contact employees (i.e. employees directly interacting with customers, a situation typical within tourism and hospitality), given such extensive evidence on the systematic effect of workspace stimuli on emotional reactions of non-customer-contact employees, we can reasonably expect that such effects will also hold for customer-contact employees. Hence, we suggest:

H1a: The servicescape significantly affects employee pleasure.

H1b: The servicescape significantly affects employee arousal.

2.2 The effect of employee emotional responses on employee extra-role behaviors towards customers

Employee performance comprises both in-role and extra-role performances (MacKenzie, Posdakoff, & Ahearne, 1998). In-role performance refers to the expected employee behaviors (Brief & Motowidlo, 1986), which are derived from explicit norms, job descriptions, and performance evaluation standards in the workplace (Bettencourt & Brown, 2003), while extra-role performance refers to employee behaviors that extend beyond the formal job description

(Brief & Motowidlo, 1986). In this study we focus on employee extra-role rather than in-role behaviors because research suggests that employees' extra-role behaviors are typically the antecedents of high levels of customer satisfaction and loyalty (e.g. Netemeyer & Maxham, 2007), two important and extensively studied outcome variables within tourism and hospitality research. For example, once the doorman at a five-star hotel in Pittsburg overheard a couple that just arrived to the hotel had left home without their personal grooming bag, having received permission from the hotel manager, asked the home keys from the couple and drove eight hours straight from and back to the hotel to bring the bag to the hotel guests. And while this may sound an extreme case of customer extra-role behaviors, other, such as a warm and personalized welcoming to restaurant patrons upon arrival, having them seated within 30 seconds from arrival, providing them with detailed description on the menu items and offering personalized suggestions, filling half-emptied customer classes, and discretely attending their table while they are enjoying their food, are typical examples of employee extra-role behaviors towards customers within hospitality contexts.

Organ and his colleagues have provided one of the earliest and most extensively cited conceptualizations of employee extra-role behaviors (Organ, 1988; Smith, Organ & Near, 1983). Organizational citizenship behaviors (OCBs) are defined as employees' behaviors that are above and beyond those formally outlined in their job descriptions; that are non-compulsory; and that are not rewarded by the organization (Organ, 1988). Smith, Organ & Near (1983) first conceptualized OCB as consisting of altruism and general compliance dimensions, with Organ (1988) providing the construct with its current dimensionality comprising of altruism, courtesy, conscientiousness, civic virtue, and sportsmanship.

A key limitation of this conceptualization of employee extra-role behaviors, however, is that it focuses almost exclusively on behaviors whose key recipients are other employees and/or the organization as a whole, while extra-role behaviors whose key recipients are the

organization's customers are not considered at all. To compensate for this gap, Bettencourt and Brown (1997) put forward the concept of pro-social service behaviors (PSB), which is "intended to promote the welfare of the individual or organization at which they are directed" (p. 41). Bettencourt and Brown (1997) built their conceptualization on the OCB concept proposed by Organ (1988), but they went a step further by proposing as a key dimension of employee PSB the *extra-role customer service,* which they define as "discretionary behaviors of contact employees in serving customers that extend beyond formal role requirements" (p. 41). For the purposes of the present study, given our interest on the effect of servicescape on customer-employee interactions, we employ the construct of *extra-role customer service,* proposed and operationalized by Bettencourt and Brown (1997), for conceptualizing employee extra-role behaviors towards customers.

Services marketing literature has extensively employed the concept of *extra-role customer service*. Netemeyer, Maxham, and Pulling (2005), for example, refer to employees' discretionary behaviors toward the customer, "going the extra mile"– to serve the customer, or engage in behaviors or functions that might result in the improvement of customer service, even if these actions are not part of his/her job description and exceed organizational expectations. Such behaviors are performed voluntarily and spontaneously, without any need to inhibit or suppress any unpleasant thoughts and behaviors (e.g. Brotheridge & Grandey, 2002), and can lead to positive customer outcomes, such as increased purchase intentions (Netemeyer et al., 2005). These behaviors represent "a more authentic action that employees undertake to serve customers, which aligns well with the principal's interest in providing quality service" (Chan & Lam, 2011, p. 613).

Extensive empirical research suggests that employees' emotional states have a strong effect on employees' extra-role behaviors. George and Brief (1992), for example, suggested that positive affect increases the possibility that individuals will assist each other and, therefore,

employee extra-role behaviors are more likely to occur since "feeling good" leads to "doing good" (for a similar conclusion see Ilies, Scott, & Judge, 2006). Given that positive emotions promote close relationships and leverage social integration and social interactions (Waugh & Fredrickson, 2006), employee extra-role behaviors are expected to follow (Bergami & Bagozzi, 2000). Similarly, Lee and Allen (2002) indicated that job affect, rather than job cognitions, is associated with employee extra-role behaviors, and Chiu and Tsai (2006) suggested that the lack of emotional resources negatively impacts employee extra-role behaviors, a finding that is in line with studies suggesting that depleted emotional resources result in an increase in deviant workplace behaviors (Mulki, Jaramillo, & Locander, 2006).

Although specific emotional states have not been investigated, there is ample evidence demonstrating that happy employees, that is, employees in a pleasant emotional state, are more likely to exhibit employee extra-role behaviors (e.g. Avey, Wernsing, & Luthans, 2008; George, 1991; Miles, Borman, Spector, & Fox, 2002). This is because happy individuals tend to engage in empathetic, altruistic, and courteous behaviors as a way to maintain their happiness (Miles et al., 2002). At the same time, given the proactive nature of employee extra-role behaviors (Organ, 1988), employees demonstrating an active interest in, and behaviors towards, customers' needs are expected to maintain, most of the time, high levels of alertness that allow them to quickly identify customers in need of help, and act accordingly. Such readiness suggests that employees exhibiting extra-role behaviors are more likely to experience heightened levels of arousal.

This is the first study linking employee emotional responses to employee extra-role behaviors directed to customers rather than coworkers. Hence, there is no literature directly supporting the proposed effects of employees' emotions on employee extra-role behaviors directed to customers. However, as already presented above, research on employee extra-role behaviors directed to coworkers clearly demonstrate that employee emotions significantly and

systematically influence such extra-role behaviors. At the same time, Bettencourt and Brown (1997) suggest that employees' extra-role behaviors directed towards either customers or coworkers are driven by employees' prosocial motivation, that is, an altruistic interest towards others. Hence, given that the core motivational basis of extra-role behaviors directed to both customers and coworkers is the same (i.e., prosocial, altruistic interest towards others), we infer that the significant effect of employee emotions on employee extra-role behaviors directed to coworkers, extensively documented in the extant literature, will also hold in the case of employee extra-role behaviors directed to customers (i.e., employee extra-role customer service). Therefore, we suggest:

H2a: Employees' pleasure significantly affects employee extra-role customer service.

H2b: Employees' arousal significantly affects employee extra-role customer service.

2.3 The effect of the servicescape on customer emotional responses and customer-employee rapport

One of the earliest and most consistent findings in servicescape research is the effect of the servicescape on customers' emotions, with most studies relying on pleasure and arousal (Mehrabian & Russell, 1974a) for capturing consumers' emotional reactions to servicescapes (Mari & Pogessi, 2013; Turley & Milliman, 2000). Hospitality servicescapes trigger affective processes (Rakić & Chambers, 2012) and environmental characteristics influence customer consumption experiences via the elicitation of positive emotions (Chang, 2016). For example, hotel (Brunner-Sperdin, Peters, & Strobl, 2012; Jani & Han, 2015; Loureiro, Almeida, & Rita, 2013) and restaurant (Kim & Moon, 2009; Liu & Jang, 2009; Jang, Ha, & Park, 2012) servicescapes systematically impact customers' emotional states. These servicescape-induced emotions drive approach/avoidance behaviors (Donovan & Rossiter, 1982; Wirtz, Mattila, & Tan, 2000), such as variety-seeking (Mitchell, Kahn, & Knasko, 1995), satisfaction with the

service (Pinto and Leonidas, 1994; Lin & Worthley, 2012), purchase rate and time spent in the service (Bellizzi and Hite, 1992; Guéguen & Petr, 2006), and loyalty (Summers & Hebert, 2001). We therefore suggest:

H3a: The servicescape significantly affects customer pleasure.

H3b: The servicescape significantly affects customer arousal.

One of the key approach/avoidance behaviors suggested by Mehrabian and Russell (1974a) is customers' affiliation with other individuals present in the servicescape, such as other customers and employees. Along these lines, Bitner (1992) proposed that the effect of the servicescape on customers is incomplete unless one takes into consideration the interaction of customers with employees, which are also under the influence of the same servicescape. However, the servicescape literature has neglected to examine whether, and how, the servicescape affects customer–employee interactions. To close this gap, we consider the construct of rapport between customers and employees. We have opted for rapport as previous studies have extensively demonstrated that customer–employee rapport largely affects the quality of customer–employee interactions (e.g. Nickels, Everett, & Klein, 1983).

For the purposes of the present study, we adopt Gremler and Gwinner's (2000) definition of rapport as a perception of having an enjoyable interaction, characterized by a personal connection between the two interactants. The same authors state that, since rapport is a relationship-based construct, "it is likely to have a greater influence on the evaluation of the interpersonal customer–employee interaction rather than on the final service outcome" (Gremler & Gwinner, 2000, p. 91) and that, regardless of whether or not the customer has repeated interactions with the same service provider, rapport can be established. Rapport, therefore, applies to both recurring and nonrecurring encounters (DeWitt & Brady, 2003;

Gremler & Gwinner, 2000) and we account thus for rapport's impact even for first-time encounters.

During social interaction, "affect may influence unrelated thoughts and judgments through the incidental associations due to temporal and spatial contiguity" (Forgas, 2002, p.4). According to this perspective, experiencing aversive or pleasant environments can produce an affective reaction. For example, Griffitt (1970) has shown that after exposure to excessive heat and humidity, people develop negative judgments about the person first encountered in that environment, which signifies that "evaluative responses are determined by the positive or negative properties of the total stimulus situation" (Griffitt, 1970, p. 240).

Thus, we anticipate that servicescape-induced emotions will affect customers' willingness to interact with other social actors, such as employees. More particularly, given that rapport is associated with enjoyable social interactions between customers and employees, we expect that positive emotional reactions, induced by the servicescape, will have a positive effect on customer–employee rapport. Hence, we suggest:

H4a: *Customer pleasure significantly affects customer–employee rapport.*

H4b: *Customer arousal significantly affects customer–employee rapport.*

2.4 The effects of customer-employee rapport on customer perceptions of interaction quality and interaction quality on customer satisfaction

In high-contact service contexts, such as full-service restaurants and hotels, the service encounter includes any type of contact the customer has with the service and the service firm's employees (Lovelock and Wirtz, 2007) and is primarily a social encounter (see Brady, Voorhees, & Brusco, 2012). The interaction between customers and contact employees results in a service experience that distinguishes one service organization from another (Booms &

Nyquist, 1981), since customers place a high priority on social outcomes or "pleasing relations" (Bradley, McColl-Kennedy, Sparks, Jimmieson, & Zapf, 2010).

Extant literature suggests that positive customer outcomes are easier to achieve when a friendship relationship exists between the two parties (Price & Arnould, 1999) and that customer–employee rapport is a key driver in the development of such relationships (Ewing, Pinto, & Soutar, 2001). Along these lines, Ashford and Humphrey (1993) described rapport "as the sense of genuine interpersonal sensitivity and concern" leading to a good service and Berry (1995) highlighted rapport's ability to create close relationships with the service provider via better service customization. In the context of tourism, Kim and Cha (2002) supported that the service provider's relational orientation can result in higher relationship quality.

Gremler and Gwinner (2008) content that rapport is distinct from the interaction quality dimension proposed by Brady and Cronin (2001), due to the fact that rapport is premised on the development of personal relationships between customers and customer-contact employees, whereas customers perceptions of the quality of interactions with employees are inferred on the basis of the momentary episodes that take place at the time of service delivery. However, Gremler and Gwinner (2008) suggest that rapport is an immediate antecedent and strongly affects interaction quality.

Tourism-, hospitality-, and marketing-research outcomes extensively document employees' influence on customer satisfaction (e.g. Bitner, Booms, & Tetreault, 1990; Gremler & Gwinner, 2000; Lam & Lau, 2008; Sergeant & Frenkel, 2000). Customers' assessment of the quality of their interactions with contact employees is a key determinant of customer satisfaction. Homburg and Stock (2004) found interaction quality to be a critical antecedent of the relationship between salespersons' satisfaction and customer satisfaction. Similarly, Barger and Grandey (2006) demonstrated that employees who smile during a service encounter significantly affect customer satisfaction, and Choo and Petrick (2014) proposed that social

interactions with the service providers influence customer satisfaction. As such, people, objects, technologies, and spaces as constituents of tourism and hospitality servicescapes (van der Duim, 2007) systematically affect customer evaluations (Dong & Siu, 2013) and customer satisfaction (Heung & Gu, 2012; Siu, Wan, & Dong, 2012; Han & Hyun, 2017; Park & Jang, 2014) via rapport and interaction quality. Hence, we suggest:

H5: *Customer–employee rapport significantly affects customer perceptions of interaction quality.*

H6: *Customer perceptions of interaction quality significantly affects customer satisfaction.*

2.5 The cross-level effects of employee extra-role behaviors towards customers on customer emotional responses, customer-employee rapport, customer perceptions of interaction quality, and customer satisfaction

According to Ortony, Clore, and Collins (1988), agents who contributed to or caused an event can produce emotional reactions, while Muller, Tse, and Venkatasubramaniam (1991) suggested that interactions among individuals are replete with emotional episodes. Within consumption contexts, customer-contact employees' behaviors can produce substantial emotional reactions in customers (Menon & Dubé, 2000). This is largely because customer-contact employees act as a key resource in helping customers accomplish their shopping goals (Schneider & Bowen, 1995). Price, Arnould, and Deibler (1995) demonstrated that in service encounters, in addition to in-role behaviors, many extra-role behaviors, such as employees' authenticity, civility, extra attention, and deep understanding, significantly affect customers' emotions. Similarly, many studies within the grocery- and apparel-retail context demonstrate that salespersons' empathy, courtesy, expertise, and friendliness can produce a variety of emotional reactions to customers (e.g. Baker, Grewal, & Parasuraman, 1994). Hence, we suggest:

H7a: Employee extra-role customer service significantly affects customer pleasure.

H7b: Employee extra-role customer service significantly affects customer arousal.

In their meta-analysis on the effect of employees extra-role behaviors in organizational outcomes, Podsakoff, Whiting, Podsakoff, and Blume (2009) demonstrated that customer experience with the company and its offerings is significantly affected by contact employees' extra-role behaviors. More specifically, contact employees who engage in extra-role behaviors appear proactive in approaching and asking customers questions about their needs and subsequently informing them about the company offerings that could fulfill such needs, which leads to customers' enhanced perceptions of rapport (Donavan, Brown, & Mowen, 2004). In addition, Gremler and Gwinner (2000) demonstrated that customers' perceptions of the quality of their interaction with contact employees are largely affected by employees' behaviors (both in- and extra-role). According to van Dolen, Lemmink, de Ruyter, and de Jong (2002), employees who are perceived as friendly, enthusiastic, attentive, and empathetic have a positive effect on customers' evaluations of interaction quality. Furthermore, Barnes (1997) suggested that greater customer-to-employee relationship closeness has a positive impact on customers' overall satisfaction towards the firm, while Lam and Lau (2008) demonstrated that employees' behaviors (both in- and extra-role) affect customer satisfaction with the service encounter. Taken together, past empirical findings suggest that employee extra-role behaviors can directly affect several customer-related outcomes, such as rapport, interaction quality, and overall satisfaction. Hence, we suggest:

H8: Employee extra-role customer service significantly affects customer-employee rapport.

H9: Employee extra-role customer service significantly affects customer perceptions of interaction quality.

H10: Employee extra-role customer service significantly affects customer satisfaction.

3. Methodology

3.1 Sampling

A major gap in the extant servicescape literature across tourism, hospitality, and marketing is the lack of empirical evidence on the simultaneous effect of the servicescape on both customers and customer-contact employees. Collecting data from both customers and customer-contact employees, however, is important, since customer-contact employees' emotions, beliefs, and behaviors towards customers are systematically affected by the servicescape and affect in turn customers' experiences, satisfaction, and re-patronage behaviors via their interactions with them. To close this important gap in the literature, we collected data from both hospitality customers and customer-contact employees. More particularly, we collected data from restaurant customers and the waiters/waitresses who served them during their visits to a full-service restaurant. Full-service restaurants have elaborate servicescapes (Bitner, 1992), with a large and varying number of servicescape elements, capable of attracting customer attention (Lin & Mattila, 2010; Moore, Moore, & Capella, 2005), and allowing for significant customer–employee interactions (Bitner, 1992).

By collecting data from both sides of the service encounter, the study responds to calls emphasizing the importance of collecting data from both customers and contact employees as the most appropriate way to capture the customer–employee interaction (e.g. Homburg & Stock, 2004; Lam, Kraus, & Ahearne, 2010). Studies that focus on the effects of the servicescape on either customers or contact employees are incomplete, since their single-level aggregation does not allow for modeling all information available in the customer–employee interaction. Finally, collecting data from both sides of the service encounter leads to more objective assessment of the customer–employee interaction, since it minimizes single-source

data bias, a major source of common method variance (e.g. Wieseke, Geigenmüller, & Kraus, 2012).

Data collection took place in a large metropolitan city. The most extensive local restaurant guide acted as the index of full-service restaurants in the city. The guide provides information on many restaurant attributes, such as the ethnic origin of the cuisine, the presence of live music, and the average price per person. To minimize any potential effects of the variability in restaurants due to these factors, we included in our sample all restaurants that serve similar dishes, mostly from the local cuisine, with no live music, that rank at the middle level of price per person. This left us with a sample of 253 full-service restaurants that we contacted requesting their collaboration in the study. A total of 147 (58.1% response rate) of these full-service restaurants agreed to participate in the study. To minimize potential day/time biases, we randomized the day and time of data collection across these restaurants.

The multiple-source data of the study was acquired by customer-based data (lower hierarchical level – level 1) nested within a restaurant service worker (higher hierarchical level – level 2). The final sample included one full-time waiter/waitress from each of the 147 restaurants and 716 customers, for a ratio of 4.8 customers per contact employee. The choice of waiter/waitress was made based on fulfilling this ratio of customers per employee, i.e. from every restaurant we randomly selected one waiter/waitress among those serving approximately five different tables at the time of the data collection. Most employees were between 25-34 years old, 57.8% of them were male, and on the day of the study they had been at the restaurant for an average of 268 minutes before completing the questionnaire. All employees reported a full-time work status. Regarding restaurant customers, most (39.9%) were between 19-24 years old, 41.3% of them were male, and on the day of the study they had been in the restaurant for an average of 58 minutes before completing the questionnaire.

Table 1
Sample descriptors

		Employees	Customers
Sample size		147	716
Gender	Male	57.8%	41.3%
	Female	42.2%	58.7%
Age	<18	0.7%	2.4%
	19-24	37.4%	39.9%
	25-34	42.2%	24.6%
	35-44	13.6%	13.0%
	45-54	5.4%	11.7%
	55-64	0.7%	5.3%
	65+	0.0%	3.1%
Time in the restaurant		268 minutes	58 minutes

3.2 Procedures and measures

Restaurant participation in the study was solicited by contacting the restaurant management. The purpose of the survey was explained, instructions were provided, and confidentiality was assured. Next, contact employees (waiters/waitresses) were encouraged to participate during working hours. To avoid social-desirability bias due to the self-report nature of questionnaires, we highlighted the independence of the university conducting the study, the lack of any access to the answers provided by the waiters/waitresses by the restaurant management, and the complete anonymity of all waiters'/waitresses' answers.

At the same time as the restaurant waiter/waitress was answering his/her questionnaire, researchers approached customers who had already paid and were about to leave the restaurant, and who had been served[2] by the specific waiter/waitress. Only one customer was selected from each table, and an effort was made to have the questionnaire answered by the customer

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[2]This included at least two of the following activities: order taking; order delivery; table attendance; and payment. Researchers had spotted the tables that had been served by the restaurant-specific waiter/waitress, as well as the customers at the table who had interacted most extensively with the restaurant specific waiter/waitress.

who had been observed to have most extensively interacted with the specific waiter/waitress. The restaurant waiter/waitress and, on average, five corresponding customers' responses were matched using unique code numbers.

The waiter/waitress questionnaire included measures of servicescape perceptions, pleasure, arousal, extra-role behaviors towards the customer, as well as several demographic and situational variables, such as work experience, years working at the specific restaurant, and how long they had been in the restaurant on that day before the completion of the questionnaire. Customers' questionnaires included the same measures for capturing servicescape perceptions, pleasure, and arousal, but they also included measures of rapport, interaction quality, overall satisfaction, demographics, and several control variables, such as frequency of visits to the restaurant, purpose of visit (i.e. recreation, business), how long they had been in the restaurant before the completion of the questionnaire, and perceived waiting time until served.

To ensure consistency with previous studies and scale robustness, measurement scales were adopted from past studies, with minor adjustments to fit the study context (all scale items for each construct employed in the study are included in the Appendix). For servicescape perceptions, we employed the 14-item verbal measure of information rate developed by Mehrabian and Russell (1974b) (sample items: "varied/redundant"; "simple/complex"; "dense/sparse"). Pleasure and arousal were measured using Mehrabian and Russell's (1974a) battery of 12 items (sample items: "happy/unhappy"; "pleased/annoyed"; "stimulated/relaxed"; "excited/calm"). Employees' extra-role behaviors towards customers were measured using Bettencourt and Brown's (1997) extra-role customer service, five-item scale (sample items: "I often go above and beyond the call of duty when serving customers"; "I willingly go out of my way to make a customer satisfied"). Rapport was captured by Gremler and Gwinner's (2000) 11-item scale (sample items: "in thinking about my relationship with this waiter/waitress, I enjoy interacting with him/her"; "this waiter/waitress has taken a personal interest in me").

Brady and Cronin's (2001) 11-item scale was used to measure interaction quality (sample items: "overall, I'd say the quality of my interaction with this restaurants' waiters/waitresses is excellent"; "the behavior of this restaurants' waiters/waitresses indicates to me that they understand my needs"). Finally, satisfaction with the service encounter was measured with the eight-item scale from van Dolen, de Ruyter, and Lemmink (2004) (sample items: "this was one of the best encounters I could have had"; "this encounter was a good experience"; "I'm satisfied with this encounter"). Study constructs were measured with seven-point Likert-type or bipolar scales (see Appendix).

Employee extra-role customer-service may be affected by customers' tipping behavior (Ferguson, Megehee, & Woodside, 2017; Zeigler-Hill, Besser, Vrabel, & Noser, 2015), which could pose endogeneity concerns for our study (e.g. reverse causality, omitted variables, etc.). Hence, before commencing data collection, we asked managers of 30 randomly selected restaurants from our sample to describe to us how their restaurants handle customer tips. All store managers suggested that they follow the widespread practice used across the country in which the study took place, according to which waiters place all tips received from customers during their shift in a common repository next to the cashier's office and, at the end of the shift, these tips are shared equally by the shift manager among all restaurant personnel (including cooking and cleaning staff) for that particular shift. While this practice cannot entirely account for any potential effects of customers' tipping behavior on employee extra-role customer service (e.g. reverse causality, omitted variables, etc.), the practice of sharing tips may significantly reduce waiters' perceived variability in customers tipping behavior (i.e. size of tips) since, at the end of the shift, all tips are combined and shared equally among all employees: a process that neutralizes both any differences in customers' tipping behaviors and waiters' motivation for performing abnormally high or low extra-role customer service

stemming from the expectation of receiving bigger tips from the customers they serve (Brewster, 2013).

The psychometric properties of all study measures and the correlations among the study constructs for each group of respondents are displayed in Tables 1 and 2. All factor loadings of the latent constructs for each study construct were statistically significant (p<0.05) and above 0.5. Cronbach's alpha and composite reliability (CR) values were higher than 0.7, exceeding the recommended threshold (Bagozzi & Yi, 1988). All average variance extracted (AVE) values exceeded 0.5, and with the single exception of interaction quality and satisfaction, which due to their well-known strong relationship (e.g., Carrillat, Jaramillo, and Mulki, 2009; Szymanski & Henard, 2001), their AVE scores were slightly smaller to their squared correlation, all other AVE scores were larger than the squared correlations between all pairs of constructs (Fornell & Larcker, 1981). In addition, the significance of chi square change ($\Delta\chi^2$) between a model whereby the correlation path between all possible pairs of variables within every sample (i.e., customer and employee), are constrained to one, and the same model unconstrained, were significant, suggesting that the constructs are distinct and that their underlying scales exhibit the property of discriminant validity (Segars, 1997).

We also conducted a confirmatory factor analysis (CFA) to test the discriminant validity of the measures and to assess each construct's unidimensionality, since Cronbach's alpha cannot effectively do so (Hair, Black, Babin, & Anderson, 2009). Comparative Fit and Tucker Lewis indexes (CFI, TLI) values were above 0.90. In addition, Root Mean Square Error of Approximation and Standardized Root Mean Square Residual (RMSEA, SRMR) estimates were less than 0.08, indicating that the constructs fit the data well (Kline, 2005). All these measures indicated that the study's constructs have sufficient reliability, convergent, and discriminant validity, enabling us to proceed to hypotheses testing.

Table 2

Key descriptive statistics, psychometric properties, and correlations for employee variables

Variables	Mean	SD	α	CR	AVE	(1)	(2)	(3)
(1) Servicescape	5.56	0.92	0.891	0.898	0.533			
(2) Pleasure-emp	5.40	1.20	0.933	0.931	0.695	0.728*		
(3) Arousal-emp	4.76	1.29	0.808	0.818	0.534	0.520*	0.700*	
(4) Extra-role customer service	5.54	0.88	0.878	0.898	0.502	0.444*	0.467*	0.372*

*Notes: SD: standard deviation, α: Cronbach's alpha, CR: composite reliability, AVE: average variance extracted, * p<0.05*

Table 3

Key descriptive statistics, psychometric properties, and correlations for customer variables

Variables	Mean	SD	α	CR	AVE	ICC	(1)	(2)	(3)	(4)	(5)
(1) Servicescape	5.17	0.97	0.902	0.899	0.531	0.2093					
(2) Pleasure-cus	4.95	1.07	0.909	0.912	0.635	0.1944	0.703*				
(3) Arousal-cus	3.78	1.25	0.822	0.835	0.559	0.2374	0.435*	0.634*			
(4) Rapport	4.41	1.25	0.895	0.950	0.654	0.2433	0.414*	0.501*	0.404*		
(5) Interaction quality	5.63	1.08	0.965	0.964	0.726	0.2818	0.521*	0.543*	0.303*	0.703*	
(6) Satisfaction	5.69	1.10	0.902	0.956	0.732	0.2708	0.534*	0.541*	0.288*	0.701*	0.901*

Notes: SD: standard deviation, α: Cronbach's alpha, CR: composite reliability, AVE: average variance extracted, ICC: Intraclass correlation coefficient, p<0.05*

Next, given the single-source nature of our data within each group of respondents (i.e. employees and customers), we checked for possible common method variance (CMV), i.e. the degree to which the relationships among variables within the same level of analysis[3] are affected by systematic method bias (Malhotra, Schaller, & Patil, 2017; Podsakoff, MacKenzie, & Podsakof, 2012). Following Richardson, Simmering, and Sturman (2009) suggestions, we employed the CFA marker variable approach (Williams, Hartman, & Cavazotte 2010), and used customers' and employees' "corporate social responsibility beliefs" about the restaurant, which is the degree to which customers and employees believe that the restaurant is socially

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[3] Cross-level relationships such as those from employee extra-role customer service to customers' emotions, rapport, interaction quality, and satisfaction are less prone to CMV owing to the different data sources for the independent (i.e. employees') and dependent (i.e. customers') variables.

responsible (Du, Bhattacharya, & Sen, 2007) as our market variable. This variable has low conceptual relevance to the study's substantive variables (Richardson et al., 2009), and it had the lowest correlation with the study's substantive variables (Lindell & Whitney, 2001). The results of the CFA marker variable approach suggest that none of the loadings associated with the marker variable are related to any of the items in the substantive constructs; thus, CMV does not seriously affect the size of the hypothesized relationships among the study constructs.

4. Analysis and results

4.1 Analytical approach

The research design enabled restaurant customers to be nested within a particular contact employee. Because employee responses could significantly vary, data from customers served by the same employee might be interdependent. The customer nesting within customer employees leads us to the need to use a multilevel approach. In the social sciences, we often measure variables referring to individuals, however these individuals are also grouped into larger units, and each unit may consist of a number of individuals (Raudenbuch & Bryk, 2002). Multilevel modeling enables "the partitioning of total variance into within- and between-group components and allows separate structural models to be specified" (Byrne, 2013, p.378). In the case of customer nested within employees, the total covariance matrix, Σ, "is partitioned into a within-covariance matrix (Σ_W) and a between-covariance matrix (Σ_B)" (Byrne, 2013, p. 378). The within matrix represents covariation and their correlates, but controlling for across employees variation. The between matrix represents the covariation at the employee level (restaurant level as a result of the different servicescape). According to this approach, for each customer the total score is being decomposed into an individual component as well as a group components, and this decomposition leads to separate within- and between-groups computation of within- and between-groups covariance (Hox, 2002).

To determine if the multilevel approach was applicable for our hypotheses testing, the intraclass correlation coefficients (ICCs) and the corresponding design effects had to be examined to ascertain the group-level variance (Duncan, Duncan, Alpert, Hops, Stoolmiller, & Muthen, customer-based data (lower hierarchical level – level 1) nested within a restaurant service worker (higher hierarchical level – level 2) 1997)[4]. ICCs from our data (see Table 3), i.e. the amount of individual-level responses that can be explained by group-level responses, suggest that the proportion of total variance accounted for by between-cluster variation has a sufficient size for a multilevel approach (Bliese, 2000), clearly indicating that an aggregation of the data to the employee level would not be appropriate in further analyzing our data (Muthen & Satorra, 1995).

To test the hypothesized relationships among the study constructs within and across the two levels of analysis (see Figure 1), we estimated a multilevel structural equation model (ML-SEM) using full maximum likelihood on EQS 6.2 (Raudenbush & Bryk, 2002). This approach allowed us to partition the total covariance matrix into a within-covariance matrix (Σ_W) and a between-covariance matrix (Σ_B), controlling for across restaurants servicescape variation.

In this model contact employees are the second/higher level and customers the first/lower level. Although hierarchical data studies often rely on hierarchical linear modeling (HLM) (e.g. Auh, Mengue, Fisher, & Haddad, 2011; Brady et al., 2012), such an analytic approach does not allow modeling both structural and measurement models simultaneously, a limitation that ML-SEM overcomes (Wieseke et al., 2012). ML-SEM allows the evaluation of latent variables with multiple indicators, and provides overall goodness-of-fit indices, which are not possible with HLM. Furthermore, HLM cannot model all paths across the two levels of our data sources, making it impossible to capture the simultaneous effect of the servicescape

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[4] ICC measures the ratio of variance between groups to variance within groups (Tabachnick and Fidell, 2012). Very low ICCs may lead to biased analytic results, unless the multilevel nature of the data is taken into account in the analysis (Raudenbush and Bryk, 2002; Tabachnick and Fidell, 2012).

on both customers and contact employees (Bitner, 1992), a key limitation of the servicescape literature, which this study aims to overcome.

4.2 Results

Fit statistics for our original structural model were poor (χ^2=35,981.253, df=4,023, CFI=0.789, TLI=0.803, RMSEA=0.101, SRMR=0.095). Closer inspection suggested that the effects of employee extra-role customer service on customer pleasure (γ=0.09) and arousal (γ=0.42) are non-significant (p>0.05). Therefore, H7a and H7b are rejected. We then estimated our original model without the relationship between employee extra-role customer service and customers emotions. This structural model had an acceptable fit (χ^2=33,768.147, df=4,007, CFI=0.912, TLI=0.908, RMSEA=0.044, SRMR=0.071). Coming to the hypothesized relationships (see Table 4), the servicescape has a significant effect on contact employees' pleasure (γ=0.77) and arousal (γ=0.65), fully supporting H1a and H1b. In turn, both pleasure (γ=0.55) and arousal (γ=0.18) significantly affect contact employee extra-role customer service, supporting H2a and H2b. For customers, again as expected, the servicescape significantly affects customers' pleasure (γ=0.68) and arousal (γ=0.48), supporting H3a and H3b.

Table 4
Summary of effects

Relationships	Standardized estimates	Hypotheses	R^2
Servicescape (e) → Pleasure (emp)	0.77*	H1a	0.683
Servicescape (e) → Arousal (emp)	0.65*	H1b	0.485
Pleasure (e) → Employee extra-role customer service	0.55*	H2a	0.297
Arousal (e) → Employee extra-role customer service	0.18*	H2b	
Servicescape (c) → Pleasure (cus)	0.68*	H3a	0.543
Servicescape (c) → Arousal (cus)	0.48*	H3b	0.177
Pleasure (c) → Rapport	0.19*	H4a	0.332
Arousal (c) → Rapport	0.57*	H4b	
Employee extra-role customer service → Rapport	0.18*	H8	

Rapport → Interaction quality	0.86*	H5	
Employee extra-role customer service → Interaction quality	0.24*	H9	0.879
Interaction quality → Customer satisfaction	0.85*	H6	
Employee extra-role customer service → Customer satisfaction	0.88*	H10	0.826

*Note: * p<0.05*

Subsequently, customers' pleasure ($\gamma=0.19$) and arousal ($\gamma=0.57$) significantly affect customers' rapport with contact employees, verifying H4a and H4b, respectively. In turn, rapport significantly affects interaction quality ($\gamma=0.86$), and interaction quality significantly affects customer satisfaction ($\gamma=0.85$), supporting H5 and H6. Finally, concerning the hypothesized cross-level effects of contact employees' behavioral outcomes on customers' responses, employee extra-role customer service significantly affects rapport ($\gamma=0.18$), interaction quality ($\gamma=0.24$), and customer satisfaction ($\gamma=0.88$), supporting H8, H9, and H10.

5. Discussion and implications

Over 25 years ago, Bitner (1992) called for a broadening of the scope of research into the role of servicescapes in terms of:

a) context (service industries in addition to retailing);

b) actors (employees in addition to customers); and

c) social interactions (among actors present in such environments).

However, our review within the tourism and hospitality literature, combined with other reviews from the marketing literature (Mari & Poggesi, 2013; Spence, Puccinelli, Grewal, & Rogeveeer, 2014; Turley & Milliman, 2000), indicates that while there has been an extensive broadening of research output in terms of context, the study of the effects of servicescapes on customer-contact employees has been slim (for exceptions, see Horng et al., 2013; Parish et al., 2008; Wan & Chan, 2013; Yeh & Huan, 2017), and the role of the servicescape on

customer–employee interactions, one of the key outcome variables in Bitner's (1992) highly cited framework, has not been appropriately examined so far. Relatedly, while the organizational behavior and human resource management research streams have extensively examined the effect of workspaces on employees, to the best of our knowledge, none of these studies considered customer-contact employees, or took place in hospitality servicescapes (Davis, 1984; Elsbach & Pratt, 2007).

Motivated by the desire to contribute towards closing these gaps, the current study is the first to ascertain the degree to which the effects of servicescapes on customer-contact employees affect the way customer-contact employees interact with customers in hospitality settings. Importantly, our study demonstrates this based on data collected from customers and employees interacting under the same servicescape, and by using a multilevel analytical approach, given the hierarchical (nested) nature of our data.

Our findings confirm past results (Horng et al., 2013; Parish et al., 2008; Wan & Chan, 2013; Yeh & Huan, 2017) regarding the significant effects of servicescape on customer-contact employees' emotional reactions. Furthermore, our study enriches research in tourism, hospitality, marketing, organizational behavior, and human resource management by uncovering that servicescapes affect (via emotional reactions) an important employee extra-role behavior, namely extra-role customer service. In this regard, the present study significantly enriches the limited research on the effects of servicescapes on customer-contact employees.

With regards to customers, at first, our results confirm the well-established significant effects of servicescapes on tourism and hospitality customers' emotional reactions (pleasure/arousal). However, contrary to expectations, our results suggest that extra-role customer service does not affect customers' emotional responses. However, this may be due to the degree of sensitivity of the instrument we employed for capturing the emotional responses of both customers and customer-contact employees. Machleit and Eroglu (2000) have

demonstrated that Mehrabian and Russell's (1974a) pleasure-arousal instrument, which we employed in the current study, captures somewhat less of the variance of customers' emotions at the time of consumption than other well-established measures of emotional experience (e.g. Izard, 1977). For example, customers that come across employees that go the extra mile to serve them beyond the call of duty are more likely to experience surprise and joy, two discrete emotions (Izard, 1977) that may be obscured by a measure that captures only emotional valence (i.e. negativity or positivity of the experienced emotions). On the other hand, studies on customer delight (e.g. Finn, 2005) demonstrate a significant relationship between positive disconfirmation and emotional valence. Since this finding directs our discussion to the long-standing debate over the nature and measures of emotions (e.g. Posner, Russell, & Peterson, 2005), in section 6 we acknowledge this limitation of our study and invite future researchers to reassess and refine the plausibility of the relationship between employee extra-role customer service and customers' emotional reactions.

Notwithstanding the non-significant effect of employees' extra-role customer service on customers' emotional reactions, our results demonstrate that employees' servicescape-affected, extra-role customer service significantly affect customers' perceptions of rapport and quality of interactions with employees, as well as satisfaction. Importantly, these effects supplement the recorded effects resulting from customers' direct experience with the servicescape, which the extant literature documents at length (Mari & Poggesi, 2013; Spence et al., 2014; Turley & Milliman, 2000). Thus, the results of the current study provide empirical evidence for the dual-route of servicescape effects on customers (i.e. directly though experiencing the servicescape themselves, and indirectly through the impact that the servicescape has on customer-contact employees).

Furthermore, by incorporating simultaneously the effects of the servicescape on both customers and customer-contact employees, the current study made the assessment of the effect

of the servicescape on customer–employee interactions possible, a determinant that the evolving literature on customer–employee relationships has neglected, and a key outcome in Bitner's (1992) framework that the burgeoning servicescape literature in tourism, hospitality and marketing has overlooked. Finally, by adding empirical evidence to other recent findings (Horng et al., 2013; Parish et al., 2008; Wan & Chan, 2013; Yeh & Huan, 2017), our study enriches organizational behavior and human resource management research regarding the role of servicescapes on the psychological mechanisms and job-related behaviors of customer-contact employees (Davis, 1984; Elsbach and Pratt, 2007). Our study, however, goes a step further by capturing customers' reactions to servicescape-induced customer-contact employees' job-related behaviors, such as extra-role customer service.

From a practical standpoint, the results of our study point to some useful managerial implications. While the design and construction of hospitality facilities, such as restaurants and hotels, are primarily affected by customer considerations (e.g. convenience, enjoyment, relaxation, increased consumption, return to the site, etc.), as well as operational concerns (e.g. ease of preparation of the dining area, energy consumption, synergies with existing infrastructures, costs, etc.), the empirical evidence that emerged from our data suggests that such design decisions also have a significant effect on customer-contact employees' behaviors towards customers and, as such, managers of tourism and hospitality facilities may need to reconsider their priorities when it comes to the design and construction of tourism and hospitality servicescapes. Cognizant of these effects, Mayo Clinic, the leading Rochester-based medical provider, has, since 2005, initiated the "Jack and Jill rooms" innovation project, which aims to improve every aspect of the patient–physician interaction, with servicescape-related interventions considered as key for the initiation, development, and long-term maintenance of the patient–physician–clinic relationships (Dickson et al., 2011).

Our results also demonstrate that servicescapes affect customers and employees' emotional valence (i.e. pleasure) at about the same degree (standardized beta coefficients are 0.68 and 0.77, respectively). Our results also highlight that the effect of the servicescape on employees' arousal is way larger to that of customers (standardized beta coefficients are 0.65 and 0.48, respectively). From the perspective of a full-service restaurant manager, this appears to be an ideal combination, since the servicescape creates high pleasure and medium levels of arousal for customers, which fits well with the type of activity (eating), and high pleasure and high arousal to employees, which again fits well with employees' job description (serving customers with courtesy). Hence, while awaiting replication, our results tentatively suggest that servicescape effects are comparable across both customers and employees.

Finally, our results suggest that servicescapes can act as an effective managerial tool within tourism and hospitality, along with rewards, coaching, and training, for fostering customer-contact employee productivity, collaboration, and innovativeness. Within the more traditional office contexts, several technology companies, such as Yahoo and Samsung, have already started experimenting with the transformation of office spaces from the cube type to open-space designs, with the aim of boosting collaboration among their employees, which is a strong antecedent of creativity and innovation, both of which are critical success factors for technology firms (Waber, Magnolfi, & Lindsay, 2014). Likewise, given the significant effects of tourism and hospitality servicescapes on customer–employee interactions that our study demonstrates, tourism and hospitality managers can use servicescapes to foster collaboration between customers and employees with the aim of improving certain aspects of the service delivery and through this reduce the amount of customer complaints and dysfunctional behaviors, all of which are critical success factors in tourism and hospitality (Yüksel, Kilinc, & Yüksel, 2006).

6. Limitations and suggestions for future research

As this is the first effort towards closing an important gap in the servicescape literature – whether and how servicescapes affect customer–employee interactions – this study has several limitations. First, our findings and suggestions are based on a single hospitality context (full-service restaurants), which are characterized by more extensive customer–employee interactions compared, for example, to drive-through, quick-service restaurants, where customer–employee interactions are kept to a minimum. Similarly, all restaurants in our sample were representative of what Bitner (1992) defined as an elaborate servicescape (i.e. the physical aspects of the space are more complex), with economy class airplane cabins being representative of much leaner servicescapes. Hence, future research could explore combinations of elaborate/lean tourism and hospitality servicescapes and high/low customer–employee interaction conditions, both to confirm the results of our study and to produce a more complete picture of the effects that our study demonstrate across a wider number of tourism and hospitality facilities.

Another limitation of our study is associated with the measurement of the emotional reactions of both customers and customer-contact employees. Our choice of Mehrabian and Russell's (1974a) instrument for capturing emotional experiences derived from the hospitality servicescape was driven both by the relevance of the measure with our empirical context (i.e. it was originally developed for capturing environmental effects), its broad and consistent use in the extant servicescape literature, and by the evidence on the consistency of circumplex-type measures of affect in comparison to measures of basic emotions (e.g. Posner et al., 2005). However, as Machleit and Eroglu (2000) demonstrated, circumplex-type measures appear less sensitive for capturing emotional reactions resulting from servicescapes, which may have accounted for the non-significant relationship of employees' extra-role customer service with customers' emotions. In addition, while evidence suggests that employees' emotional reactions

significantly affect customers' emotional reactions (e.g. Hennig-Thurau, Groth, Paul, & Gremler, 2006), our study could not account for such effects, since we do not measure employees' displayed emotional reactions, but only their felt emotional reactions. As such, we encourage future research in tourism and hospitality to employ measures both for basic and for displayed emotions as a means for more comprehensively capturing customer-employees' servicescape-probed emotional reactions.

Furthermore, while our study offers a novel insight to interested researchers in organizational behavior and human resource management by demonstrating the significant effect of servicescape on employees' extra-role customer service, it would be interesting to explore the degree to which servicescape effects upon the more routine, in-role, employee behaviors have an enhancing effect on customer–employee interactions. Along these lines, one such addition would be to explore the degree to which the hospitality servicescape affects employees' job satisfaction and work engagement, and whether or not these effects translate into enhanced customer–employee interactions. Finally, interested researchers within tourism and hospitality could explore whether servicescape-probed employee psychological and behavioral outcomes can affect additional customer outcomes, such as collaborative, complaining, and dysfunctional behaviors.

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Appendix: Measures employed in customers and/or employees questionnaires

Verbal measure of information rate (customers and waiters/waitresses) (Mehrabian & Russell (1974b) (seven-point bipolar scale):

Varied/Redundant
Simple/Complex
Novel/Familiar
Small scale/Large scale
Similar/Contrasting
Dense/Sparse
Intermittent/Continuous
Usual/Surprising
Heterogeneous/Homogeneous
Uncrowded/Crowded
Asymmetrical/Symmetrical
Immediate/Distant
Common/Rare
Patterned/Random

Pleasure/Arousal (customers and waiters/waitresses) (Mehrabian & Russell, 1974a) (seven-point bipolar scale):

Unhappy/Happy
Depressed/Contented
Despairing/Hopeful
Unsatisfied/Satisfied
Frustrated/Pleased
Bored/Relaxed
Unstimulated/Stimulated
Calm/Excited
Lethargic/Frantic
Gloomy/Fidgety
Sleepy/Wide-awake
Uncrowded/Jam-packed

Extra-role customer service (waiters/waitresses) (Bettencourt & Brown, 1997) (seven-point Likert scale):

I voluntarily assist customers even if it means going beyond the requirements of my job.
I help customers with problems beyond what is expected or required of me.
I often go above and beyond the call of duty when serving customers.
I willingly go out of my way to make customers satisfied.
I frequently go out of the way to help a customer.

Rapport (customers) (Gremler & Gwinner, 2000) (seven-point Likert scale):

In thinking about my relationship with this waiter/waitress, I enjoy interacting with him/her.
This waiter/waitress creates a feeling of "warmth" in our relationship.
This waiter/waitress relates well to me.
In thinking about my relationship, I have a harmonious relationship with this waiter/waitress.
This waiter/waitress has a good sense of humor.
I am comfortable interacting with this waiter/waitress.
I feel like there is a "bond" between this waiter/waitress and myself.
I look forward to seeing this waiter/waitress when I visit the restaurant.
I strongly care about this waiter/waitress.
This waiter/waitress has taken a personal interest in me.
I have a close relationship with this waiter/waitress.

Interaction Quality (customers) (Brady & Cronin, 2001) (seven -point Likert scale):

Overall, I'd say the quality of my interaction with this restaurants' waiters/waitresses is excellent.
I would say that the quality of my interaction with this restaurants' waiters/waitresses is high.
You can count on the waiters/waitresses at this restaurant being friendly.
The attitude of this restaurants' waiters/waitresses demonstrates their willingness to help me.
The attitude of this restaurants' waiters/waitresses shows me that they understand my needs.
I can count on this restaurants' waiters/waitresses taking actions to address my needs.
This restaurants' waiters/waitresses respond quickly to my needs.
The behavior of this restaurants' waiters/waitresses indicates to me that they understand my needs.
You can count on this restaurants' waiters/waitresses knowing their jobs.
This restaurants' waiters/waitresses are able to answer my questions quickly.
This restaurants' waiters/waitresses understand that I rely on their knowledge to meet my needs.

Encounter Satisfaction (customers) (van Dolen et al., 2004) (seven-point Likert scale):

This was one of the best encounters I could have had.
This encounter was exactly what I needed.
I am satisfied with this encounter.
I have truly enjoyed this encounter.
This encounter was a good experience.
I am not happy with this encounter (reverse coded).
In comparison to what I expected, I found the encounter very satisfying.
In comparison to what I expected, I found the waiter/waitress fulfilling all my needs.

Demographic and usage descriptors:

Gender, age, time in the restaurant until completion of the questionnaire, work experience (employees), years working at the restaurant (employees), frequency of visit to the restaurant (customers), purpose of visit (recreation or business) (customers).