The Role of Physical Environments on Customer Engagement in Service Industries

DISSERTATION

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Abstract

In service industries, place acts as a stage for customers to engage with a firm, which also has a strong effect on behavioral outcomes. In order to enhance customer management, this study analyzed the effects of the physical environment on customer satisfaction and customer engagement. The concept of customer engagement was investigated based on the notion that customers are motivated to stay in a setting that provides them with a sense of satisfaction through contact with elements of the firm's physical environment. Adopting Mehrabian and Russell's (1974) Stimulus – Organism – Response (S-O-R) paradigm, the overall objectives of this study were as follows: to develop measures of the elements of the physical environment, customer satisfaction, and customer engagement in the context of the hospitality industry; to estimate the effects of different elements of the physical environment on customer satisfaction, and to estimate the effects of customer satisfaction on customer engagement.

For the analysis, exploratory factor analysis (EFA) was performed to determine how the questionnaire item responses were related. Latent variables were labeled "social," "public design," "room design, and "ambience" for physical environment elements, "satisfaction" for customer satisfaction, and "willingness to suggest" and "word-of-mouth (WOM)" for customer engagement. Then, confirmatory factor analysis (CFA) was performed to confirm how well the factor structure fit the data. CFA indicated that the

seven extracted factors were satisfactory, vigorous and appropriate for further analysis. Thereafter, structural equation modeling (SEM) was used to examine the proposed relationships among variables. Specifically, while social and room design were found to be significant antecedents of customer satisfaction, public design and ambience were not. With respect to behavior, it was found that while satisfied customers were likely to advertise the hotel to others through WOM behavior, they were less likely to offer suggestions for improvements in service.

Several theoretical implications can be drawn from this study. It broadens Baker's (1986) original model for the physical environment by partitioning the design element into two separate factors: "public design" and "room design". These two design factors had different effects on satisfaction, highlighting the importance of treating design not as one vague concept, but rather as complementary, but separate factors requiring individual scrutiny.

This study also has valuable implications for service industry practitioners and managers. The findings provide managers with practical implications that may inform and aid their understanding of customer engagement, and help them identify factors that will enhance that engagement. Findings suggest that room design and social elements of the physical environment contribute to customer satisfaction. However, merely satisfying customers with these elements of the physical environment is not enough to derive

customer engagement. In order for the customers to be engaged, there has to be an ongoing interaction between two parties as well.

In conclusion, this study investigated the structural relationship between elements of the physical environment, customer satisfaction, and customer engagement. The final results suggested that social and design elements of the physical environment had significant effects on customer satisfaction, which led to positive customer engagement behaviors, including the customers' willingness to suggest, as well as to enhance, WOM marketing.

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CHAPTER 1: INTRODUCTION

Background

The shift from product-centric structures and strategies to those that are customer-centric has been acknowledged increasingly with the emphasis to "go above and beyond" or "go the extra mile" when providing service (Brady & Cronin, 2001). This evolution in customer-centric service has been demonstrated to be an effective method for enticing customers (Goodfellow, 2014), and large firms implement different marketing strategies to make their products and services even more customer-centric (Nammir, Marane, & Ali, 2012). Recently, the concept of customer engagement has emerged as a management perspective and is gaining popularity because of its beneficial outcomes (Verhoef, Reinartz, & Krafft, 2010). However, customer engagement could be managed more effectively if its antecedents were better understood.

Firms have begun to realize that retaining, sustaining, and nurturing their customers offers them a competitive advantage (Anderson, Fornell, & Mazvancheryl, 2004; Rego, Billett, & Morgan, 2009). Until recently, the concept of "customer experience" had received the greatest attention as more firms have become customer-centric (Berry, Carbone, & Haeckel, 2002). However, as "customer experience" is based on past experience, some researchers have questioned whether customer experience can explain and predict current customer behavior adequately (Hollebeek, 2011). More recent

research has begun to suggest that the concept of "customer engagement" contributes better to the understanding of customer retention than does customer experience (Bowden, 2009). Customer engagement puts more focus on the interactive processes in the on-going relationship between the customer and firm (Aaker, Fournier, & Brasel, 2004).

Through this ongoing interactive process, customer engagement has been found to generate higher sales and profitability for firms, in addition to better corporate performance (Brodie, Hollebeek, Jurić, & Ilić, 2011). Van Doorn, Lemon, Mittal, Nass, Pick, Pirner, & Verhoef (2010) also suggested that engaged customers can play a crucial role in affecting the firm through behavioral outcomes such as customer-to-customer (C2C) interactions, word-of-mouth (WOM) activities, and blogging. Similarly, Brodie et al. (2011) added to this discussion that engaged customers could affect a firm's marketing by providing recommendations and referrals about its products and services, as well as by taking part in the development of new products and services.

For example, Starbucks is well known for using customer engagement as their main marketing strategy. According to Belicove (2010), Starbucks uses nearly every internet social medium to encourage customers to interact with their firm in enjoyable and engaging ways. With Starbucks' Mobile App, customers can use their smart phones as a Starbucks card with which they can pay for an order, check their balances, and even receive rewards such as free coffee refills. In addition, through various social media, Starbucks motivates its customers to give their opinions for product development, for example, by selling the special Love Drawing cup that uses drawings that its customers

have uploaded online while participating in the event. These are some typical examples of customer engagement.

For customers, value can be provided not only in terms of products and services, but also by creating a pleasant physical environment that better engages them (Dawson, Bloch, & Ridgway, 1990). To cope with the intangibility of service, customers often depend on tangible evidence in the physical environment in their evaluations of service (Bitner, 1992; Zeithaml & Bitner, 1996). In service industries, place acts as a stage for customers to engage with the firm, which also has a strong effect on customers' overall perceptions (Bitner, 1992; Parish, Berry, & Lam, 2008). Indeed, because production and consumption occur simultaneously in a service environment, the supporting role of the environment becomes part of the service itself (Fottler, 2000).

Parvatiyar and Sheth (2000) described relationship marketing as a key instrument to initiate customer engagement by creating and enhancing mutual value between two parties. In relationship marketing, firms attempt to identify information that is relevant in retaining their customers, and also increase customer value and profitability (Ashley, Noble, Donthu, & Lemon, 2011). For example, the online environment provides customers with different features that create opportunities for them to better interact with the firm. It is anticipated that the same should apply in the service context as well. The physical environment in which customers interact with a firm should offer numerous venues to encourage engagement with the firm. It is not surprising that many firms are striving to provide exclusive brands and unique products and services in order to draw customers' attention (Goodfellow, 2014). However, regardless of the fact that firms

invest an enormous amount of money on the appeal of the physical environment, evidence suggests that this investment has failed to yield the outcomes desired (Noble & Phillips, 2004; Reinartz & Kumar, 2002; Rigby, Reichheld, & Schefter, 2002). It may be that not all customers are satisfied with the physical environment that a firm offers. Cases such as this will likely result in negative aspects of customer engagement.

Higgins (2006) proposed that the strength of engagement is related to the degree of motivational force, which changes the intensity of attraction or repulsion from an object. Although diverse opinions exist regarding the conceptualization of engagement in terms of its cognitive, emotional, and behavioral aspects, this study focused primarily on the behavioral aspect of customer engagement. Therefore, the definition of customer engagement is based on the idea that customers are motivated to stay in a setting that provides them with a sense of comfort and satisfaction through contact with elements of the firm's physical environment. This is consistent with Brodie et al.'s (2011) view that customers are "prosumers" who not only receive a service, but also co-produce the service experience with the firm and the service provider through focal interactions. This view emphasizes the importance of the effect of the physical environment as an antecedent to customer engagement. This can be accomplished by manipulating the environment (Turley & Chebat, 2002). For example, a study conducted by Wakefield and Baker (1998) showed that elements of the physical environment, such as design, music, layout and décor, were related positively to the length of stay at a given venue.

Kumar, Aksoy, Donkers, Venkatesan, Wiesel & Tillmanns (2010) view engagement as that which promotes a customer's participation and interaction. Indeed,

good service cannot be achieved simply with a greeting, a smile, the provision of assistance, or the solution to a problem (Goodfellow, 2014). Identifying factors that may influence customer engagement such that they become more involved with a firm's products and services are even more important for the firm, especially if these factors can have a significant effect on planning investments. Higgins (2006) proposed that hedonic attributes of the service can contribute to the strength of engagement. Therefore, this study incorporated satisfaction as a mediator between the effects of the physical environment and customer engagement. This study was designed to better measure hedonic attributes of the physical environment elements in a service setting. The framework for this study is based on Mehrabian's and Russell's (1974) S-O-R model.

Purpose of Study

In the relationship marketing literature, there is limited understanding of the factors that lead to customer engagement (Ashley, Noble, Donthu, & Lemon, 2011). Further, few studies have explored the concept of customer engagement in service industries, especially in hotel settings. Research on how elements of the physical environment can influence customers' behavior, such as engagement, is also sparse. Especially absent is research that incorporates a framework to determine how multiple elements of the physical environment might affect customer engagement in a hotel context. Compared to the relative importance of physical environments in customers' consumption settings, there is, surprisingly, a lack of empirical evidence that supports the role of the physical environment in customer engagement. In this research, I proposed

that physical environments play an influential role in engaging customers by achieving customer satisfaction.

The purpose of this research was to identify which aspects of a hotel setting enable customers to better engage with the firm. Specifically, in this study, I explored which elements of the physical environment can lead to customer engagement for service organizations by scrutinizing specific effects that different types of such elements have on customer engagement. This study adopted Mehrabian's and Russell's (1974) S-O-R paradigm that emphasizes the relationship between customer engagement, its antecedent, physical environment elements and customer satisfaction. Thus far, although the S-O-R paradigm has proven valuable in explaining relationships between intervening organism variables (O) and response variables (R), the appropriate stimulus (S) taxonomy still remains largely unstudied (Donovan & Rossiter, 1982). Therefore, contrary to most previous studies, which have tended to focus on the R variable of the S-O-R paradigm (Lin & Liang, 2011), this study emphasized the S variable instead.

With the S-O-R paradigm, this study examined specific stimuli, organisms, and responses related to customer engagement. A stimulus refers to any of the environmental stimuli that elicit individuals' internal reactions to that environment. In a service setting, such as a hotel, physical environment elements act as the stimuli (S) to customers' responses (Lin & Mattila, 2010). In terms of organism (O), the original model stated that customers can experience three different types of emotional states: pleasure; arousal, and dominance. However, in this study, only customer satisfaction will be investigated in terms of the emotional state. There is evidence that the organism (O) can influence

behavioral outcomes—the response (R; Donovan & Rossiter, 1982). In this study, customer engagement was the specific behavioral outcome of interest.

Given that studies of customer engagement have demonstrated its beneficial outcomes, determining S variables that influence O and in turn bring about changes in R in service settings is deemed necessary. Moreover, there are few instruments available to measure customers' perceptions and expectations with respect to the physical environment (Raajpoot, 2002). Therefore, the mediating role of customer satisfaction in forming the relationship between the physical environment elements and customer engagement should also be considered. Through investigation of the previous research on the concepts of physical elements, customer satisfaction, customer engagement, and statistical analysis of hotel customer responses, this study will augment our understanding of the relationships among these elements. This approach will serve as a unifying framework, as these matters have not been addressed adequately in previous studies.

Research Objectives

With reference to the existing academic and practical understanding of customer engagement, these are the objectives of this research:

1. To develop measures of physical environment elements, customer satisfaction and customer engagement in hospitality service contexts;

2. To estimate the effects of different elements of the physical environment on customer satisfaction;

3. To estimate the effects of customer satisfaction on customer engagement.

CHAPTER 2: LITERATURE REVIEW

Customer Engagement

In the service literature, much effort has been made to identify the potential antecedents of customers' behavioral outcomes (Brady & Cronin, 2001). Understanding how customers engage with a firm through its physical environment should help the firm better formulate the design of that environment. The fundamental question is, "What is the potential role of the physical environment in creating customer engagement?" What are the ways in which the physical environment can influence customers' engagement during their consumption of services? Little research to date has examined key issues related to these questions, such as how different elements of the physical environment taken together shape customers' perceptions of the environment that, in turn, influence their engagement.

According to Bitner (1992), physical environments can affect individuals' psychological states in such a way that positive or negative internal responses to the physical environment can either enhance or degrade the quality of interactions between customers and service providers. For example, when customers become engaged deeply with the physical environment, it is likely that they will value the service provided in the physical surroundings highly, resulting in greater satisfaction (Lam, Chan, Fong, & Lo, 2011).

Conceptual Foundations of Engagement

To gain a better understanding of customer engagement, the concept of "engagement" will first be explained before the concept of "customer engagement." For the past two decades, the term "engagement" has been used in diverse academic disciplines, including: psychology (social engagement); organizational behavior (employee engagement); education (student engagement); sociology (civic engagement); and advertising (advertising engagement) (Hollebeek, 2011; Saks, 2006). It is only recently that the concept of customer engagement has begun to emerge in the field of consumer behavior.

Although different academic disciplines address the concept of "engagement," what should be noted here is the fact that the definition and scope of engagement are so diverse across disciplines that it brings little clarity to the interpretation of the concept (Little & Little, 2006). The first problem lies in that there are different dimensions to engagement. While some approach engagement as uni-dimensional, others view it as multidimensional (Brodie, et al., 2011). Regardless of whether it is uni-dimensional or multidimensional, engagement consists of at least one of these three elements: cognitive; emotional (affective), and physical (behavioral) engagement. The second problem lies in the fact that the terms researchers used to refer to these cognitive, emotional, and/or physical elements may differ by discipline, as well as in the context in which the customer engagement takes place (Brodie et al., 2011).

For example, in some literature, engagement is viewed simply as the ordinary interaction between two parties or between a party and an object. In the service literature,

Brodie et al. (2011) suggested that customer engagement is a psychological state that is formed during customers' interactive processes while experiencing a firm's offering. In other words, they regard the interaction between a firm and its customers to be the core engagement feature in terms of cognitive, emotional, and behavioral aspects. This conceptualization is consistent with service-dominant logic that considers a customer to be part of value co-creation formed through customer-to-firm (C2F) interactions (Vargo & Lusch, 2004). In this sense, every customer seems to be regarded as an engaged customer as long as s/he uses the products and services provided by a firm. This approach is also seen in other disciplines. In social psychology, Achterberg, Pot, Kerkstra, Ooms, Muller, & Ribbe (2003) defined social engagement as involvement with and response to social stimuli during social activities. In marketing, Whelan and Wohlfeil (2006) studied customer engagement in the context of event marketing and proposed that it uses informal dialogues and a person's first-hand brand experiences to promote engagement.

Conversely, other literature has suggested that engagement involves more than the mere interaction between two parties. Calder and Malthouse (2008) considered engagement to possess a deeper connection between the customer and the object (firm) than mere liking. These are some examples of definitions based on this view. In the organizational literature, Frank, Richard and Taylor (2004) defined employee engagement as employees' willingness to put their best efforts into job performance, including intellectual endeavor, and extra time and energy which correspond to cognitive, affective and behavioral factors (Frank, Finnegan, & Taylor, 2004). Kahn (1990) considered employee engagement to be a process of engaging and disengaging with a

particular job, physically, emotionally, and cognitively. Comparing these contrasting views on the conceptualization of engagement (mere interaction between two parties versus more than that), an important question can be raised: Which perspective should customer engagement adopt?

As is evident from the definitions above, different scholars approach the dimensions of engagement in varied ways. In terms of customer engagement, it should be noted that, compared to student engagement or work engagement where participants need to be present and absorbed in the act of doing something, either intentionally or unintentionally, this is not the case for customer engagement. It is entirely the customers' choice whether or not to interact with a firm. Furthermore, one unique characteristic of customer engagement is that not only positive outcomes exist, but there may also be negative outcomes. Some of these might include customers carrying out revenge activities, as well as filing public actions against a firm (Bijmolt et al., 2010; Brodie et al., 2011; Van Doorn et al., 2010). Customers might also spread negative opinions about the firm to its potential customers (Kumar et al., 2010). These forms of negative customer engagement can be detrimental to a firm. Consequently, in order to cope with these issues, the behavioral aspect of customer engagement is of major interest, as it is concerned with how customers involve themselves voluntarily with a firm's products and services. Therefore, the behavioral element of customer engagement must be investigated.

In order to do this, it is necessary to first identify how customers can engage with a firm before the concept of customer engagement can be conceptualized and measured.

As service organizations stress co-creation with their customers, they must increase their understanding of how customers engage with them and what they can do to increase customer engagement (Brodie et al., 2011). Considering the relatively new construct of customer engagement, the theoretical foundations of engagement will be presented first by reviewing the concept as it is defined in various disciplines.

Psychology (Employee Engagement)

In psychology, the concept of work and role engagement deals with explaining behavior based on the state of mind that affects it (Vivek, Beatty, & Morgan, 2012). For example, Watkins et al. (1991) looked at role engagement as a way to understand its relationship with role relevance in school psychology. They also defined role engagement based on the degree which different role behaviors are conducted or practiced by school psychologists.

The theoretical foundation of engagement in psychology is attributed to Kahn (1990), who first used the term "work engagement." He defined work engagement as the simultaneous interrelationship between employment and self-expression with respect to task- related behaviors. According to him, employees experience three psychological conditions for engagement: meaningfulness (how meaningful my performance will be); psychological safety (how safe is it to do the work), and availability (how capable am I to do the work). Throughout this process, Kahn suggested that people engage themselves with a particular work performance physically, emotionally and cognitively and then disengage when they dismiss themselves from work. Following Kahn's (1991) work, May, Gilson and Harter (2004) also investigated the determinants and mediating effects

of employee engagement in relation to meaningfulness, psychological safety and availability and found that meaningfulness was related most strongly to engagement. However, not all researchers have addressed employee engagement in a multidimensional context where all three factors are included. Some only focus on two of the three elements, the cognitive and/or emotional (Bejerholm & Eklund, 2007; Matthews, Warm, Reinerman-Jones, Langheim, Washburn & Tripp, 2010).

Further, some researchers have used different terms to refer to different dimensions of engagement. For example, Rothbard (2001) characterized role engagement as attention and absorption. Similarly, Schaufeli et al. (2002) characterized the dimensions of engagement as absorption (deeply engrossed, focused and happy), vigor (full of energy and mental resilience), and dedication (enthusiasm and inspiration with a sense of significance).

Organizational Literature (Organizational Engagement)

In organizational behavior, the concept of engagement attempts to explain behavior related to organizational citizenship and commitment as a means to predict the financial performance of organizations (Saks, 2006). In organizational behavior, engagement is defined as task behaviors that promote a better connection with work, as well as good relationships with other workers (Kahn, 1990). To explain employees' engagement, organizational engagement is generally expressed physically, cognitively, and emotionally (Frank, Finnegan & Taylor, 2004; Kahn, 1990; Luthans & Peterson, 2002).

With regard to the three aspects of organizational engagement, while Frank et al. (2004) and Saks (2006) defined organizational engagement with an emphasis on employees' willingness to put extra effort into their performance, Luthans and Peterson (2002) focused more on creating meaningful connections with others. Similarly, Macey and Schneider (2008) also considered organizational engagement in a multidimensional context, although they used different terms to refer to these three aspects, specifically state, trait, and behavioral.

Education Literature (Student Engagement)

In educational psychology, student engagement is defined as students' commitment, motivation, and investment in their education, together with a sense of belonging to their institution. Some scholars view student engagement from a multidimensional view. Examples include: Coates (2007) examined student engagement from a multidimensional viewpoint that included active learning, participation, and a feeling of being legitimized; Bryson and Hand (2007) distinguished different levels of engagement based on various elements, such as the task given and the course of study, and London, Geraldine and Shauna (2007) used different terms to refer to these three aspects of engagement, specifically, institutional, situational, and individual.

However, some other scholars have viewed student engagement from a uni-dimensional viewpoint. For example, Zhu (2006) defined student engagement from a cognitive viewpoint, focusing on the process of analyzing and synthesizing information as a means to critique and reason through diverse opinions to make decisions. However, some researchers have examined student engagement from a behavioral viewpoint that

considers engagement as students' participation in behaviors: study; practice; analyze, and solve problems, as well as obtain feedback (Kuh, 2003; Robinson & Hullinger, 2008).

Sociology Literature (Social Engagement)

As social engagement is concerned with how one voluntarily becomes involved in working in such places as organizations, communities, or public affairs, social psychology addresses social engagement primarily in a behavioral context (Hogan, Andrews, Andrews, & Williams, 2011; Jennings & Stoker, 2004). Accordingly, Achterberg et al. (2003) also defined social engagement in a behavioral context as individuals' participation in social activities through interactions with others and taking the initiative to respond to social stimuli that elicits a stronger sense of initiation and involvement (Achterberg et al., 2003). Jennings and Stoker (2004), on the other hand, examined civic engagement in a multidimensional context that included all three elements (cognitive, emotional and behavioral) in their discussion of people's involvement in voluntary work, as well as their participation in social networks.

Advertising Literature (Advertising Engagement)

In the advertising field, advertising engagement has been addressed extensively with regard to its relationship to the effectiveness of advertising (Calder & Malthouse, 2005; Calder & Malthouse, 2008; Calder, Malthouse, & Schaedel, 2009; Wang, 2006). Advertising engagement can be defined as the total of customers' motivational experiences when interacting with a media product (Calder & Malthouse, 2008). While some view advertising engagement as cognitive (Douglas & Hargadon, 2001), others

view it as subconscious and emotional (Heath, 2007). While Douglas and Hargadon (2001) conceptualized engagement as a cognitive process, Heath (2007) described it as a process in which feeling and emotion are used to process an advertisement. Marci (2006), on the other hand, sees advertising engagement as the psychological response to a media stimulus that is both cognitive and emotional. Marci (2006) used the term "audience synchrony" to describe cognition, and the term "intensity" to describe emotion.

Marketing Literature (Customer Engagement)

Customer engagement is considered to be an emerging concept (Mollen & Wilson, 2010), and it is only since 2005 that the concept of customer engagement has emerged within the academic marketing and service literature (Brodie et al., 2011). Given that this is a relatively new concept in marketing, different terms for "customer engagement" have been used in the literature, such as "customer brand engagement" (Hollebeek, 2011) and "customer engagement behaviors" (Van Doorn et al., 2010), which were followed by "consumer engagement" (Vivek, 2012). Given that the concept of customer engagement is still being developed, there seem to be differing and sometimes conflicting views regarding its conceptualization (Kumar et al., 2010).

Similar to other disciplines, definitions of customer engagement in the marketing literature range from uni-dimensional to multidimensional. As mentioned previously, the engagement construct consists of at least one of three dimensions—cognitive, emotional and physical. Some researchers focus on tripartite engagement, which has emerged only recently within the customer engagement literature (Brodie et al., 2011; Hollebeek, 2011; May, Gilson, & Harter, 2004). For example, Hollebeek (2011) defined customer

engagement as the customers' state of mind, in terms of motivation, brand and context based on specific levels of the cognitive (cognition), emotional (affect), and physical (behavioral) intention to interact with the brand.

Those researchers who define customer engagement as a psychological state focus on the dimensions of cognition (cognitive) and affect (emotional) (Bowden, 2009; Higgins & Scholer, 2009). For example, Bowden (2009) viewed customer engagement as a psychological process that encompasses both cognition and affect, which then generate customer loyalty.

The behavioral dimension, in particular, has received considerable attention from the uni-dimensional perspective (Van Doorn et al., 2010). Vivek, Betty and Morgan (2011) viewed customer engagement as a behavior and focus on the intensity of customers' participation in an organization in terms of engaging in activities and offerings. Similarly, Bijmolt et al. (2010) also addressed customer engagement in terms of behavior other than purchasing, including WOM, customer co-creation, and complaint behavior. However, Pham and Avnet (2009) took a different approach and defined customer engagement from a cognitive viewpoint, as something that can be drawn from a series of actions/withdrawals from a target object.

In this study, customer engagement focuses on the behavioral (physical) dimension. The rationale for a behavioral approach to customer engagement is two-fold: first, it adds interpretive value, because managerial implications are derived more easily. Second, as in employee engagement, which frequently has been treated as a behavioral construct, customer engagement also reflects the psychological state of people who

engage in discretionary efforts. Although the main subjects, either employees or customers, may be different, the psychological state of engaging remains useful, in that customers make discretionary efforts to select and use services by engaging with a firm.

Behavioral (Physical) Engagement

Most studies of customer engagement have been based on the behavioral perspective (Bijmolt et al., 2010). According to Van Doorn et al. (2010), behavioral aspects of customer engagement go beyond transactions and lead to customers' motivations. Vivek, Beatty and Morgan (2010) regard customer engagement as a behavior with a focus on specific actions and interactions. In accordance with Van Doorn et al. (2010), besides purchase behavior, customers may be involved in other types of behaviors, which could be either positive or negative. Customers demonstrate varying behavioral outcomes that are considered to be similar to customer engagement (Van Doorn et al., 2010).

As one of the most prevalent non-transactional behaviors, WOM has been studied for some time and it is known to play a crucial role in disseminating information about products and services (Kumar et al., 2010; Luo, 2009). Much evidence has confirmed that customer WOM acts as one of the most important influences in the relationship between customers and firms (Brown, Barry, Dacin, & Gunst, 2005; Reichheld, 2003; White & Schneider, 2000). With a plethora of market-generated communications, customers consider WOM to be a trustworthy source of information about services being offered or a particular service provider to be considered (Ng, David, & Dagger, 2011).

However, not only direct human interaction, as in traditional WOM, but also the rise in popularity of the online environment as a social phenomenon, offers increased access to a wide variety of information (Kumar et al., 2010; Libai et al., 2010). The ability of the internet to transmit knowledge and ideas has favored the creation of efficiency-driven exchange markets (Melián-Alzola & Padrón-Robaina, 2006). For example, it became easier for customers to distribute their feedback about previous experiences with a product or service widely and is known to have significant effects on the behaviors of both transmitters and receivers (Kumar et al., 2010). Especially with the increasing prevalence of social media that allow customers to connect with others, including both other customers and firms, this type of non-transactional customer behavior is becoming ever more important (Verhoef et al., 2010).

Through engagement behavior, customers create value not only for themselves, but for other customers as well. For example, the online platforms provided by a firm (websites or online booking engines) that allow customers to post their statements about the firm's products and services act not only as a co-creation tool for the customers themselves, but also provide an important source of information to other customers (Shaw, Bailey, & Williams, 2011). By posting, customers may feel proud and valued in that they are able to provide valuable information to others (Grissemann & Stokburger-Sauer, 2012). These may include positive behavioral patterns, such as posting a positive comment regarding a product or service on a blog, or negative behavioral patterns, such as posting a complaint about a product or service (Van Doorn et al., 2010). In this way,

customers are able to share their opinions, preferences, or experiences about the firm, brands, or products and services with others (Singh & Cullinane, 2010).

Above all, the behavioral aspect of customer engagement encompasses participating in the firm's activities, such as providing recommendations or referrals for service improvements, and voicing opinions (Bijmolt et al., 2010; Brodie et al., 2011). Consistent with service-dominant logic, customers' feedback can contribute to service offerings (Grissemann & Stokburger-Sauer, 2012). Thus, customers can be regarded as a firm's partial employees and assume some responsibility, given that they co-create services (Xie, Bagozzi, & Troye, 2008). Even after the transactional engagement of purchasing the product or service, customers may continue to engage with the firm to provide positive or negative feedback regarding the products and services purchased (Sampson & Froehle, 2006).

Empowering customers to participate in value co-creation activities provides firms with direct input from customers who may take part in the firm's product or service development as a way to better meet their expectations (Singh & Cullinane, 2010). For example, one of the ways customers continue to engage with a firm is by signing up for company mailing lists in order to receive ongoing communication. Indeed, engaging customers in these types of activities can help the firm tailor its products and services to meet customers' specific needs and wants, as well as enabling new innovative service offerings to emerge (Fuchs & Schreier, 2011; Grissemann & Stokburger-Sauer, 2012). For example, Franke and Schreier (2010) found that products that are designed by

customers were more highly preferred compared to standardized products offered by the firm, thereby increasing customers' attachment to the product.

Customer Engagement in Service Contexts

In many sectors of the service industry, a firm's top priority is to manage customer relationships as one of the primary methods to attract and retain customers (Babin & Attaway, 2000). Accordingly, firms are investing an enormous amount of money to implement customer management (CM; Bohling et al., 2006). Therefore, identifying factors that either promote or diminish customer engagement in terms of relationship marketing is of great importance to firms who have to make decisions regarding investments (Ashley et al., 2011). In fact, one means of implementing customer management is through promoting customer centricity (Verhoef et al., 2010). Indeed, due to the fact that service production and consumption occur simultaneously, the supporting role of the environment in a service business becomes part of the service itself (Fottler, 2000).

Kumar et al. (2010) described engagement as the factor that creates customer interaction and participation, in the process forming a more meaningful and deeper relationship between the customer and the firm over time. Furthermore, Lusch and Vargo (2010) indicated that the way in which customers interact to co-create their experience may be seen as the act of engaging (Lusch & Vargo, 2010). Van Doorn (2010) made a similar statement, that customer engagement is also known to encompass customer value co-creation. That is, particular customer behaviors have been found to be motivated by their specific value co-creative experiences in interactions with the firm (Brodie et al.,

2011). For example, Brodie et al. (2011) linked marketing relationships and interactive service experiences to examine customer engagement. In their model, customer engagement occurs through customers' value co-creation with a focal object provided by the firm, as customer engagement is assumed to occur when a specific context is provided. Similarly, they also linked customer experience, service encounters and servicescape to explain customer engagement. They regard customers as "prosumers" who not only receive a service, but co-produce the service experience with the firm and the service provider through focal interactions. Therefore, the concept of co-creation should be understood, as it can be considered a derivative of customer engagement.

Customer Value Co-creation

Customer value co-creation, as part of customer engagement behavior, has become a focus in the literature (Shaw et al., 2011; Verhoef et al., 2010). Value co-creation emphasizes customers' involvement in the creation of the core offering itself. Pralahad and Ramaswamy (2004) proposed that customer value co-creation differs by individual, as the co-creation process is dependent on them. Although the service might take place in a certain environment created and controlled by the firm, the degree of engagement during consumption still differs in ways that are beyond the firm's control (Verhoef et al., 2009). Thus, it can be said that the experience is dependent upon the degree of customer engagement throughout the process (Prahalad, 2004). In this sense, Bijmolt et al. (2010) divided customers into two types, either "engaged-prone customers" or "other customers," given that not all customers engage at the same level. The more

engaged the customers are, the more likely the firm is to meet their needs, leading to a beneficial outcome (Bitner, Faranda, Hubbert, & Zeithaml, 1997).

In order for firms to promote engagement, customer interaction and participation may be required (Kumar et al., 2010). Previously, the majority of studies have examined customers' responses in a controlled retail environment (Verhoef et al., 2009). However, in the service context, due to the fact that production and consumption coincide or take place simultaneously, control is more difficult to achieve. As a means to facilitate optimal customer management, the concept of value co-creation began to emerge during the 1990s and has steadily gained interest from scholars since then (Gronroos, 2008). Edvardsson et al. (2005) defined service as a perspective, rather than an activity, of value creation with regard to marketing service offerings. To achieve optimal customer management, customization of the service is critical. In response, many firms have gone through structural changes in terms of their value chain to reflect the issue of customization during the service delivery process (Pine, 1993). As a result of this phenomenon, increasing attention has been given to customers' value-generating processes (Gronroos, 2000). Through a successful value co-creating process, firms can achieve benefits in the form of increased profits, and efficient productivity with reduced risk and lower costs (Bendapudi & Berry, 1997; Bendapudi & Leone, 2003; Ostrom et al., 2010; Prahalad & Ramaswamy, 2004).

Value co-creation can be argued to be related directly to customization. Customers engage in this service production process by becoming part of the service. According to Ballantyne and Varey (2006), there are three strands of value-creating

activities: relating; communicating, and knowing. Of these three, communicating during the interaction supports value co-creation by encouraging creativity and innovation. Accordingly, customers' perceptions of value reside in an interactive preference experience that is formed during the process of service delivery, which has the potential for a value-creating experience (Holbrook, 1994). From the firm's perspective, value co-creation enables the firm to customize service offerings by implementing the operation of one-to-one marketing (Etgar, 2008). On the other hand, from the customers' perspective, by engaging, they adopt a crucial role in value co-creation by taking part in the firm's innovation process in co-designing and co-producing products and services (Bijmolt et al., 2010; Van Doorn et al., 2010). For example, customers may choose to participate in value co-creation engagement behaviors by assisting and coaching service providers, giving suggestions about how to improve the consumption experience, or even helping other customers.

This practice of value co-creation is often implemented in hospitality industries. In the hospitality context, the concept of value co-creation as a means of customer engagement is particularly important, as customers have to participate and connect with the firm in order to engage (Pine & Gilmore, 1998; Shaw et al., 2011). Due to the uniqueness of a service setting where the customer most often has to participate to achieve an outcome, the extent of engagement during this process would influence a firm's outcome variables significantly (Grissemann & Stokburger-Sauer, 2012). Today's customers have access to more information and can learn more readily about options available to them; therefore, they understand more clearly what they need and want now

than in the past. In this regard, the role of hospitality firms is to provide the supporting environment to satisfy their customers (Brown, 2008). Thereafter, it is up to the customers to co-create their own unique experiences. As a result, this shift in the composition of offline and online customers will require firms to expand their service offerings to meet the diverse needs and expectations of their customers.

It is likely that customer engagement has several antecedents. However, only a few empirical studies to date have analyzed customer co-creation and its role in customer engagement in a service context (Auh, Bell, McLeod, & Shih, 2007; Carbonell, Rodríguez-Escudero, & Pujari, 2009; Shaw et al., 2011). Moreover, how firms can better engage in the customer value co-creation process remains unclear, despite the fact that value co-creation is of great worth (Hoyer, Chandy, Dorotic, Krafft, & Singh, 2010). From this perspective, it can be assumed that a firm should provide its customers with the information and resources necessary for them to engage in co-creation activities. Thus, to assist our understanding of the behavioral aspects of customer engagement, a coherent and systematic conceptualization of their antecedents must be considered (Van Doorn et al., 2010). The following are proposed antecedents of customer engagement based on Mehrabian's and Russell's (1974) S-O-R model: stimuli (representing the physical environment) and organism (representing customer satisfaction). Therefore, this study proposed that elements of the physical environment are stimuli and how customers perceive and interpret those stimuli can lead to customer satisfaction, which in turn, promotes and leads to customer engagement.

The Proposed Antecedent of Customer Engagement

Physical Environment

Theoretical Background for Physical Environment

Investigations of the antecedents of customers' behavior are ongoing (Brady & Cronin, 2001). There exist multiple theories to explain the relationship between stimuli and customer engagement, including social exchange theory, inference theory and the theory of affordance. According to social exchange theory, customers tend to portray positive feelings and behaviors toward a product if they perceive that they would acquire benefits from what is offered (Blau, 1964). In inference theory, customers tend to make assumptions about the unknown based on the information that is available to them from cues offered (Baker, Parasuraman, Grewal, & Voss, 2002; Huber & McCann, 1982). Finally, with respect to the theory of affordance, the physical environment is perceived as a meaningful entity if it is a venue that provides information to customers (Gibson, 1986).

Hollebeek (2011) suggested that these perspectives on relational benefits can be consistent with the interactive nature of customer engagement. According to Bowden (2009), two-way interactions between both a specific subject (C2F) and object (products and services offered by the firm) are a necessity in creating engagement. Drawing on these theories, there is a need to investigate which environmental stimuli lead to individuals' engagement as a positive outcome.

Gestalt Approach

Before identifying the role of the physical environment, the Gestalt approach will be introduced, as it underlies the discussion of physical stimuli in this chapter. The Gestalt approach assumes that the whole entity dominates the perception of each of its parts (Lin & Worthley, 2012). Thus, when a customer enters a physical environment, his/her satisfaction with that environment is not based on any single physical stimulus, but rather on a variety of stimuli that an individual organizes cognitively into groups and from which s/he derives holistic images (Bitner, 1992; Lin, 2004; Lin, 2010; Lin & Mattila, 2010). This is due to the fact that when a person looks at an object or physical environment, s/he tends not to absorb every detail (Loken & Ward, 1990). Rather, multiple parts of a physical environment are thought to be configured into an holistic evaluation of the service setting (Bitner, 1992; Lin & Mattila, 2010).

Kotler (1973) was the first person to introduce the concept of atmospherics. Atmospherics are defined as the effort to design a physical environment in a way that provokes customers' emotional reactions as a means to enhance positive behavioral outcomes (Kotler, 1973). Since then, many researchers have investigated the influence of physical environment stimuli on customer behavior (Bitner, 1992; Turley & Milliman, 2000). While most studies have focused on the effect on customer behavior of one or two particular aspects of the environment, such as music (Sweeney & Wyber, 2002), light (Summers & Hebert, 2001), or aroma (Spangenberg, Crowley, & Henderson, 1996), only a few studies have taken a holistic approach and focused on the overall effect of the physical environment on customer behavior (Bitner, 1992; Lin, 2004; Mattila & Wirtz,

2001; Tombs & McColl-Kennedy, 2003). Researchers have begun to note that in order to study the influence of the physical environment on customer behavior, a wider variety of physical environment elements should be incorporated in order to gain a deeper understanding of the dynamics behind the effect of the physical environment on customer behaviors (Kaya & Erkip, 1999; Lee & Brand, 2005; Tombs & McColl-Kennedy, 2003). For example, Rafaeli and Vilnai-Yavetz (2004) claimed that the elements of physical environments need to be viewed from a holistic perspective. Therefore, this study relied on the Gestalt approach to evaluate customers' reactions to stimuli in the physical environment.

Previous researchers have found that customers have a priori expectations that certain elements of the physical environment should fit together in order to meet with their satisfaction (Green, Wind, & Jain, 1972). As is clear in some retail settings, a physical environment can promote a holistic approach through mixing and matching of various elements, such as layout, lighting, furniture, and ornamentation, to convey the firm's core message to customers rather than leaving individual elements to act as a background to a variety of products and services the firm is offering (Frampton, 2006; Kotler, 1973). For example, The Body Shop has the nickname "Green Box," as they use the color green extensively to convey the store's image of a green modular system (Kent & Stone, 2007). This example supports the notion that customers expect the physical environment to fit the overall image of products or services, as the orchestration of these physical environment elements has a substantial effect on customers' evaluations of the products or services (Mattila & Wirtz, 2001; Orth, Heinrich, & Malkewitz, 2012).

This Gestalt approach seems to be especially appropriate in a service environment where customers tend to base their responses on a holistic view of the environment after experiencing various stimuli (Lin, 2004; Lin, 2010; Oakes & North, 2008). Based on this reasoning, this study assumed that multiple aspects of the physical environment, especially those that encompass both the physical environment and the service provider, have a joint effect. Building on extant research, this study proposed that a service firm's physical environment elements influence customer satisfaction, which in turn, produces customer engagement as a behavioral outcome.

The Role of Physical Environment as a Stimuli

Customer engagement is considered highly experiential in nature (Brodie et al., 2011). According to Higgins (2006), engagement is a second source of experience, in that engagement can only occur after customers decide whether or not they are willing to undergo the experience. Van Doorn et al. (2010) suggested that customer engagement is likely to be formed as a result of multiple antecedents. One of the antecedents of customer engagement is satisfaction. In order to better engage customers, a firm can design its products or services in such a way that they not only meet the basic level of satisfaction, but also add a pleasurable component to increase the level of satisfaction (Higgins & Scholer, 2009).

Consequently, the physical environment where the services are being provided may also be considered another important antecedent. Service firms such as hotels, restaurants, and hospitals are considered to be places that have complex physical environments, in that a thoughtful consideration of design, layout, and interior

decorations are necessary to achieve the firm's intended objectives (Bitner, 1992; Lockyer, 2003; Ryu & Jang, 2008). Customers choose the service firm with an expectation that they will receive the service expected and that the firm will deliver their core service promises (Brady & Cronin, 2001). However, for customers to evaluate a service, they are only susceptible to its tangible aspects, such as physical setting and employees. Pantouvakis (2010) supported the crucial influence of the physical environment in customer satisfaction by claiming that poorly-designed physical environments tend to decrease customer satisfaction.

For example, a customer who checks in to the hotel wishes to take a rest in the hotel lobby. It is likely that this customer will look for a chair in which to sit. In this case, the extent of this customer's engagement could either be the firm's basic ability to fulfill a need (a place to sit down) or to exceed that need by providing a soft, comfortable couch. Similarly, customers' evaluations of their stay at a hotel might be based not only on whether they have their reservations honored or have a bed to sleep in, but once those basic requirements are met, subtle cues such as the décor of the hotel or the attitudes of the service providers may have a greater influence on how they assess their satisfaction, leading to future behavioral intentions of engagement (Brady & Cronin, 2001). Thus, the physical environment acts as a source of information for customers and as a potential contributing influence on customer satisfaction (Bitner, 1992a; Sharma & Stafford, 2000; Wakefield & Blodgett, 1994). Therefore, given that customer satisfaction can be achieved through allocation of physical environment elements, it can be assumed that the process

of customer engagement can be enhanced through the indirect contribution of the physical environment to achieve the desired outcome (Higgins & Scholer, 2009).

The role of the physical environment becomes even more important when customers are likely to interact with the service setting for a longer period of time (Wakefield & Blodgett, 1994). During service interactions, customers tend to digest and process physical environment elements into a set of feelings to a greater extent than service providers often realize (Lam et al., 2011). For example, Crane and Clarke (1988) found that customers rely on the design of the interiors of banks, hospitals and hair salons in order to assess the scope and nature of their services. Physical environments are regarded as something that can be managed (Bagozzi, 1986). Despite this, most of the decisions about the design of the physical environment are known to be made without that knowledge (Chebat & Dubé, 2000).

To study the influence of physical environment elements on customers' behavioral outcomes, scholars have used different terms. Some of those used commonly are: physical environment (Baker, 1986); atmospherics (Kotler, 1973); servicescape (Bitner, 1992a); store environment (Roy & Tai, 2003), and service environment (Tombs & McColl-Kennedy, 2003). Researchers have also used different approaches to categorize the elements of the physical environment where the service is being provided. Some of the typologies widely-used in the study of the physical environment are those of Baker (1986) and Bitner (1992). For example, Baker (1986) categorized the elements of a physical environment into social, design and ambient factors. Similarly, Bitner (1992)

categorized the elements of a physical environment slightly differently, as ambient cues, layout and functionality, and signs, symbols and artifacts.

In environmental psychology thus far, a plethora of research has dealt with the relationship between physical setting and individuals' behaviors. Among the earliest is research by Mehrabian and Russell (1974), who developed the S-O-R paradigm. Mehrabian and Russell (1974) delineated the influence on an individual's emotional state of the stimuli in a physical environment, which in turn affects behavioral responses. Since then, many researchers have applied their model to study the physical environment in retail settings (Dawson, Bloch, & Ridgway, 1990; Donovan & Rossiter, 1982; Sherman, Mathur, & Smith, 1997). Donovan and Rossiter (1982) and Donovan et al. (1994), who adopted Mehrabian's and Russell's model, also supported the notion that a physical setting affects consumers' emotional states, which in turn affects purchasing behavior. However, in both of these studies, the stimulus factors only consisted of man-made physical environment elements, and did not include service providers. Similarly, Bitner's (1992) typology also did not take into consideration the social environment of a facility, but rather limited servicescape only to the built environment.

As can be seen above, social aspects have been largely ignored in the conceptualization of physical environments (Tombs & McColl-Kennedy, 2003). In service settings, service can be quite complex as it constitutes simultaneous interaction with both service providers and surrounding environmental factors (Cox, Cox, & Anderson, 2005). Hence, for many service firms, the influence of social relationships between customers and service providers is also important—sometimes more so than

physical environments (Tombs & McColl-Kennedy, 2003). More researchers are realizing the need for the inclusion of a social element when looking at the physical environment of service industries. Berry, Wall and Carbone (2006) likened service to performance, rather than objects; service performance is the primary source of value creation for a service industry. Similarly, because of the intangible nature of service, where production and consumption occur interchangeably, Brody and Cronin (2001) stated that the behaviors of service providers can be considered the most important of all physical environment elements.

As mentioned above, Baker (1986) proposed that customers evaluate the physical environment in service settings according to ambient, design, and social factors. Baker's typology is particularly relevant in the hotel context, as a hotel is a place where services are created through interactions with service providers; therefore, the social component is assumed to play a critical role in the evaluation of the physical environment. In order to overcome and improve the shortcomings in past studies of environmental psychology, this study is based on Baker's (1986) typology, as his approach seems to be more consistent with the holistic Gestalt Approach. Studies by Brady and Cronin (2001) and Raajpoot (2002) have succeeded in revealing the role of the physical environment in terms of evaluating service quality while taking into consideration Baker's (1986) three elements of a physical environment. In this regard, the entire concept of physical environment described here includes both the physical environment and the social aspects of the service provider. Thus, the stimulus in this study is represented by three distinct

physical environment dimensions—social, physical, and ambiance factors—and is expected to have a positive influence on customer engagement in the service setting.

Social Factors

Social factors refer to aspects of service providers within the physical environment. Elements of social factors might include the appearance and behavior of service providers, such as their tone of voice, enthusiasm, and appropriate dress (Berry, Wall, & Carbone, 2006). The significance of the social factor is emphasized especially within a service setting due to the intangible characteristics of the service, as customers depend more on service providers to meet their needs and wants (Sharma & Stafford, 2000). Indeed, the success of service firms may be dependent upon how well services are provided (Chebat, Babin, & Kollias, 2002; Chung & Schneider, 2002; Hartline, Maxham III, & McKee, 2000). As Parasuraman, Zeithaml and Berry (1988) discussed, the appearance of service providers in the service setting may serve as tangible signals of the service being provided.

Past research suggests that service providers play an important role in influencing customers' satisfaction (Grewal & Sharma, 1991; Wong, 2004). The entire service process includes the interaction between service providers and customers. It is likely that customers encounter service providers quite frequently for significant periods of time. Social factors are likely to affect not only the perception of interpersonal service, but also the image of the environment (Baker, 1986; Spielmann, Laroche, & Borges, 2012). In some cases, how a customer views the firm's service providers can lead to customers' behavioral responses toward the firm (Wong, 2004). For example, positive interactions

between a service provider and customers, such as the service provider acknowledging customers as they are checking in, may influence customers' perceptions of the service. Pugh (2001) found that customers exhibited greater satisfaction when service providers interacted with them, smiling and making eye contact while displaying gratitude and demonstrating extended greetings. On the other hand, inappropriate service has been found to have negative consequences (Malshe, 2010). Thus, the following hypotheses were proposed:

H1: The social element of the physical environment influences customer satisfaction.

Design Factors

Design factors refer to nonverbal, but visual elements within the physical environment (e.g., layout, interior decor, space, etc.). Design factors include the arrangement of different furnishings, machinery and equipment, the size and shape of these items, and the spatial relationships among them (Kim & Moon, 2009). Design factors are known particularly to have more persuasive power compared to other aspects of the physical environment (Chaiken, 1979). The reason customers tend to be more influenced by design factors may be due to the lack of physical cues during the delivery of service (Baker, 1986). Design factors could be of particular importance because they influence customers' first impressions of the firm, as they rely often on extrinsic cues to make inferences about a place, especially during their first visit (Zeithaml, 1981). In this respect, many studies have found that interior decor, such as symbols, artifacts and signs,

can be used as a method to convey background information about a place (Lam et al., 2011).

Design factors are known to assist customers in creating a mental picture of a place that precedes their emotional responses (Jang & Namkung, 2009). Prior research has shown that a properly-designed physical environment can affect the mood of customers using a service (Kotler, 1973). Well-designed, high-quality physical environments in particular have been found to give customers an impression that the place they are staying in is high-class, and this may offer customers a feeling of prestige when they consume services in that location (Lam et al., 2011). Moreover, customers also tend to associate spacious facilities with better service (Wakefield & Blodgett, 1996). Properly-designed layouts and artifacts, such as floors, ceilings, and artwork have been shown to provide customers with information about a place. Well-structured signs and symbols are known to reduce perceived crowding as well (Wener & Kaminoff, 1983). Therefore, these features act together to enhance customer satisfaction (Nguyen, 2006). In particular, a study conducted by Bonnin (2002) demonstrated that the space and function of the physical design have significant influences on customers' satisfaction and behavioral outcomes. Further, signs, symbols, and artifacts were also found to influence the perceived quality of service provided, as well as loyalty intentions (Bitner, 1992; Harris & Ezeh, 2008). Thus, the following hypotheses were proposed:

H2: The public design element of the physical environment influences customer satisfaction.

H3: The room design element of the physical environment influences customer satisfaction.

Ambience Factors

Ambient factors refer to nonverbal, nonvisual background elements within the physical environment, such as lighting, temperature, scent and music. Ambient factors serve as background characteristics of the environment, as they constitute non-visible cues (Kim & Moon, 2009). Ambient factors are known to influence the five human senses, thus influencing individuals' responses to the environment (Bitner, 1992a; Goodwin & Ross, 1992; Hirsch, 1995; Johnson, Mayer, & Champaner, 2012; Morin, Dubé, & Chebat, 2007). These ambient characteristics have been demonstrated to have a significant influence on customers, even though they may not be fully aware of their presence (Fowler & Bridges, 2012). According to Fowler and Bridges (2012), customers are likely to notice ambient factors only when they are outside of tolerance ranges; when they are within an acceptable range, they tend to remain unnoticed, even though manipulation of ambience is still effective in influencing customers' perceptions of the physical environment.

Ambient cues are known to create a pleasant atmosphere when they are in harmony with the decor (Harris & Ezeh, 2008). In some cases, ambience implies to customers that the service they are receiving is superior (Bitner, 1992). For example, pleasant aromas and soft music may provide customers with implicit cues that the facility at which they are staying is high class (Lam et al., 2011). Specifically, previous research has found that music, lighting (Hirsch, 1995; Milliman, 1982; Milliman, 1986) and

fragrance (Hirsch, 1995) influence customer behavior. A positive ambience has been found to make customers feel better about the service, thereby leading to greater satisfaction (Lam et al., 2011). Thus, the following hypotheses were proposed:

H4: The ambience element of the physical environment influences customer satisfaction.

The Mediating Variable

Customer Satisfaction

In general, customer satisfaction is considered to be an important linkage between the firm's offerings and customers' behavioral outcomes (Grissemann & Stokburger-Sauer, 2012). To put it another way, customer satisfaction often serves as an intervening variable that mediates the relationship between the service provided and the behavioral intentions of customers (Cardozo, 1965; Fornell, 1992; Taylor & Baker, 1994). In service industries, how the firm provides services to its customers has been proven to have an influence on customer satisfaction (Eskildsen, Kristensen, JØ rn Juhl, & Ø stergaard, 2004). However, relating customer satisfaction to the attributes of services has been a challenge due to the intangible characteristics of such services (Nguyen & Leblanc, 2002). Boshoff and Gray (2004) viewed satisfaction not as something that is embedded in the firm's offerings of products or services, but rather as an outcome that relies on each customer's perceptions of the attributes that relate to the individual's particular needs. Consequently, each customer will experience different levels of satisfaction, even for the same products and services (Ueltschy, Laroche, Eggert, & Bindl, 2007). In this study, satisfaction was measured as the overall degree to which customers were satisfied with their perceptions of physical environment elements.

Lam, et al. (2011) questioned whether, compared to the huge investments firms make in their physical environments, there is sufficient evidence to indicate that the physical appearance of the environment actually increases customer satisfaction. However, contrary to their commentary, numerous articles have supported the important influence of the physical environment on customer satisfaction (Bitner, 1992; Lin & Liang, 2011; Mehrabian & Russell, 1974; Turley & Milliman, 2000). There is ample evidence to suggest that the physical environment acts as an important method of communication for a firm to portray its image and purpose to its customers, thereby leading to customer satisfaction (Lam et al., 2011).

Past studies have revealed that customers respond favorably to physical environments with regard to ambient, design and social factors and that these three factors act simultaneously as cues to influence customer satisfaction (Bitner, 1992; Harris & Ezeh, 2008; Jang & Namkung, 2009; Morin et al., 2007; Sherman et al., 1997; Wakefield & Blodgett, 1994; Wakefield & Blodgett, 1999). With respect to the social factor, several studies have found that the positive delivery of services acts as an internal cue that contributes to customers' satisfaction (Tsai & Huang, 2002). In terms of the design factor, several studies have found that more aesthetically appealing physical environments lead to greater customer satisfaction (Jang & Namkung, 2009; Vilnai-Yavetz & Rafaeli, 2006). With respect to the ambient factor, several researchers have shown that if firms meet customers' expectations of the ambience of a physical environment, they are likely to be more satisfied (Bitner, 1990; Bitner, 1992; Zeithaml & Berry, 1993; Zeithaml, Berry, & Parasuraman, 1996).

Wakefield and Blodgett (1994) stated that the longer the customer stays in the physical environment, the more important its role in determining customer satisfaction. Lam et al. (2011) found that customers stayed longer in a place if they were satisfied with the physical environment provided. As longer stays may lead customers to spend more money, assessing which aspects of the physical environment influence customer satisfaction is useful. For example, a customer is likely to be dissatisfied with hotel service if its physical environment does not meet their expectations due to unpleasant odors or crowded layouts. Once a positive outcome is achieved, previous studies have demonstrated that greater customer satisfaction reduces the likelihood of defection and increases that of retention, repurchase intention and loyalty (Anderson & Sullivan, 1993; Mittal, Kumar, & Tsiros, 1999; Oliver Richard, 1997).

Oliver (1981) defined satisfaction as an evaluation of the "surprise" that occurs during a consumption experience. According to him, the basis of customer satisfaction lies in the confirmation—disconfirmation paradigm, which proposes that customers are satisfied when their expectations align with the performance of the service. Similarly, Gronroo (1984) also stated that customers tend to compare their expectations with their perceptions of the service they have received. For example, a study by Cameran, Moizer and Pettinicchino (2010) revealed that satisfaction can be explained in part by the difference between a respondent's ideal firm (expectation) and the actual firm (performance) in comparisons of the difference in those two perceptions. Expectation has its basis in customers' choice and processing of stimuli in the physical environment (Hoch & Ha, 1986). It follows then that either confirmatory effects will emerge, which

are assimilated as expectations, or disconfirmatory effects will occur, which are in contrast to expectations (Geers & Lassiter, 2005; Oliver, 2010). Ultimately, customers are considered to be satisfied if their service expectations are met (confirmation), whereas customers are considered to be dissatisfied if the service performance fall short of their expectations (leading to disconfirmation; Oliver, 1981). In the case of hotels, a significant number of potential stimuli are encountered during the service process. For example, having many stimuli, as in this case, can make managing customer engagement even more challenging, as it will be more complex and have more potential for confirmation and/or disconfirmation to occur during the engagement process (Esbjerg et al., 2012).

Regardless of the fact that firms invest enormous effort in ensuring customer satisfaction, customers' reactions to a physical environment tend to be short-lived and difficult to verbalize (Donovan & Rossiter, 1982). Further, according to Oliver (1981), the feeling of satisfaction may be transient. Therefore, creating an effective physical environment and achieving customer satisfaction does not appear to be sufficient. Even previously satisfied customers may decide to switch to another firm merely because they have become bored (Jones & Sasser, 1995). However, one thing to note is that customers are not regarded as mere recipients of the service, but rather as active participants in value co-creation of their service experience within the symbolic boundaries of the physical environment (Esbjerg & Bech-Larsen, 2009). Therefore, it may be that the most prominent manifestation is likely to be found in customers' behaviors (Donovan & Rossiter, 1982), given that the degree of satisfaction is known to affect customers' behavioral outcomes (Gotlieb, Grewal, & Brown, 1994; Wong, 2004). Therefore, it is

important that firms sustain their customer relationships by engaging them constantly to encourage their continued interest in the firm (Jones & Reynolds, 2006).

Theoretical Framework

The relationship between the physical environment and human behavior has been studied extensively by psychologists and the discipline referred to as "environmental psychology" has emerged (Donovan & Rossiter, 1982). Many studies have been conducted in environmental psychology with respect to the influence of the physical environment on customer behaviors (Tai & Fung, 1997). One of the earliest and most widely-used frameworks to investigate the influence of physical environment on customer behavior was Mehrabian's and Russell's (1974) S-O-R paradigm described above.

However, most previous research in environmental psychology has emphasized testing the relationship between the Organism (O) and Response (R) variables, rather than the Stimulus (S) and Response (R) variables (Donovan & Rossiter, 1982; Donovan, Rossiter, Marcoolyn, & Nesdale, 1994). Although significant results were found in previous studies that tested the S-O-R model, Donovan and Rossiter (1982) pointed out that customers may not be fully aware of the environmental stimuli that affect their reactions, regardless of their significant role in influencing behavioral outcomes. This could be due to the difficulty of identifying the relevant stimuli, as there are numerous stimuli involved in any environmental setting. While Donovan and Rossiter (1982) may be right about unconscious customer responses to environmental stimuli, further research is needed to better understand what elements of environmental stimuli can engage

customers. The assumption here is that the essence of engagement is not unconscious, but rather conscious. Therefore, the following hypotheses were proposed:

H5: Customer satisfaction influences customers' willingness to suggest.

H6: Customer satisfaction influences customers' WOM.

CHAPTER 3: METHODOLOGY

This chapter discusses the methods that were used to test the hypothesized model of hotel customers' engagement during a previous hotel visit. First, information regarding the research context, survey design and sample will be presented. Second, survey instrument development will be discussed. These will be followed by the analysis techniques employed to test the Structural Equation Model (SEM) used in this study.

Research Context

Upscale hotels were selected as the research context in which to test the conceptual model of customer engagement. For the purposes of this study, upscale hotels with at least a 4 star rating were selected. Upscale hotels are defined as hotels with luxurious, high-end facilities with a large volume of full-service accommodations, on-site full service restaurant(s), and a variety of on-site amenities, such as health clubs, swimming pools, ballrooms, conference facilities, children's activities, and other amenities (Wikipedia, 2014). Some examples of upscale hotel brands include: InterContinental, Ritz-Carlton, Four Seasons, Hilton, Marriott, and Hyatt. Upscale hotels were considered appropriate for this study because they are more likely to offer luxury amenities and the highest level of professional service compared to limited-service hotels.

Survey Design and Sample

A national sample of hotel customers was collected online using "Amazon Mechanical Turk" (MTurk) (www.mturk.com). MTurk is a site used to obtain web-based data. Mturk uses the term "requesters" for researchers administering an online survey and "workers" for those who participate in the survey; Mturk has gained increasing attention as a "requesters" (task creators) venue to obtain responses through "workers" (participants) participation (Buhrmester, Kwang, & Gosling, 2011). In this study, Mturk was used to ensure that data were obtained from a broad range of American customers and, thus, were representative of U.S. high-end hotel customers. Mturk participants are found typically to be more demographically diverse compared to traditional online samples, while the quality of the data has been found to meet or exceed the psychometric standards required for published articles (Buhrmester et al., 2011). For this study, an online survey was administered though Mturk by linking survey respondents to an external online survey tool, Qualtrics.

Qualtrics is an online survey tool that enables researchers to create questionnaires. For this study, Qualtrics provided a survey link, which directed research participants to the questionnaire. Once participants clicked on the link to the survey, they were welcomed by a survey cover letter. The cover letter stated the background information of the researchers involved in the study, as well as the study's purpose. It also made participants aware that responses provided to the survey were anonymous and that their participation was entirely voluntary and could be discontinued at any time. Refusal to participate in the survey involved no penalty. Lastly, it provided the contact information

for the researchers and Institutional Review Board in case participants had any questions or concerns regarding the research.

Following the cover letter, participants were directed to one qualifying question, which acted to identify the appropriate sample for the survey. For this study, the qualifying question was based on whether or not their most recent visit to a hotel for at least one overnight stay was to an upscale hotel. In order to recruit the correct participants, they were provided with the definition of an upscale hotel; this ensured that only respondents who met the qualifications for this research were selected. Consequently, if the participants answered, "It was an upscale hotel," they were directed to the actual questions in the survey, but if the participants chose, "It was not an upscale hotel," they were directed to the end of the survey. Therefore, only the participants who selected an upscale hotel for their most recent hotel visit were chosen for the study sample. The survey sample was collected from March 12–March 19, 2014. A total of 411 respondents completed the survey. Among the 411 total surveys collected, 90 of the respondents answered the qualification question with, "It was not an upscale hotel." Therefore, those were deleted. After the deletion of those responses, 321 usable responses were obtained for a response rate of 78%. Among the 321 surveys completed, 11 extreme multivariate outliers among total responses were found and eliminated from further analysis, retaining a final number of 310 responses.

Instrument Development

Development of a structured questionnaire began with an extensive literature review to better understand concepts, as well as test the relationships among the concepts studied. The concepts for this study consisted of physical environment elements, customer satisfaction and customer engagement. The design of the questionnaire consisted of a variety of information not only on the concepts being studied, but also on respondents' socio-demographic and trip-related characteristics.

To test the hypotheses empirically, multi-item scales were adopted. The survey consisted of sets of measurement items for questions on physical environment elements (social, design, and ambience factors), customer satisfaction, and customer engagement. Each item for the constructs studied was rated on a five-point Likert scale. Different measurement scales were used for different constructs measured; "Physical environment" elements ranged from "Poor" (1) to "Excellent" (5); "Customer satisfaction" ranged from "Very dissatisfied" (1) to "Very satisfied" (5); and "Customer engagement" ranged from "Strongly disagree" (1) to "Strongly agree" (5).

The items used to measure the "physical environment" consisted of the social, design, and ambience elements in Baker's (1986) typology. For this study, the design element was divided into two elements, public space and guest room. The rationale was that both of these are considered to be important aspects, although each includes unique features of the physical environment that may not be comparable to one another. Items used to measure the social, design and ambience elements of the physical environments

were adapted from Hightower Jr., Brady and Baker (2002), Keng, Huang, Zheng and Hsu (2007), and Wakefield and Blodgett (1996).

In addition to overall satisfaction attributes adopted from Cronin Jr., Brady and Hult (2000), for "Customer satisfaction," some attributes were developed especially for this study to reflect what this study was attempting to measure. For example, "I was satisfied with the hotel employees at this hotel," "I was satisfied with the design of this hotel," and, "I was satisfied with the ambience of this hotel," were developed especially for the purposes of this study, as the goal of the research was to identify in particular whether these elements of the physical environment lead to customer satisfaction and, thus, to greater customer engagement.

According to Van Doorn (2010), customers may possess different behavioral expressions that may all lie in the same underlying construct of "customer engagement." These may be seen through engagement in WOM behavior, recommendations, and social media activities (e.g., blogging and/or web posting), as well as other behaviors that influence the firm (De Matos & Rossi, 2008; Hennig-Thurau, Gwinner, Walsh, & Gremler, 2004; Jin & Su, 2009; Van Doorn et al., 2010). To gain a deeper understanding of the issues that arose, this study tried to incorporate a broad variety of these engagement behaviors. The items measuring "willingness to suggest" were developed for this study based on Van Doorn's (2010) work, as very few existing measurement scales were found for customer engagement. Van Doorn (2010) originally theorized that customer engagement behavior consists of such behaviors as making suggestions to the firm as a means to co-create and co-design products and services. Thus, the

questionnaires were designed based on that argument. For the measurements regarding customer WOM, there are many existing scales; this study adopted the scale used by Gruen, Osmonbekov and Czaplewski (2006) and Hightower Jr. et al. (2002).

Next, general questions were asked regarding customers' previous use of hotels. One of the questions asked whether "It was their first visit to that hotel." If the respondent answered, "No, I was a repeat customer," then s/he was asked how many times s/he had stayed at that hotel, including the most recent trip. Another question asked was, "The primary decision maker responsible for selecting the hotel." If the respondent selected, "Yourself," then s/he was asked how s/he booked the hotel. Further, regarding the question that asked about "the hotel services/amenities used during the hotel stay," respondents were asked to rate how often they used those amenities on a five-point Likert scale that ranged from "Never" (1) to "All of the time" (5). Other questions that were asked included: the number of nights at the hotel during their last visit; purpose of travel; main reason for the visit to the hotel; how they heard about the hotel; location of the hotel, and whether they were a member of the hotel or not.

Lastly, demographic questions were asked. These included: gender; age; ethnicity; marital status; employment status; total household income; education, and location of home. After the initial development of the questionnaire items, one focus group interview and two pilot studies were conducted before finalizing the survey.

Focus Group Interview

After the initial development of the questionnaire items, a focus group interview was conducted. According to Lindlof and Taylor (2002), focus group interviews are often used as an exploratory technique to develop research hypotheses, as well as questionnaire items during the initial stage of survey design. Moderated by the researcher, the participants in the focus group interview consisted of four graduate students at a Midwestern university who met the qualification of having stayed at an upscale hotel within a one-year period of time. Lindlof and Taylor (2002) suggested 30 minutes to 2 hours as an adequate length of time for a focus group interview. This focus group study took approximately an hour to review with the participants all survey items and to discuss their thoughts on the questions. Also, Lindlof and Taylor (2002) suggested that the focus group interview take place in a "neutral" location, such as a conference room, and for this study, a meeting room was selected due to the small size of the focus group. Based on feedback from the focus group interview, the survey was modified and pilot tested two consecutive times as the last step in the questionnaire development.

Pilot Study Results with Factor Analysis

Before finalizing the survey, two pilot studies, each consisting of 30 respondents, were conducted. This was designed to pre-test the survey as the final step in its development. To help ensure that the questionnaire developed for this study had minimal potential problems, the pilot study was also conducted with the same sample pool using Mturk.

A factor analysis with Varimax rotation was performed on the results of each pilot study in an effort to refine the measurement items in the main study. The strength of factor loadings was considered to determine whether or not the items should be kept in the future analysis. To establish uni-dimensionality among factors, items with factor loadings of at least 0.70 were retained, while those with factor loadings lower than 0.70 were removed. Eigenvalues greater than one were selected.

The factor analysis was conducted on each of the multiple-item scales—physical environment elements, customer satisfaction and customer engagement. While some measurement items in the factor designations had already been confirmed through previous studies, some items were newly developed for this study. Therefore, for the pilot test, a factor analysis was conducted with more items than the intended number of items for the final study. This was performed to take into consideration the fact that some items have not yet been confirmed in previous studies and that there was a possibility that those items might not meet the requirement of uni-dimensionality among factors.

For the first pilot study, a total of 30 respondents were surveyed. Among all the observed variables (attributes) tested, most latent variables (factors) had satisfactory factor loadings. “Room design” was the only factor that had two measurement items with factor loadings less than 0.70. These were “The guest room provided the latest in-room technology” (0.69) and “The guest room had a nice window view” (0.63). Thus, these were omitted from further analysis. For the factor “customer engagement,” an initial factor analysis with eight items was conducted; however, the results of the Varimax rotation revealed two separate factors with four items each. Therefore, for the purposes of

this study, customer engagement was divided into two elements based on the characteristics it possesses, which were “willingness to suggest” and “WOM” behaviors.

To ensure the strength of the measurement items, a second pilot test was conducted for those latent variables that did not yet have at least five reliable measurement items after the revision of the first pilot test. One of those latent variables was “room design” as two of the existing measurement items were omitted after the first pilot test. To replace those items that were removed, two new items were added: “It was easy to move about the room” and “The furnishings in the guest room were of high quality”. As these items had loadings of 0.87 and 0.71, respectively, both of the items were retained for the final study. Another factor was “customer engagement”. As this factor was divided into two latent variables, each of those variables required more items to meet a five item per variable rule. Therefore, the attributes, “If given a chance, I am willing to suggest additional services” and “If given a chance, I am willing to suggest improvements in facilities” were added for the “Willingness to suggest” variable, for which the factor loadings were 0.74 and 0.90, respectively. For the variable “WOM”, “I will recommend this hotel to someone who seeks my advice” was added with a factor loading of 0.90. As these newly added measurement items met the qualification of factor loadings of above 0.70, all of these items were kept in the final analysis.

Reliability & Validity

After the initial questionnaire was developed, it was refined further before being made available online. To ensure face validity, a former hotel manager was asked to review the questionnaire in order to determine whether or not the test was ethical, and

whether or not the test would actually measure hotel customers' engagement during their previous hotel stay. Moreover, to check content validity, two professors from a Midwestern university who specialize in consumer behavior and service marketing were invited to comment on the questionnaire. After content validity was confirmed, the pilot test was conducted in two rounds, with thirty respondents each time, to ensure the clarity of wording and to test the reliability of the measurements statistically. As a result, some items were reworded, some were dropped and some were newly added in order to improve both the validity and clarity based on the comments received from respondents and the expert during the instrument development procedure. After the survey was finalized, it was made available online.

For reliability, several observed variables were measured to derive an overall assessment for each latent variable. Reliability analysis using Cronbach's alpha was performed on each latent variable. Cronbach's alpha is regarded as reliable and establishes the internal consistency of the items that are tested. The Cronbach's alpha for each latent variable was quite high; to measure "physical environment", the latent variable for "social" was 0.91, and the two latent variables for "design" were 0.90 for both public and for guest room. Further, the latent variable for "ambience" was 0.88. While the latent variable for "customer satisfaction" was 0.90, the two latent variables for "customer engagement" were 0.91 and 0.88, respectively. Thus, because all values were between 0.88 and 0.91, the variables observed to measure each latent variable were considered to be highly reliable.

Data Analysis

Descriptive Statistics

After the survey was finalized and administered, the empirical data were analyzed using quantitative methods in order to achieve the research objectives. Before the actual analysis began, data screening was performed. Data screening involved scrutinizing responses for any missing values. In addition, to identify any potential errors in the data, Hayes (2005) suggested examining the minimum and maximum values of each item measured; thus, data screening was necessary to ensure the accuracy of the data (Hayes, 2012). Upon the completion of data screening, descriptive statistics were obtained to summarize the survey responses. According to Hayes (2005), descriptive statistics enable researchers to summarize data for both variables and samples used in the study.

Exploratory factor analysis (EFA)

Anderson and Gerbing (1988) suggested performing an exploratory factor analysis (EFA) prior to testing the full model as a means to distinguish items with poor psychometric characteristics, and thereafter, to refine the measurement items for future testing. An EFA using principal axis factoring (PAF) and the Oblique (Promax) rotation method was conducted to reveal the underlying dimensions of the attributes tested. PAF is preferred for SEM because it takes co-variation into consideration by extracting factors from shared variance, rather than principal component analysis (PCA), which accounts for total variance by extracting factors from all the variance available (Spicer, 2005). As the objective was to account for the relationships among the subscales with some underlying structure, PAF extraction was chosen for this analysis. Further, PAF

extraction tends to produce a cleaner separation of the factors than does PCA (Spicer, 2005). In terms of rotation, oblique rotation is known to adjust for any possible correlations between factors, while orthogonal rotation forces the factors to be uncorrelated (Spicer, 2005). Oblique rotation was used as this also showed a clean separation of the loadings into different factors, while the orthogonal rotation did not. Orthogonal loadings showed overlap for different variables that distorted the results.

Multivariate Analysis

Next, structural equation modeling (SEM) was used to test the hypothesized relationships simultaneously in a multivariate context. SEM is a statistical method used frequently to study proposed hypothesized relationships among constructs (Tremblay & Gardner, 1996). While regression analysis deals only with predicting a single dependent variable, SEM enables the prediction of more than one dependent variable (Grimm & Yarnold, 2000). Moreover, SEM takes into account measurement errors in the analysis. As suggested by Anderson and Gerbing (1988), the data were analyzed in two steps.

First, confirmatory factor analyses (CFA) were performed to determine whether or not the items loaded on their respective scales. CFA enables the measurement of the uni-dimensionality, reliability and validity of each factor, as well as their identified attributes (Gerbing & Anderson, 1988).

Second, SEM was performed to estimate the hypothesized relationships among Stimulus (physical environment), Organism (customer satisfaction) and Response (customer engagement). The proposed structure model was estimated by conducting SEM, which estimates a model by evaluating the overall model fit as well as the

significance of the relationships among each latent variable. First, the goodness-of-fit statistics were examined to confirm that the proposed structural model fitted the data well, just as in the CFA model. For better interpretation of the goodness-of-fit of the proposed structural model, the same indices that were used for the CFA were investigated for the structural model as well. Next, the relationships among variables of interest were examined to see whether or not the proposed model was significant.

SEM procedure and Goodness-of-Fit Measures

SEM supports a statistical test of the goodness-of-fit for the proposed confirmatory model, which enables scale validation in the measurement of specific constructs (Hair et al., 1998). The goodness-of-fit of the hypothesized model was tested using a maximum-likelihood estimation procedure. The model fit shows the extent to which the tested model accounts for the correlations between variables.

The oldest and one of the most straightforward of the goodness-of-fit tests is the Chi-squared (X^2) test (Hoyle, 2011). However, X^2 has a drawback, in that, in practice, it rarely yields a p-value of 0.05 (Bentler, 1990; Hoyle, 2011). To overcome this sensitivity, X^2 can be re-calculated by dividing by the degrees of freedom. The acceptable cut-off value range is 1.0 to 3.0, with 1.0 indicating the best fit. Because of this limitation of the X^2 test, various alternative goodness-of-fit indices have also been developed. Using various indices to assess model fit, model parsimony and model comparison have been suggested (Hair et al., 1998). Among them, Root Mean Square Error of Approximation (RMSEA) is viewed as one of the best fit indices for a confirmatory model with larger samples (Rigdon, 1996). A RMSEA value below 0.05 indicates a good fit. Some of the

other goodness-of-fit indices commonly used are the incremental fit index (IFI), comparative fit index (CFI), normed fit index (NFI), and Tucker-Lewis Index (TLI). All of these have a proposed criterion greater than 0.90.

CHAPTER 4: ANALYSIS AND RESULTS

Data Analysis Methods and Tools

The data collected were analyzed using IBM SPSS and AMOS software and the analysis was completed in three steps. First, an EFA was performed to distinguish the factor structure in terms of how the questionnaire item responses were related. Second, a CFA was conducted to confirm how well the factor structure extracted from the EFA fit the data. Finally, SEM was used to examine the proposed relationships among the variables analyzed in this study: physical environment elements, customer satisfaction, and customer engagement. While the data cleaning, descriptive statistics and EFA were performed using IBM SPSS 21, the CFA and SEM were conducted using AMOS 22. Figure 1 shows the theoretical model of the study.

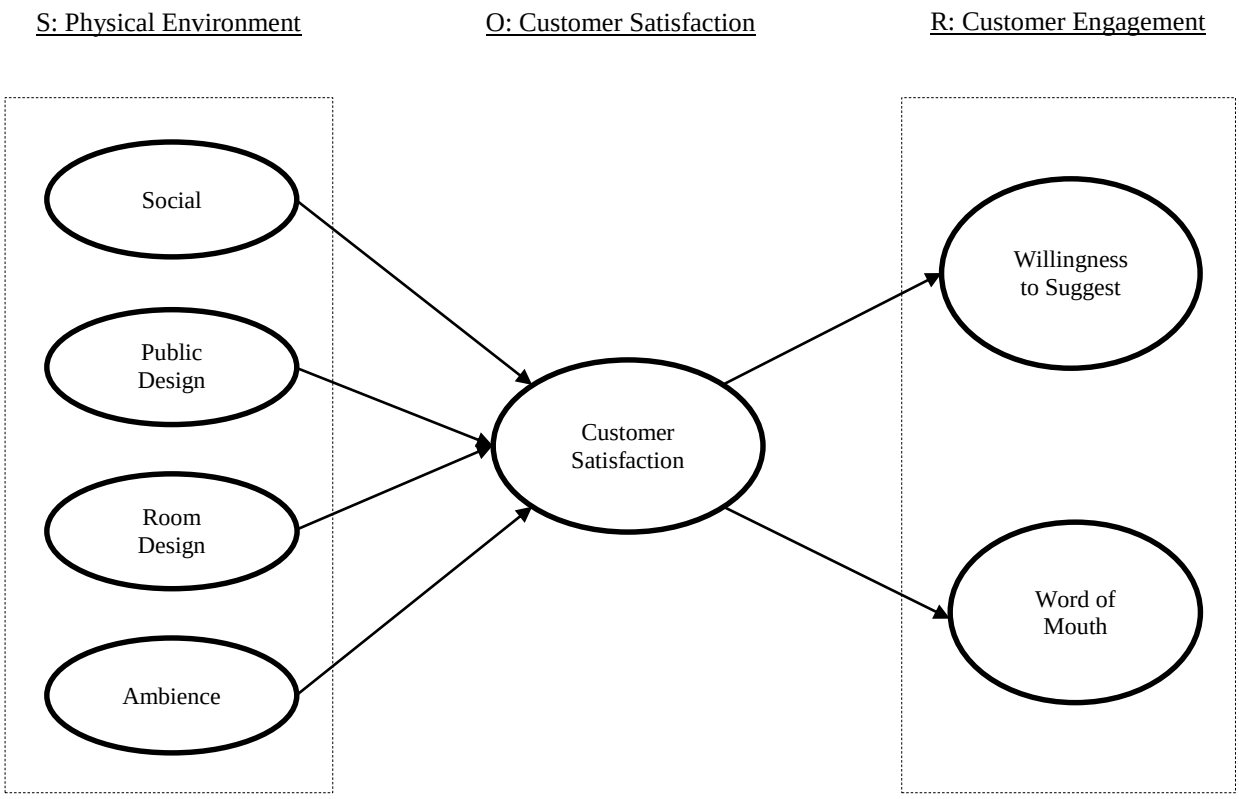

Figure 1. Theoretical Model

Data Screening

The data analysis started with a data screening procedure. No missing values were detected. For this study, items for each variable were measured using a five-point Likert scale, therefore, all the responses were checked for whether they fell into the range of one to five. No values below or above the range of one to five were detected.

Descriptive Statistics of the Sample

Socio-demographics of Sample

Table 1 shows results of socio-demographic profile of the respondents. Three hundred and ten hotel customers, consisting of 168 (54.2%) females and 142 (45.8%) males, participated in the study. The age range was 18 to 80. Nearly half of the respondents (45.5%) were 25-34 years old. The second largest group consisted of respondents between 35-44 (21.3%). The age group between 18-24 (15.8%) came third. All the other age groups above the age of 45 each consisted less than 10% of the sample. The majority (76.8%) of respondents were White. This was followed by 9.7% of Asians, 7.4% of Black or African American and 4.2% of Hispanic or Latino. Other categories of ethnicity had less than 2% of the respondents. More than half of the respondents were single (54.8%) while married (40.0%) came next. The remaining 5.2% were either divorced, widowed or living together but not married. Regarding employment, full time (59.7%) was the largest proportion followed by part time (15.2%) and student (11%). Other categories of employment had less than 10% of the respondents. With regard to income, $25,000 - $49,999 was most frequent (36.1%). Income between $50,000 - $74,999 was the second most frequent (24.5%), followed by $75,000 - $90,999 (12.3%)

and $100,000 or more (11.6%). The result was surprising since it was expected respondents would need higher income in order to stay at upscale hotels. However, considering that most of these respondents are younger generations, it is likely that they are still at the early stage of their career and this might explain their current income status. In addition, the respondents may have traveled for business and hence the accommodation may have been paid by their firm. In terms of education, Bachelor's degree (38.1%) was most frequent, and high school diploma (29.0%) was the second largest group; 17.1% and 13.2% had Associate and Master's degrees respectively. Only 1.9% had Doctorate degrees. It can be said that upscale hotel customers had an average education for the U.S. Home location of the respondents seemed to be evenly distributed with 23.2% from Northeast, 23.2% from Midwest, 26.5% from West and 27.1% from South of the U.S.

Socio-demographic	Frequency	Percentage
Gender		
Male	142	45.8
Female	168	54.2
Age		
18 to 24	49	15.8
25 to 34	141	45.5
35 to 44	66	21.3
45 to 54	27	8.7
55 to 64	18	5.8
Over 65	9	2.9
Ethnicity		
White	238	76.8
Asian	30	9.7
Black or African American	23	7.4
Hispanic or Latino	13	4.2
Other	6	1.9
Marital Status		
Single	170	54.8
Married	124	40.0
Other	16	5.2
Employment		
Full time	185	59.7
Part time	47	15.2
Student	34	11.0
Not-employed	28	9.0
Retired	8	2.6
Other	8	2.6
Income		
Less than $25,000	48	15.5
$25,000 - $49,999	112	36.1
$50,000 - $74,999	76	24.5
$75,000 - $99,999	38	12.3
$100,000 or more	36	11.6
Education		
Earned high school diploma	90	29.0
Associate’s degree	53	17.1
Bachelor’s degree	118	38.1
Master’s degree	41	13.2
Doctorate’s degree	6	1.9
Unwilling to answer	2	0.6
Home location		
Northwest	72	23.2
Midwest	72	23.2
West	82	26.5
South	84	27.1

Table 1. Socio-demographic Profile of the Respondents (N=310)

Trip Profile of Sample

Table 2 represents results of trip-related characteristics of the respondents. As for the visit to the hotel, 74.8% were new customers while 25.2% were repeat customers. Among the repeat customers, 9.7% had stayed at this hotel 1-2 times, 8.7% had stayed 3-4 times and 6.8% had stayed more than 4 times including the recent trip. In terms of the total nights stayed during the last visit, 2 nights (32.9%) was the most frequent response, followed by 3 nights (28.1%) and 1 night (20.6%); 9.0% had stayed for 4 nights, 9.4% had stayed for more than 4 nights. Travel for leisure was popular (71.0%) among upscale hotel customers. While only 11.0% came for business, 18.1% came for a combination of both. For the question regarding how the respondents had heard about the hotel, nearly half of them (45.5%) cited the Internet. 26.5% of them chose "I already knew it" and 18.4% had heard about the hotel from friends and relatives. Other categories had less than 10% of respondents. For the primary decision maker responsible for selecting the hotel, 53.9% of the respondents said "yourself". Other categories of primary decision maker ranged somewhere between 3.6% and 11.0%. Those respondents who selected the hotel used the hotel website (28.1%), travel related sites (ex. Priceline, Expedia) (14.2%) and a phone reservation (10.7%) to book the hotel. Regarding reason for the visit, majority of respondents came for leisure (69.7%), while visiting relatives and friends (27.7%) and attending events (26.1%) followed afterwards. While 83.2% of respondents used lobby and 82.9% of them used hotel amenities, only 60% of them used restaurants. Only 14.2% of the respondents were a member of hotel's reward club. The location of the hotel also

was well dispersed, with 21.9% from Northeast, 21.0% from Midwest, 28.4% from West and 28.7% from South of the U.S.

Trip-related characteristics	Frequency	Percentage
First/Repeat visit to hotel		
New customer	232	74.8
Repeat customer	78	25.2
1 to 2 times	30	9.7
3 to 4 times	27	8.7
More than 4 times	21	6.8
Number of nights stayed		
1 night	64	20.6
2 nights	102	32.9
3 nights	87	28.1
4 nights	28	9.0
More than 4 nights	29	9.4
Purpose of visit		
Business	34	11.0
Leisure	220	71.0
Combination of both	56	18.1
Hearing about the hotel		
I already knew of it	82	26.5
The internet	141	45.5
Friends and relatives	57	18.4
Media (e.g. TV)	7	2.3
Travel agency	9	2.9
It was part of the travel package	14	4.5
Primary decision maker		
Spouse/partner	28	9.0
Joint decision with significant others	34	11.0
Other family members/relatives	30	9.7
Company you work for	22	7.1
Friend	18	5.8
Other	11	3.6
Yourself	167	53.9
Room selection by		
Hotel website	87	28.1
Travel-related sites	44	14.2
Phone reservation	33	10.7
Other	3	1.0
Reason for the visit		
Leisure	216	69.7
Visiting relatives and friends	86	27.7
Business reasons	76	24.5
Attending events	81	26.1
Culture	39	12.6
Sports and recreation	30	9.7
Other	30	9.7
Hotel services used		
Lobby	258	83.2
Restaurant	186	60.0
Hotel amenities	257	82.9
Member of the hotel		
Yes	44	14.2
No	266	85.8
Hotel location		
Northwest	68	21.9
Midwest	65	21.0
West	88	28.4
South	89	28.7

Table 2. Trip-related Characteristics of the Respondents (N=310)

Responses to Questionnaire Items

The next phase in the data analysis was computing the descriptive statistics. Table 3 through Table 10 show the descriptive statistics of proposed initial variables.

Factor 1 Social	**Mean**	**SD**
Social 1 The hotel employees treated me in a courteous manner.	4.24	0.759
Social 2 The hotel employees were helpful	4.10	0.845
Social 3 The hotel employees gave me prompt service.	4.12	0.800
Social 4 The hotel employees made me feel valued.	4.02	0.868
Social 5 The hotel employees behaved in a professional manner.	4.29	0.789
Social 6 There were enough employees at the hotel to provide good service.	4.21	0.792

Table 3. Physical Environment Elements (Social)

For the social factor (Table 3), there were six items in total. Items listed in order from highest mean value to lowest mean value were: a) the hotel employees behaved in a professional (e.g. well-dressed) manner (m=4.29, sd=0.79); b) the hotel employees treated me in a courteous manner (m=4.24, sd=0.76); c) there were enough employees at the hotel to provide good service (m=4.21, sd=0.79); d) the hotel employees gave me prompt service (m=4.12, sd=0.80); e) the hotel employees were helpful (m=4.10, sd=0.85); and f) the hotel employees made me feel valued (m=4.02, sd=0.87).

Factor 2 Public Design	Mean	SD
Public 1 The public spaces provided plenty of room.	4.02	0.798
Public 2 This hotel provided comfortable seating.	4.01	0.826
Public 3 This hotel had legible, visible signs in public areas.	3.91	0.875
Public 4 This hotel provided accessibility that meet my needs.	4.01	0.894
Public 5 This hotel was aesthetically appealing.	4.26	0.815
Public 6 This hotel's layout made it easy to get to where you wanted to go.	4.05	0.844
Public 7 This hotel had safety features.	4.08	0.822

Table 4. Physical Environment Elements (Public Design)

For the public design factor (Table 4), there were seven items in total. Items listed in order from highest mean value to lowest mean value were: a) this hotel was aesthetically appealing (e.g. artworks, wall/floor decorations) (m=4.26, sd=0.82); b) this hotel had safety features (m=4.08, sd=0.82); c) this hotel's layout made it easy to get to where you wanted to go (e.g. restroom, guestroom, lobby, restaurants) (m=4.05, sd=0.84); d) the public spaces (e.g. seat arrangements) provided plenty of room (m=4.02, sd=0.80); e) this hotel provided comfortable seating (m=4.01, sd=0.83); f) this hotel provided accessibility (e.g. wide doorways, parking spaces) that meet my needs (m=4.01, sd=0.89); and g) this hotel had legible, visible signs in public areas (m=3.91, sd=0.88).

Factor 3 Room Design	Mean	SD
Room 1 It was easy to move about the room.	4.27	0.811
Room 2 The guest room had easily used features.	4.05	0.821
Room 3 The guest room was clean and properly supplied.	4.35	0.703
Room 4 The guest bathroom was clean and had attractive features.	4.34	0.761
Room 5 The furnishings in the guest room were of high quality.	4.15	0.805
Room 6 The style of interior accessories was fashionable.	4.02	0.838
Room 7 The amenities in the room worked well.	4.28	0.781

Table 5. Physical Environment Elements (Room Design)

For room design factor (Table 5), there were seven items in total. Items listed in order from highest mean value to lowest mean value were: a) the guest room was clean and properly supplied (m=4.35, sd=0.70); b) the guest bathroom was clean and had attractive features (m=4.34, sd=0.76); c) the amenities (e.g. TV, radio, telephone) in the room worked well (m=4.28, sd=0.78); d) it was easy to move about the room (m=4.27, sd=0.81); e) the furnishings in the guest room were of high quality (m=4.15, sd=0.81), f) the guest room had easily used features (e.g. grab bars, door handles, door keys) (m=4.05, sd=0.82); and g) the style of interior accessories (e.g. lamps, artworks) was fashionable (m=4.02, sd=0.84).

Factor 4 Ambience	**Mean**	**SD**
Ambience 1 The atmosphere of this hotel was pleasant.	4.28	0.760
Ambience 2 The lighting of this hotel was pleasant.	4.15	0.817
Ambience 3 The background aroma of this hotel was pleasant.	3.97	0.847
Ambience 4 The background music of this hotel was pleasant.	3.74	0.855
Ambience 5 The temperature of this hotel was comfortable.	4.16	0.819
Ambience 6 The noise level of this hotel was minimal.	4.14	0.850
Ambience 7 This hotel had soundproof guest rooms.	3.90	0.990

Table 6. Physical Environment Elements (Ambience)

For ambience factor (Table 6), there were seven items in total. Items listed in order from highest mean value to lowest mean value were: a) the atmosphere of this hotel was pleasant (m=4.28, sd=0.76); b) the temperature of this hotel was comfortable (m=4.16, sd=0.82); c) the lighting of this hotel was pleasant (m=4.15, sd=0.82); d) the noise level of this hotel was minimal (m=4.14, sd=0.85); e) the background aroma of this

hotel was pleasant (m=3.97, sd=0.85); f) this hotel had soundproof guest rooms (m=3.90, sd=0.99) and g) the background music of this hotel was pleasant (m=3.74, sd=0.86).

Factor 5 Customer satisfaction	**Mean**	**SD**
Customer satisfaction 1 Overall, I was satisfied with my experience staying at this hotel.	4.45	0.614
Customer satisfaction 2 I think I did the right thing in visiting this hotel.	4.41	0.685
Customer satisfaction 3 My choice to visit this hotel was a wise one.	4.42	0.627
Customer satisfaction 4 I was pleased with the information this hotel's website provided.	4.17	0.724
Customer satisfaction 5 I was satisfied with the hotel employees at this hotel.	4.40	0.674
Customer satisfaction 6 I was satisfied with the design of this hotel.	4.35	0.664
Customer satisfaction 7 I was satisfied with the ambience of this hotel.	4.35	0.650

Table 7. Customer Satisfaction

For the customer satisfaction factor (Table 7), there were seven items in total. Items listed in order from the highest mean value to the lowest mean value were: a) overall, I was satisfied with my experience staying at this hotel (m=4.45, sd=0.61); b) my choice to visit this hotel was a wise one (m=4.42, sd=0.63); c) I think I did the right thing in visiting this hotel (m=4.41, sd=0.69); d) I was satisfied with the hotel employees at this hotel (m=4.40, sd=0.67); e) I was satisfied with the design of this hotel (m=4.35, sd=0.66); f) I was satisfied with the ambience of this hotel (m=4.35, sd=0.65); and g) I was pleased with the information this hotel's website provided (m=4.17, sd=0.72).

Factor 6 Willingness to suggest	Mean	SD
Suggest 1 If given a chance, I am willing to suggest improvements in design.	2.91	0.988
Suggest 2 If given a chance, I am willing to suggest improvements in ambience.	2.92	1.011
Suggest 3 If given a chance, I am willing to suggest improvements in the quality of service provided by hotel employees.	2.92	1.070
Suggest 4 If given a chance, I am willing to suggest improvements in the environmentally-friendly practices provided by the hotel.	3.03	1.076
Suggest 5 If given a chance, I am willing to suggest additional services.	3.12	1.063
Suggest 6 If given a chance, I am willing to suggest improvements in facilities.	2.96	1.061

Table 8. Customer Engagement (Willingness to Suggest)

For willingness to suggest (Table 8), there were six items in total. Items listed in order from the highest mean to the lowest mean value were: 1) if given a chance, I am willing to suggest additional services (m=3.12, sd=1.06), 2) if given a chance, I am willing to suggest improvements in the environmentally-friendly practices provided by the hotel (m=3.03, sd=1.08), 3) if given a chance, I am willing to suggest improvements in facilities (m=2.96, sd=1.06), 4) if given a chance, I am willing to suggest improvements in the quality of service provided by hotel employees (m=2.92, sd=1.07), 5) if given a chance, I am willing to suggest improvements in ambience (m=2.92, sd=1.01), and 6) if given a chance, I am willing to suggest improvements in design (m=2.91, sd=0.99).

Factor 7 Word of month	Mean	SD
WOM 1 I will recommend this hotel to others through online platforms.	3.64	1.026
WOM 2 I will recommend this hotel to others through verbal communication.	4.23	0.752
WOM 3 I will say positive things about staying at this hotel.	4.31	0.669
WOM 4 I will encourage family and friends to stay at this hotel.	4.16	0.807
WOM 5 I will recommend this hotel to someone who seeks my advice.	4.29	0.697

Table 9. Customer Engagement (WOM)

For WOM behaviors (Table 9), there were five items in total. Items listed in order from the highest mean to the lowest mean value were: a) I will say positive things about staying at this hotel (m=4.31, sd=0.67); b) I will recommend this hotel to someone who seeks my advice (m=4.29, sd=0.70); c) I will recommend this hotel to others through verbal communication (m=4.23, sd=0.75); d) I will encourage family and friends to stay at this hotel (m=4.16, sd=0.81); and e) I will recommend this hotel to others through online platforms (e.g. online review, social media, blog) (m=3.64, sd=1.03).

Refinement of Latent Variables through an EFA

In order to ensure the appropriateness of the data, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was calculated. The KMO statistic shows the comparison of partial correlations for a particular variable with respect to that variable's simple correlations (Spicer, 2005). The KMO value of 0.93 obtained demonstrated that there was a vigorous multivariate structure. Further, Bartlett's Test of Sphericity was significant ($p < 0.000$), also confirming the adequacy of running EFA. Seven factors emerged from the "fixed number of factors" extraction. These seven factors accounted for 64.63% of the total variance.

To reveal any potential discriminant and convergent validity issues, a pattern matrix was constructed. Pattern coefficients enable a comprehensive view of the intercorrelations between the variable and factor being tested (Spicer, 2005). In order to avoid discriminant validity issues, items for which the cross-loadings did not differ by at least 0.20 were deleted. Out of 43 attributes, 12 were deleted.

While one item ("The hotel was aesthetically appealing") was deleted for "Public design", four items ("The guest room had easily used features"; "The furnishings in the guest room were of high quality"; "The style of interior accessories was fashionable" and "The amenities in the room worked well") were deleted for "Room design". Three items ("The atmosphere of this hotel was pleasant"; "The temperature of this hotel was comfortable" and "The noise level of this hotel was minimal") were deleted for "Ambience", and four items ("I was pleased with the information this hotel's website provided"; "I was satisfied with the hotel employees at this hotel"; "I was satisfied with the design of this hotel" and "I was satisfied with the ambience of this hotel") were deleted for "Satisfaction". Variables for "Social", "Willingness to suggest", and "WOM" had no cross-loading problems. Thus, all of the items for those factors were retained. After the deletion of problematic items, all items remaining met the criterion for convergent validity. In addition, item-to-total correlations were all above the suggested value of 0.30 for the sample size of 310, with sufficient loadings ranging from 0.45 to 0.91 (Hair, Anderson, Tatham, & Black).

Lastly, the factor correlation matrix showed that correlations between factors did not exceed the threshold of 0.70. Correlations between factors should not exceed 0.70, as

this indicates a majority of shared variance. The alpha values of all the constructs used in this study exceeded the minimum requirement of 0.70 (Hair et al., 1998). The reliability alpha of the seven factors ranged from 0.81 to 0.91 (Social: 0.90, Public: 0.89, Room: 0.83, Ambience: 0.81, Satisfaction: 0.90, Suggest: 0.91, and WOM: 0.90). This indicated that the measurement items for each construct above were highly reliable in measuring the construct intended. These findings indicated that the seven factors extracted were statistically vigorous and appropriate for further analysis. The summary of EFA findings is presented in Table 10.

Factors	Factor Loading	Eigen Value	Variance Explained (%)	Reliability Alpha
<Social>		11.558	37.284	0.900
The hotel employees treated me in a courteous manner.	0.818			
The hotel employees were helpful.	0.757			
The hotel employees gave me prompt service.	0.787			
The hotel employees made me feel valued.	0.770			
The hotel employees behaved in a professional manner.	0.592			
There were enough employees at the hotel to provide good service.	0.708			
<Public>		3.928	12.670	0.890
The public spaces provided plenty of room.	0.827			
This hotel provided comfortable seating.	0.765			
This hotel had legible, visible signs in public areas.	0.773			
This hotel provided accessibility that meet my needs.	0.733			
This hotel's layout made it easy to get to where you wanted to go.	0.712			
This hotel had safety features.	0.551			
<Room>		1.612	5.199	0.830
It was easy to move about the room.	0.451			
The guest room was clean and properly supplied.	0.905			
The guest bathroom was clean and had attractive features.	0.692			
<Ambience>		1.011	3.261	0.810
The lighting of this hotel was pleasant.	0.449			
The background aroma of this hotel was pleasant.	0.867			
The background music of this hotel was pleasant.	0.604			
<Customer satisfaction>		0.742	2.393	0.900
Overall, I was satisfied with my experience staying at this hotel.	0.800			
I think I did the right thing in visiting this hotel.	0.769			
My choice to visit this hotel was a wise one.	0.723			
<Willingness to suggest>		0.633	2.043	0.910
If given a chance, I am willing to suggest improvements in design.	0.861			
If given a chance, I am willing to suggest improvements in ambience.	0.882			
If given a chance, I am willing to suggest improvements in the quality of service provided by hotel employees.	0.811			
If given a chance, I am willing to suggest improvements in the environmentally-friendly practices provided by the hotel.	0.629			
If given a chance, I am willing to suggest additional services.	0.778			
If given a chance, I am willing to suggest improvements in facilities.	0.842			
<WOM>		0.551	1.779	0.900
I will recommend this hotel to others through verbal communication.	0.837			
I will say positive things about staying at this hotel.	0.765			
I will encourage family and friends to stay at this hotel.	0.791			
I will recommend this hotel to someone who seeks my advice.	0.885			

Table 10. Exploratory Factor Analysis (EFA) Results

SEM procedure and Goodness-of-Fit Measures

The SEM analysis was conducted using Anderson and Gerbing's (1988) two-step approach. First, a CFA was performed to test the reliability and validity of the measurement model, as well as its fit. Second, SEM was performed to estimate the hypothesized structural model and examine the relationships among a hotel's physical environment elements, customer satisfaction, and customer engagement.

Measurement Model through CFA

To confirm whether the constructs suggested by the EFA fitted the data, a CFA was performed.

Initial CFA Model

A 31-item CFA, consisting of six items from the social factor, six items from the public design factor, three items from the room design factor, three items from the ambience factor of the physical environment, three items from customer satisfaction, six items from willingness to suggest and four items from WOM was computed first.

The goodness-of-fit statistics of the CFA were as follows. The results of the initial CFA for the measurement model showed a moderate fit (X^2 = 752.64, d.f. = 414, normed X^2 = 1.82, $p < 0.000$; RMSEA = 0.05; IFI = 0.87; NFI = 0.89; CFI = 0.95, and TLI = 0.94). IFI and NFI, among major indices, did not achieve an acceptable level (0.09), indicating that the initial CFA was only a moderate fit and might not satisfy the overall model fit (Hair, et al., 1998).

To validate the constructs developed, the reliability and validity of the measurement model was estimated with a CFA in which each measurement item was

loaded on its latent variables, allowing those variables to be correlated in the analysis (Gerbing & Anderson, 1988). The alpha values of the seven constructs used in this study exceeded the minimum criterion for reliability of 0.70. The results showed that these multiple measurement items were highly reliable for measuring each construct. All standardized loadings for latent constructs in the CFA were high and significant in the range of 0.64 and 0.88, suggesting that criteria for both reliability and convergent validity were met (Gerbing & Anderson, 1988). In addition, the value of the average variance extracted (AVE) exceeded the minimum criterion of 0.50, confirming convergent validity (Hair, Anderson, Tatham & Black, 1998). However, there was an issue with discriminant validity, as three constructs among the seven ("Public", "Room" and "Ambience") failed to exceed the highest square of the estimated correlation between different constructs (Fornell & Larcker, 1981). Therefore, a revision of the model was sought.

The evaluation of goodness-of-fit statistics suggested that model modification was needed. Model modification is a method of altering the model in such a way that it produces a better fit by yielding acceptable values of goodness-of-fit statistics (Hoyle, 2011). To deal with discriminant validity issues, 4 items ("Social 2", "Public 2", "Public 4" and "Public 7") were deleted. This was based on Cohen et al.'s (2003) suggestion to drop variables that account for insufficient discriminant validity in the model.

Final CFA Model

After these changes, the revised CFA was found to have a good fit (X^2 = 546.12, d.f. = 303, normed X^2 = 1.80, p = 0.000; RMSEA = 0.05; IFI = 0.96; NFI = 0.90; CFI = 0.96, and TLI = 0.95). All the fit indices of the revised model were improved

considerably. The model fit indices of the measurement model and the cut-off value of those fit indices are presented in Table 11.

	Measurement model	Indexes of the model	Goodness of fit criterion
Model fit statistics	Chi-square	546.118	
	Degree of freedom	303	
	Normed chi-square	1.802	1.0~3.0
	Incremental Fit Index (IFI)	0.955	>0.9
	Normed Fit Index (NFI)	0.904	>0.9
	Comparative Fit Index (CFI)	0.955	>0.9
	Tucker-Lewis Index (TLI)	0.947	>0.9
	Root Mean Square Error of of Approximation (RMSEA)	0.051	<0.05: good fit

Table 11. Goodness-of-Fit Measures for the Measurement Model

In the revised model, a total of 27 items were used. For the "Physical environment", while the latent variable "Social" consisted of 5 observed variables, the remainder of the latent variables: "Public", "Room" and "Ambience" each consisted of 3 observed variables. "Customer satisfaction" consisted of 3 observed variables. Finally, for "Customer engagement", the latent variable "Willingness to suggest" consisted of 6 observed variables, while the latent variable "WOM" consisted of 4 observed variables. Descriptive statistics for the final attributes used are presented in Table 12.

Factors	Mean	SD
(S)Physical environment elements		
<Social>		
The hotel employees treated me in a courteous manner.	4.24	0.759
The hotel employees gave me prompt service.	4.12	0.800
The hotel employees made me feel valued.	4.02	0.868
The hotel employees behaved in a professional manner.	4.29	0.789
There were enough employees at the hotel to provide good service.	4.21	0.792
<Public>		
The public spaces provided plenty of room.	4.02	0.798
This hotel had legible, visible signs in public areas.	3.91	0.875
This hotel's layout made it easy to get to where you wanted to go.	4.05	0.844
<Room>		
It was easy to move about the room.	4.27	0.811
The guest room was clean and properly supplied.	4.35	0.703
The guest bathroom was clean and had attractive features.	4.34	0.761
<Ambience>		
The lighting of this hotel was pleasant.	4.15	0.817
The background aroma of this hotel was pleasant.	3.97	0.847
The background music of this hotel was pleasant.	3.74	0.855
(O) Customer satisfaction		
<Customer satisfaction>		
Overall, I was satisfied with my experience staying at this hotel.	4.45	0.614
I think I did the right thing in visiting this hotel.	4.41	0.685
My choice to visit this hotel was a wise one.	4.42	0.627
(R) Customer engagement		
<Willingness to suggest>		
If given a chance, I am willing to suggest improvements in design.	2.91	0.988
If given a chance, I am willing to suggest improvements in ambience.	2.92	1.011
If given a chance, I am willing to suggest improvements in the quality of service provided by hotel employees.	2.92	1.070
If given a chance, I am willing to suggest improvements in the environmentally-friendly practices provided by the hotel.	3.03	1.076
If given a chance, I am willing to suggest additional services.	3.12	1.063
If given a chance, I am willing to suggest improvements in facilities.	2.96	1.061
<WOM>		
I will recommend this hotel to others through verbal communication.	4.23	0.752
I will say positive things about staying at this hotel.	4.31	0.669
I will encourage family and friends to stay at this hotel.	4.16	0.807
I will recommend this hotel to someone who seeks my advice.	4.29	0.697

Table 12. Descriptive Statistics for Final Attributes

The alpha values were all greater than 0.70 and ranged from 0.80 to 0.91 ("Social" = 0.89; "Public" = 0.80; "Room" = 0.83; "Ambience" = 0.81; "Satisfaction" = 0.90; "Willingness to suggest" = 0.91, and "WOM" = 0.90). All standardized loadings for latent constructs in the CFA were high and significant in the range of 0.65 and 0.87, suggesting that criteria for both reliability and convergent validity were met (Gerbing & Anderson, 1988). Further, as the value of average variance extracted (AVE) exceeded the minimum criterion of 0.50 (Hair, et al., 1998), convergent validity was assured as well. In addition, the lowest AVE among the seven constructs exceeded the highest square of the estimated correlation, thus meeting the criterion for discriminant validity (Fornell & Larcker, 1981). A summary of the findings of the CFA is presented in Table 13; the CFA model is shown in Figure 2.

Factors (Cronbach's α)	Standardized loading	t-Statistic	*p*-Value	Construct reliability	AVE
(S)Physical environment elements					
<Social> (0.89)				0.886	0.609
The hotel employees treated me in a courteous manner.	0.772				
The hotel employees gave me prompt service.	0.780	14.223	<0.001		
The hotel employees made me feel valued.	0.793	14.499	<0.001		
The hotel employees behaved in a professional manner.	0.757	13.746	<0.001		
There were enough employees at the hotel to provide good service.	0.798	14.600	<0.001		
<Public> (0.80)				0.797	0.567
The public spaces provided plenty of room.	0.752				
This hotel had legible, visible signs in public areas.	0.785	12.767	<0.001		
This hotel's layout made it easy to get to where you wanted to go.	0.721	11.830	<0.001		
<Room> (0.83)				0.835	0.629
It was easy to move about the room.	0.740				
The guest room was clean and properly supplied.	0.816	13.554	<0.001		
The guest bathroom was clean and had attractive features.	0.821	13.633	<0.001		
<Ambience> (0.81)				0.812	0.591
The lighting of this hotel was pleasant.	0.741				
The background aroma of this hotel was pleasant.	0.825	13.220	<0.001		
The background music of this hotel was pleasant.	0.737	12.054	<0.001		
(O) Customer satisfaction					
<Customer satisfaction> (0.90)				0.896	0.743
Overall, I was satisfied with my experience staying at this hotel.	0.852				
I think I did the right thing in visiting this hotel.	0.879	19.433	<0.001		
My choice to visit this hotel was a wise one.	0.854	18.621	<0.001		
(R) Customer engagement					
<Willingness to suggest> (0.91)				0.915	0.645
If given a chance, I am willing to suggest improvements in design.	0.875				
If given a chance, I am willing to suggest improvements in ambience.	0.878	21.010	<0.001		
If given a chance, I am willing to suggest improvements in the quality of service provided by hotel employees.	0.809	18.133	<0.001		
If given a chance, I am willing to suggest improvements in the environmentally-friendly practices provided by the hotel.	0.637	12.608	<0.001		
If given a chance, I am willing to suggest additional services.	0.760	16.333	<0.001		
If given a chance, I am willing to suggest improvements in facilities.	0.833	19.092	<0.001		
<WOM> (0.90)				0.897	0.686
I will recommend this hotel to others through verbal communication.	0.813				
I will say positive things about staying at this hotel.	0.874	17.672	<0.001		
I will encourage family and friends to stay at this hotel.	0.802	15.780	<0.001		
I will recommend this hotel to someone who seeks my advice.	0.822	16.327	<0.001		

Table 13. Confirmatory Factor Analysis (CFA) Results

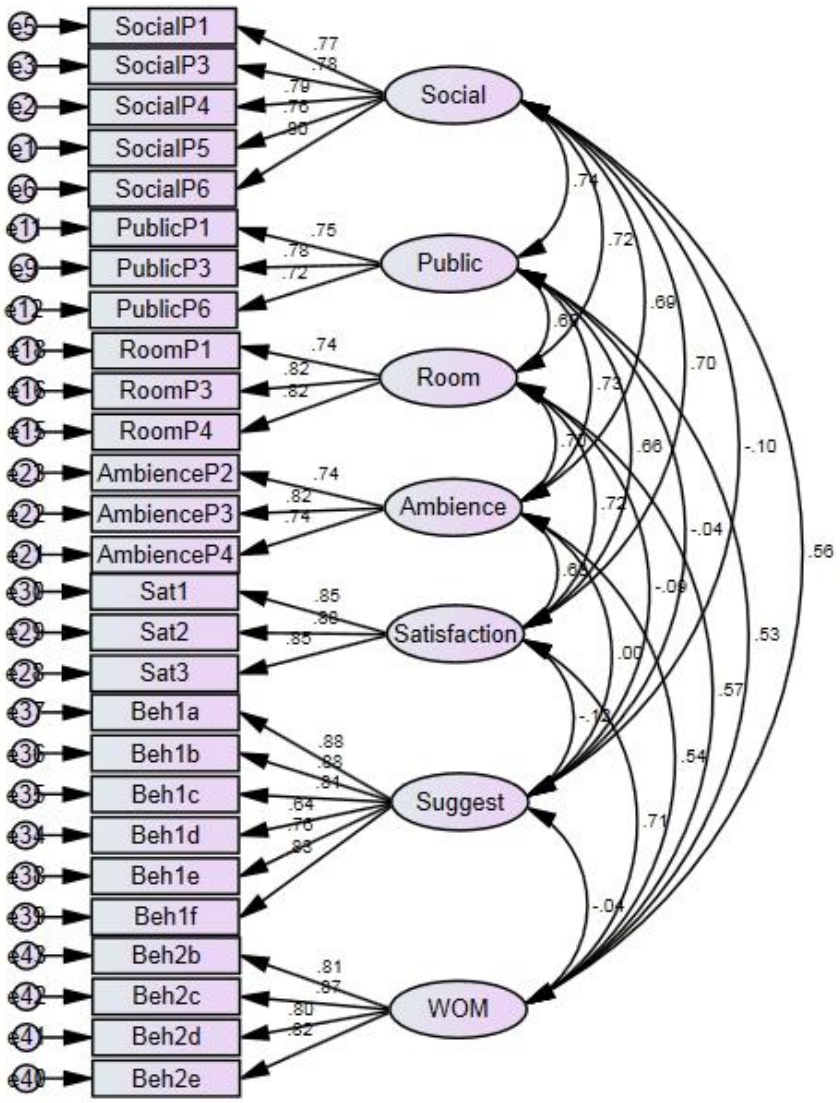

Figure 2. A Measurement Model

Structural Model through an SEM

Goodness-of-Fit Measures

The goodness-of-fit statistics showed that the structural model fit the data very well (X^2 = 555.054, d.f. = 313, normed X^2 = 1.773, $p < 0.001$; RMSEA = 0.05; IFI = 0.96; NFI = 0.90; CFI = 0.96, and TLI = 0.95). The model fit indices of the structural model are presented in Table 14. For the overall structural model, the value of X^2 was significant ($p < 0.001$). This suggested that there is a difference between the sample covariance matrix S and the reproduced implied covariance matrix Σ that was created on the basis of the theoretical model (Schumacker & Lomax, 2004). This could be due to the large sample size. The value of the normed X^2 (1.77), however, indicated that the model was an acceptable fit. RMSEA, which measures the root mean square error per degree of freedom was 0.05; which is considered to be a good fit. Other goodness-of-fit indices commonly-used, such as IFI, NFI, CFI, and TLI, were also examined, and all met the proposed criterion of 0.90 or higher. Therefore, the results showed that the structural model fit the data well and therefore, it was appropriate to examine the statistical significance of each hypothesized relationship among the variables.

	Measurement model	Indexes of the model	Goodness of fit criterion
Model fit statistics	Chi-square	555.054	
	Degree of freedom	313	
	Normed chi-square	1.773	1.0~3.0
	Incremental Fit Index (IFI)	0.955	>0.9
	Normed Fit Index (NFI)	0.903	>0.9
	Comparative Fit Index (CFI)	0.955	>0.9
	Tucker-Lewis Index (TLI)	0.949	>0.9
	Root Mean Square Error of of Approximation (RMSEA)	0.050	<0.05: good fit

Table 14. Goodness-of-Fit Measures for the Structural Model

Standardized Parameter Estimates

Standardized coefficients were estimated using the Maximum Likelihood Method with standardized factor loadings. As standardized coefficients allow variables to be measured on the same scale, they have the advantage of determining the relative importance of each variable when compared to other variables in the analysis (Schumacker & Lomax, 2004). The signs (+/-) of parameter coefficients indicate whether the relationship between latent variables is positive or negative. Among the six relationships tested, three were found to be significant at $p < 0.05$, and one was significant at $p < 0.10$. Table 15 and Figure 3 show the results of the structural model.

The "social" element of the physical environment ($\beta = 0.248$, $t = 3.237$, $p = 0.001$) and the "room design" element ($\beta = 0.311$, $t = 4.083$, $p = 0.001$) had statistically significant positive effects on customer satisfaction, indicating that both of these elements of the physical environment were important antecedents of customer satisfaction. On the other hand, the "public design" element of the physical environment ($\beta = 0.127$, $t =$

1.512, p = 0.131) and the "ambience" element (β = 0.079, t = 1.034, p = 0.301) had no statistically significant influence on customer satisfaction.

While customer satisfaction had statistically significant effects on both "willingness to suggest" (β = -0.187, t= -1.793, p = 0.073) and "WOM" (β = 0.850, t = 11.964, p = 0.001), "willingness to suggest" had a negative relationship with customer engagement, while "WOM" had a positive relationship. As mentioned above, "willingness to suggest" was only significant at $p < 0.10$, while "WOM" was significant at $p < 0.01$. These results suggest that while satisfied customers are less willing to give suggestions for improvements in service, they are more willing to advertise the hotel through WOM.

In summary, this study investigated the structural relationships among physical environment elements, customer satisfaction, and customer engagement. As noted above, the final results suggested that while Hypotheses 1, 3, 5, 6 were supported, Hypotheses 2 and 4 were not supported. Figure 4 shows the final result of the theoretical model.

The following are the hypotheses and the above statistical results may be summarized as:

H1: The social element of the physical environment influences customer satisfaction. The results of SEM suggested that the social element of physical environment is an important antecedent to customer satisfaction.

H2: The public design element of the physical environment influences customer satisfaction.

The results of SEM suggested that the public design element of physical environment is not an important antecedent to customer satisfaction.

H3: The room design element of the physical environment influences customer satisfaction.

The results of SEM suggested that the room design element of physical environment is an important antecedent to customer satisfaction.

H4: The ambience element of the physical environment influences customer satisfaction.

The results of SEM suggested that the ambience element of physical environment is not an important antecedent to customer satisfaction.

H5: Customer satisfaction influences customers' willingness to suggest.

The results of SEM suggested that satisfied customers are less likely to offer suggestions for improvements in service.

H6: Customer satisfaction influences customers' WOM.

The results of SEM suggested that satisfied customers are more likely to advertise the hotel through WOM.

Path	Standardized Estimate	t-Statistic	p-Value	Relationship
Customer satisfaction ← Social	0.248	3.237	0.001***	+As hypothesized
Customer satisfaction ← Public	0.127	1.512	0.131	+Not as hypothesized
Customer satisfaction ← Room	0.311	4.083	0.001***	+As hypothesized
Customer satisfaction ← Ambience	0.079	1.034	0.301	+Not as hypothesized
Willingness to suggest ← Customer satisfaction	-0.187	-1.793	0.073*	-As hypothesized
Word of Mouth ← Customer satisfaction	0.850	11.964	0.001***	+As hypothesized

*** p<0.01.
** p<0.05.
* p<0.1.

Table 15. Structural Equation Model (SEM) Results

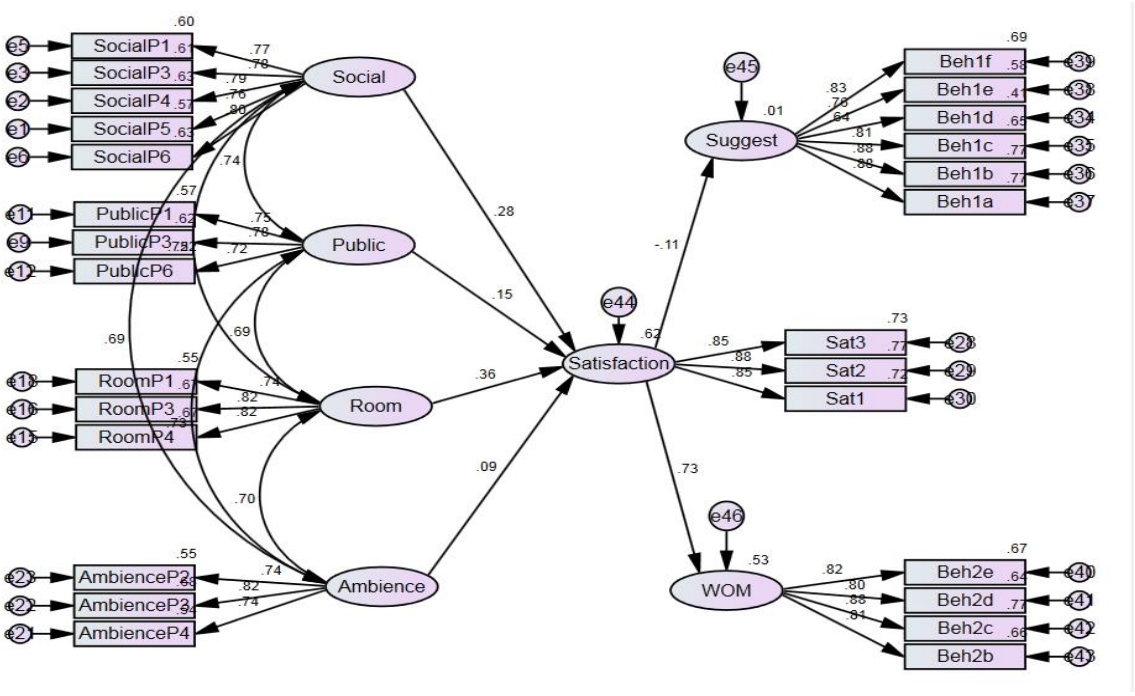

Figure 3. A Structural Model

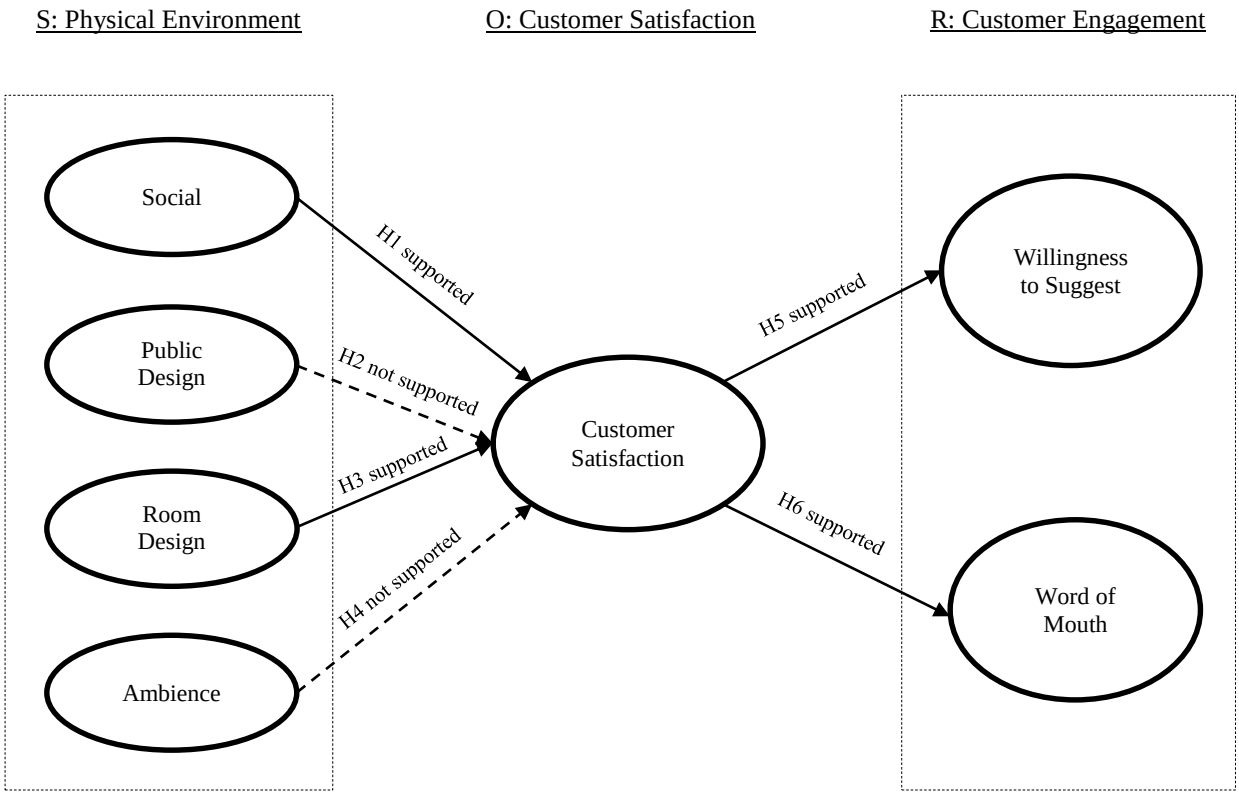

Figure 4. Results of the Structural Model

CHAPTER 5: DISCUSSION AND CONCLUSIONS

Customers tend to perceive and evaluate services using multiple cues during and after the service delivery. Previous scholars have revealed that the physical environment where services take place plays an essential role in such settings, especially if service is prolonged. However, it should be noted that customers not only evaluate service during the transaction itself, but their evaluation can continue beyond the transaction to the firm as well. The implications of this study for service industries include ways in which firms can manage customer engagement proactively during and after the service, and whether or not different elements of the physical environment that firms provide actually promote positive feelings in customers (customer satisfaction) and induce desired behaviors (customer engagement). Thus, the study addressed how service firms can plan, design, and manage these physical elements systematically in order to engage customers. This theme guided the research questions.

The influence of elements of the physical environment on customer engagement is important, especially in the hospitality industry where the core service includes uncertainty due to the intangible nature of services. As tangible physical environment elements serve to enhance customers' perceptions of intangible characteristics of service, identifying physical environment elements that are sought by customers should be a top priority in firms' allocations of business resources. Previous research has revealed that

physical environment elements tend to evoke varying levels of emotion among customers (Baker, Levy, & Grewal, 1992; Baker & Cameron, 1996; Baker, et al., 2002; Bitner, 1992a). In this research, the results revealed that each element of the physical environment contributed differently to customer satisfaction with regard to the coefficients explained. However, while room design and social elements had significant effects, public design and ambience elements did not. According to the standardized coefficients of the structural paths of the model, the room design element made the greatest contribution to customer satisfaction, followed by the social element. Both public design and ambience elements, which did not contribute to customer satisfaction, had nearly equal and relatively low coefficients. The results showed that upscale hotels should focus on room design and social features of the physical environment in order to better appeal to hotel guests. These are rather surprising findings, as past research has shown that ambient factors (i.e., lighting, background fragrances and music) have a strong effect on people's emotional states (Hirsch, 1995; Lin, 2004). In addition, it also raises the question of why room design was significant, while public design was not, when both were derived from the same underlying design concept in Baker's (1980) typology of the physical environment.

The difference could be due to the fact that the respondents were previous customers of high-end hotels. High-end hotel customers come with a priori expectations that public design and ambience elements are ensured; consequently, when these elements are of the desired caliber, relatively little additional satisfaction is required. Hence, these public and ambience elements may not serve as a competitive advantage

over other upscale hotels, and thus, may contribute little in gaining customers' satisfaction. This shows that public and ambience elements may be necessary, but not sufficient. Rather, the competitive advantage of physical environment elements is based more on the room design and social elements. Customers spend more time in their rooms than in public areas and expectations for comfort are higher in the former. These two elements differentiate one hotel from another and may serve as the more important reasons for people to choose a particular hotel. Below are some detailed perspectives on why the room design and social elements may have a more significant influence on customer satisfaction.

Room design may have more functional relevance compared to the other three physical environment elements (social, public design and ambience). Functionality may be the most important factor in determining customer satisfaction, given that it is the core service customers are purchasing. Without functionality, it is less likely that customers will be satisfied with their purchase. Therefore, carefully identifying attributes that accentuate or reinforce functionality of room design is essential. The results of this study suggested that room design needs to include features such as ease in moving about the room, a clean and attractive room, and a clean and properly supplied bathroom.

An example of this can be seen in the case of the Westin hotels. In 2004, Westin was ranked highest in terms of guest satisfaction according to J. D. Power and Associates North America Hotel Guest Satisfaction Study (Berry et al., 2006). The reason for their success was solely due to Westin's investment in the appeal and comfort of its guest bedrooms. Westin introduced a guest bed, the "Heavenly Bed," with everything

purposefully prepared in white to signal to its customers that their beds are clean; the guest bed included features such as a custom-made, pillow-top mattress, a down comforter, high thread count linens, and dust ruffle (Berry et al., 2006). Later, the concept of the "Heavenly shower" was also introduced; this included features such as a curved curtain rod and dual shower-head (Chittum, 2004). As can be seen from Westin's example, the guest room and bathroom are factors that contribute significantly to the satisfaction of their customers. The implication drawn from this example is that investment in the identified attributes of a guest room will pay off in terms of increased customer satisfaction.

However, while functionality of the room design may be one important factor that offers core benefits to customer satisfaction, social elements of service providers may also be essential in generating customer satisfaction and must be taken into consideration as well. It may be that while room design meets customers' functional needs, customers' emotional needs are fulfilled by personalized service from staff. This is where the social element of the physical environment creates value. Hotel services are labor-intensive; therefore, the interaction between the customers and staff providers may lead to an emotional connection between those two parties. The social element would include such features as having enough employees to provide good service, as well as having employees who treat guests in a courteous, prompt, and professional manner, while making them feel valued.

For example, at the W hotel in Boston, service providers are trained to act like "the cast of a theatrical production with hotel guests in the starring role" (Chase, 2009).

This combines all the features that are outlined in this study. The W hotel not only expects this from their staff, but it also treats them in a similar manner, for example, by using the term "stylists" to refer to housekeepers.

In addition to what has been outlined above, it could be the case that these two physical environment elements (room design and social) also have more to do with a "personal preference" factor than do the other two elements (public design and ambience). These two elements involve the most contact with customers, and hence, the customers' preference might also have more effect. For example, the room design element tends to vary greatly among different hotels, and may even vary within the same hotel depending on the room size, environment, and location. Indeed, this may be the main reason why people choose a particular hotel, indicating that personal preference has the greatest effect. Not only the guest room features themselves, but how the staff treats guests during the service delivery process can affect emotional responses based on personal preference as well. There is more variation in the services being provided, and if customers form a personal relationship with providers, this may also create a special reason why people choose a particular hotel, indicating that staff should cater to customers' personal preferences.

Given that physical environment elements affect customer satisfaction, past research still raises questions about the sufficiency of customer satisfaction as the best indicator to explain their behavioral outcomes (Babin & Attaway, 2000; Jones & Sasser, 1995). Further, other findings have also stipulated a positive relationship between customer satisfaction and customer engagement (Bowden, 2009). Therefore, this research

proposed that customer engagement is the behavioral outcome and its role in influencing future behaviors is associated with customers' past hotel stays. This emphasizes a shift in the perspective of customers' behavioral outcomes from transient one-time transactions to long-lasting relationships.

Brodie et al. (2011) defined customers as "prosumers" who contribute to co-creating service rather than as mere recipients of service. Specifically, Van Doorn et al. (2002) considered C2F interactions and WOM behavior as aspects of customer engagement behaviors. Consistent with this argument, the results of this study showed that positive satisfaction evoked during hotel service makes an important contribution to both customer engagement behaviors, willingness to suggest, and WOM behavior. According to the standardized coefficient of the structural paths of the model, WOM behavior is influenced more by customer satisfaction than is willingness to suggest. Customer satisfaction was related positively to WOM behavior, indicating that when customers are more satisfied, they are likely to make positive remarks to others about the hotel. On the other hand, customer satisfaction was related negatively to willingness to suggest, indicating that when customers are more satisfied, they are less likely to make suggestions.

This is an interesting finding, as these two factors have opposite relationships, although both are ostensibly part of the same underlying concept of customer engagement. The result of WOM behavior is consistent with past research, which has shown that a high level of satisfaction leads to more WOM behaviors (Anderson, Fornell, & Mazvancheryl, 2004; Bowden, 2009). WOM behaviors identified in this research

included recommending the hotel to others through verbal communication, recommending the hotel to someone who seeks advice, encouraging family and friends to stay at a particular hotel, and saying positive things about their stay at the hotel. On the other hand, the results for willingness to suggest are not consistent with past research that has found a high level of satisfaction leads to willingness to suggest behaviors (Van Doorn, 2010). Willingness to suggest behaviors identified in this research included suggesting improvements in design, ambience, and quality of service provided by hotel employees, environmentally-friendly practices provided by the hotel, additional services and improvements in facilities. Below are some perspectives on the reasons for these differences.

Even though both "willingness to suggest" and "WOM" are considered to be customer engagement behaviors, the difference between these two is that, while "willingness to suggest" addresses a C2F relationship, "WOM" addresses a C2C relationship. The positive relationship between customer satisfaction and WOM behavior could be an indicator that customers were satisfied with their past hotel stay, and thus are willing to recommend the hotel to others. However, the negative relationship between customer satisfaction and willingness to suggest could be due to the fact that customers are unwilling because they have nothing special to suggest, given that they are already satisfied with the hotel's physical environment.

Various firms have begun to recognize the potential benefits of customer engagement and thus are implementing different marketing strategies to engage their customers. For example, the Ritz-Carlton was ranked the first in PeopleMetrics' Most

Engaged Customer study for two years in a row (Peoplemetrics, 2010). By engaging its customers, the Ritz- Carlton has achieved high customer loyalty and a high retention rate, in addition to customers' advocacy and passion for the Ritz-Carlton.

Theoretical Implications

Several theoretical implications can be drawn from this study. First, this research has developed a framework that addresses the recent call for research on customer engagement from the Marketing Science Institute (MSI)'s 2010–2012 Research Priorities (MSI Research Priorities, 2010). This study based the definition of customer engagement on the notion that customers want to be in the physical environment where the service is provided, and that being in the setting gives them a sense of satisfaction. Thus, this research goes beyond the exploration of customer satisfaction as a transient behavioral outcome, and expands the boundary to include customer engagement as a long-term, ongoing relationship with the firm. This research was successful in providing evidence that customers do have an interest to engage with the firm after the service transaction and even after they have left the site.

Second, this study makes an important contribution to the development of a customer engagement construct as a behavioral outcome by capturing not only the C2C interactions, but also the C2F interactions. Although the C2F interactions were found to have a negative relationship in this study, this may simply mean that satisfied customers have nothing to suggest, indicating that upscale hotels are doing a good job in providing high-quality services to their customers. It still highlights the importance of customer value co-creation, where customers are willing to contribute to the firms' efforts to

improve its service offerings. This is one of the few studies that has developed an empirical measure of customer engagement, including customers' willingness to suggest improvements to the firm.

Third, past research has suggested that the physical environment plays an important role in customer satisfaction, and that customer satisfaction promotes customer engagement. However, until now, these relationships have not been examined in a systematic way to provide clear findings that contribute to theory and practice. Therefore, this research was designed to make a noteworthy contribution to the literature by incorporating these three concepts simultaneously (physical environment elements, customer satisfaction, and customer engagement) and providing a unifying framework of underlying customer behaviors using the S-O-R paradigm. No prior research has used the S-O-R paradigm to delve into the concept of customer engagement.

Moreover, the majority of past studies that have used the S-O-R paradigm have put more emphasis on the R than the S variable. Therefore, by broadening the scope of Baker's (1986) model into the hotel context, this research outlined how an S variable (physical environment of hotels) affected the R variable (customer engagement) as an ultimate outcome.

Fourth, prior research has not examined the effects of the physical environment on hotel customer engagement. This has resulted in a very limited number of instruments to measure customers' evaluations of physical environment elements in hotels. Thus, this research contributes to the literature by providing a theoretical framework that examines

physical environment elements in the hotel context to understand customer engagement as a consequence of satisfaction derived from the physical environment.

Fifth, Baker's (1986) original model of the physical environment considered only three major factors—social, ambience, and design elements. However, to improve our understanding of the hotel environment, this research further divided the design element into public and room design elements, both of which are critical aspects of design. In this regard, this study makes a further contribution to theory by advancing Baker's (1986) typology for modeling the physical environment. The difference in the results between these two specific elements highlights the importance of considering both factors when examining hotel design.

Sixth, this research also contributed by adopting a Gestalt approach. Different elements within a hotel's physical environment were accounted for simultaneously and were found to play different roles in creating satisfaction that led to customer engagement. Every service environment consists of myriad stimuli that confront customers during service transactions. Past studies have suggested that customers evaluate service according to a variety of stimuli and that they configure multiple parts of a physical environment into holistic images. However, no one has so far considered a Gestalt approach that leads to the behavioral outcome of customer engagement. Therefore, by incorporating the Gestalt approach, this study succeeded in considering the simultaneous effects of different physical environment elements in developing customer engagement.

Managerial Implications

The findings of this study also include some valuable implications for service industry practitioners and managers. Understanding customer behavior has never been so important to service firms. Only recently have practitioners begun to grasp the concept of customer engagement. Although firms are making an effort to foster customer engagement as their marketing strategy, many are still struggling to implement and measure customers' engagement with the firm. So far, few studies have tried to understand and conceptualize the concept of customer engagement in a hotel context.

Some of the metrics used for measuring customer engagement include those of sales volume and frequency of site visits. However, although this might provide a firm with a general idea of customer engagement, it has some limitations, in that it does not take into consideration customers' behaviors and opinions, which may better represent the idea of customer engagement. Rather, firms should try to identify a few important factors that may lead to customer engagement and put more emphasis on those. The findings from this study provide managers with practical implications that may inform and aid their understanding of customer engagement, and identify factors that enhance engagement.

As mentioned previously, this research based the definition of customer engagement on the notion that customers want to be in the physical environment where the service is provided, and that being in the setting gives them a sense of satisfaction. In this respect, designing the physical environment in a way that creates active participation is important. Findings from this study suggested that room design and social elements of

the physical environment contribute to customer satisfaction. However, merely satisfying customers with these elements of the physical environment is not enough to develop customer engagement. In order for customers to be engaged, there has to be an ongoing, two-way interaction between parties. Findings suggested that positive satisfaction evoked during hotel service contributes importantly to customer engagement behavior, consisting of willingness to suggest and WOM behavior. Some examples of this include mentioning the service experience to family, friends, and acquaintances, or even providing suggestions to the firm to help it improve its products and services.

The guest room design element appeared to be the most important factor, followed closely by the social element. Suppose a hotel has high ratings on all physical environment elements but room design. When the overall rating of room design element drops (i.e., the customer has a substandard room), it will decrease the satisfaction score the most. However, suppose a hotel has high ratings on all physical environment elements other than social. A drop in the social element will have the second largest effect on customer satisfaction. On the other hand, both the public design and ambience elements will not have a considerable effect on customers' satisfaction scores, regardless of the increase or decrease in their ratings.

Whilst both room design and the social element have significant influences on customer satisfaction, compared to the social element, the room design element is relatively easy to change, as it entails only investing, renovating, and carefully allocating necessary resources to the room. However, the social element, which refers to the services employees provide to customers, is more varied. The services provided to

customers by different staff must always be constant and of high quality, regardless of who is providing the service. Considering that there is a high turn-over rate among hotel employees, the social element will be more difficult and expensive to change than the room design element. Considering this, it may be helpful for managers to recognize that the room design element is more important than the social element. However, this does not mean that hotels can neglect the social element. If hotels do not achieve high quality service, it may affect the room design element as well, for example, if the housekeeper does a poor job of cleaning the room.

In terms of the effects of customer satisfaction on engagement, an increase in satisfaction will lead to an increase in WOM, but to a decrease in willingness to suggest. With respect to the latter, it would be helpful to firms if customers made more suggestions for any necessary improvements that the hotels should make. These results indicated, however, that customers are not likely to make suggestions when they are satisfied. The overriding reason for this may be that when customers are satisfied, they have few suggestions for improvement. On the other hand, the fact that highly satisfied customers are more willing to make WOM recommendations is an excellent opportunity for firms.

Therefore, firms should focus more on the effective design of their rooms and the social element of the physical environment. Satisfying customers with design and social elements can increase participation and involvement, leading to more engaged customers. This could be achieved by reflecting the design of the guest room based on customers' suggestions for improvements. Indeed, because customers use the various services

offered by the hotel, hotel management works hardest to please them. Many hotel firms have started to encourage customers to provide suggestions regarding the design of their properties in an effort to make them more pleasant and customer-friendly (Sathyanarayanan & Khan, 2014). According to Sathyanarayanan and Khan (2014), some of the essential room design attributes that have stemmed from customers' requests are sound-proof rooms, ample electrical outlets, and blackout curtains. Managers can use various strategies to elicit such information from customers and then try to implement those in the design of their guest rooms. These actions will satisfy customers, not only because the firm was able to meet their needs, but also because they may be proud to participate in value co-creation.

Another implication is the need to train service providers in a way that promotes customer engagement. For example, the Ritz-Carlton provides its employees with a mission statement, referred to as the "Credo." The credo incorporates promises with respect to how staff must serve their customers, and includes the offer, care, consistency, trust, effort and authenticity (Peoplemetrics, 2010). To promote consistency in their service, the Ritz-Carlton makes this credo a part of its employees' daily routine by displaying it on their uniforms, as well as making them read it aloud before starting work each morning. Given the example of Ritz-Carlton's credo, developing something similar would enhance customers' satisfaction with service providers. Programs that implement employee reward systems or other innovative incentives could also be used to enhance employee performance. However, firms can do more than this and engage customers in the process as well. For example, if a customer complimented a particular staff member

on his/her service, not only the service provider should be recognized for the excellent service, but the firm should also send the guest a thank you letter for his/her contribution in identifying and recognizing outstanding service. Such simple, but effective actions would promote customers' interest in engaging with the firm. After all, most customers want to be acknowledged that their business is valued and appreciated. Demonstrating these forms of customer engagement may even lead to a win-win situation for both the firm and the customer. Firms can cut their costs of investment in unnecessary elements that do not engage customers, and still have satisfied customers who will be happy with service that meets or even exceeds their expectations.

Limitations and Future Studies

First, the survey was conducted based on respondents' visits to an upscale hotel within the past year for at least one overnight stay. This resulted in a gap in time between the respondents' stay at a hotel and the actual time that the survey was conducted. Thus, they may not have remembered their stay well enough to provide accurate evaluations. Ideally, in future studies, surveys should be conducted onsite. This would enable respondents to have direct contact with the hotel's physical environment and recall their stay well. By conducting the survey onsite, it would also enable researchers to distinguish the three separate measurement items of physical environment elements, customer satisfaction and customer engagement more accurately by conducting separate surveys at two different times. All three concepts of physical environment elements, customer satisfaction and customer engagement were measured at the same time in this study, although the proposed model showed a progression in these three concepts from physical

environment elements to customer engagement. For example, responses with respect to the physical environment can be collected first while customers are still in direct contact with the hotel's environment; thereafter, responses can be elicited with regard to customer satisfaction and customer engagement after the customers have experienced the physical environment elements.

Second, the upscale hotels that respondents were asked to self-select were not restricted to one particular chain of hotel brands but rather, respondents could take into consideration any hotel with a 4 star rating and above. As different hotels are equipped with different physical environment elements, this may have introduced variation in the results. Ideally, in future studies, the survey could still be conducted in the context of upscale hotels, but could be divided into different hotel brands.

Third, this study did not take into consideration hotels' different market segments. For example, business hotel customers might have different needs and wants for physical environment elements compared to leisure customers, especially customers travelling with children. Therefore, this study had the shortcoming of not distinguishing the different needs of specific market segments when examining relevant hotels' physical environment elements. Ideally, future studies should also address the different physical environment elements that meet specific needs of different market segments.

Fourth, this study surveyed only high-end hotel customers to investigate their involvement with the physical environment elements that lead to customer engagement. Lower-end hotel customers might possess different characteristics when engaging with limited-service hotels. As limited-service hotels might have different types of physical

environment elements compared to high-end hotels, identifying attributes that meet the specific needs of limited-service hotels should also be considered for the future study.

In addition to the limitations outlined above, some suggestions for future research that may be derived from the interpretation of the findings are as follows. As this study has shown, the room design element had a positive relationship with customer satisfaction, while the public design element did not. It is unclear why the results of these two differed when, in fact, they are derived from the same underlying design element of the physical environment suggested by Baker (1986). Similarly, this study demonstrated that the willingness to suggest had a negative relationship with customer satisfaction, while WOM had a positive relationship. These different results were also derived from the same underlying element of customer engagement suggested by Van Doorn (2010). As this research is only a beginning in understanding how different physical environment elements influence customer satisfaction that then leads to customer engagement, future studies could use these constructs to study customer engagement in other service contexts and also reveal the underlying differences between the two.

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Appendix A: Survey Questionnaire

Customer Engagement Survey - Final

You have been invited to participate in a project being conducted by the researchers from The Ohio State University. The principal investigator Dr. Jay Kandampully is a professor in the Department of Human Sciences. The co-investigator, Hyeyoon Choi, is a Ph. D. student in the Department of Human Sciences. The purpose of this survey is to help the researchers to understand customers' hotel engagement. We would like to know your experience on your previous hotel stay within one year time, from the moment you walked in to the time you left. The research aims to identify the link between a hotel's physical environment characteristics and customer interaction with a firm. This information has implications for the hotel industry to increase the probability of positive customer behavioral outcomes. As a hotel customer, you may eventually benefit from the information gained by the hotel industry. We are asking you to conduct the survey using the questionnaire being provided. The survey will take you approximately 15 - 20 minutes to complete. This is an anonymous survey and your participation in this study is entirely voluntary. By conducting the survey, you are consenting to participate in the study. Respondents will not be asked to criticize any person or business; therefore, risks to you are believed to be minimal. A refusal to participate involves no penalty and you may discontinue participation at any time. You are not required to provide your name, and your responses will be used solely for the purpose of this study. Your responses will be kept confidential. Only the investigators will retain the copy of the response. But, because we are using the internet, there is a chance that someone could access your online responses without permission. We will work to make sure that no one sees your online responses without permission. For questions, concerns, complaints, or if you feel you were harmed as a result of study participation you may contact researchers at kandampully.1@osu.edu or choi.741@osu.edu. For questions about your rights as a participation in this study or to discuss other study-related concerns or complaints with someone who is not part of the research team, you may contact Ms. Sandra Meadows in the Office of Responsible Research Practices at 1-800-678-6251. Thank you so much. Sincerely, Jay Kandampully & Hyeyoon Choi

Your most recent visit to the hotel for at least one overnight stay within the past one year was at an: ** The definition of upscale hotels: Upscale hotels are hotels with full-service facilities with a large volume of full service accommodations, on-site full service restaurant(s), and a variety of on-site amenities such as swimming pools, a health club, children's activities, ballrooms, conference facilities, and other amenities. Examples may include InterContinental, Westin, Hilton, Marriott, and Hyatt hotels.

- ❍ It was an upscale hotel. (1)
- ❍ It was not an upscale hotel. (2)

If it was not an upscale hotel. Is Selected, Then Skip to Ed of Survey

Q1 In general, during your most recent stay at the hotel, which attributes of the hotel's employees were important to you and did the staff meet your expectations?

	How important is this to you?					How did the hotel do?				
	Unimportant (1)	Of little importance (2)	Moderately important (3)	Important (4)	Very important (5)	Poor (1)	Below average (2)	Average (3)	Above average (4)	Excellent (5)
The hotel employees treated me in a courteous manner. (1)	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
The hotel employees were helpful. (2)	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
The hotel employees gave me prompt service. (3)	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
The hotel employees made me feel valued. (4)	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
The hotel employees behaved in a professional (e.g. well-dressed) manner. (5)	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
There were enough employees at the hotel to provide good service. (6)	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍

Q2 In general, during your most recent stay at the hotel, which attributes of the hotel's public spaces were important to you and how did the public space's amenities offered meet your expectations?

	How important is this to you?					How did the hotel do?				
	Unimportant (1)	Of little importance (2)	Moderately important (3)	Important (4)	Very important (5)	Poor (1)	Below average (2)	Average (3)	Above average (4)	Excellent (5)
The public spaces (e.g. seat arrangements) provided plenty of room. (1)	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
This hotel provided comfortable seating. (2)	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
This hotel had legible, visible signs in public areas. (3)	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
This hotel provided accessibility (e.g. wide doorways, parking spaces) that met my needs. (4)	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
This hotel was aesthetically appealing (e.g. artworks, wall / floor decorations). (5)	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
This hotel's layout made it easy to get to where you wanted to go (e.g. restroom, guest room, lobby, restaurants). (6)	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
This hotel had safety features. (7)	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍

Q3 In general, during your most recent stay at the hotel, which attributes of hotel room were important to you and how did the room's amenities offered meet your expectations?

	How important is this to you?					How did the hotel do?				
	Unimportant (1)	Of little importance (2)	Moderately important (3)	Important (4)	Very important (5)	Poor (1)	Below average (2)	Average (3)	Above average (4)	Excellent (5)
The guest room had easily used features (e.g. grab bars, door handles, and door keys). (1)	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
The guest room was clean and properly supplied. (2)	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
The guest bathroom was clean and had attractive features. (3)	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
It was easy to move about the room. (4)	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
The furnishings in the guest room were of high quality. (5)	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
The style of interior accessories (e.g. lamps, artworks) was fashionable. (6)	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
The amenities (e.g. TV, radio, telephone) in the room worked well. (7)	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍

Q4 In general, during your most recent stay at the hotel, which attributes of hotel ambience were important to you and how did the ambience meet your expectations?

	How important is this to you?					How did the hotel do?				
	Unimportant (1)	Of little importance (2)	Moderate important (3)	Important (4)	Very important (5)	Poor (1)	Below average (2)	Average (3)	Above average (4)	Excellent (5)
The atmosphere of this hotel was pleasant. (1)	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
The lighting of this hotel was pleasant. (2)	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
The background aroma of this hotel was pleasant. (3)	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
The background music of this hotel was pleasant. (4)	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
The temperature of this hotel was comfortable. (5)	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
The noise level of this hotel was minimal. (6)	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
This hotel had soundproof guest rooms. (7)	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍

Q5 In general, during your most recent stay at the hotel, which attributes of the hotel's environmentally-friendly practices were important to you and how did these practices meet your expectations?

	How important is this to you?					How did the hotel do?				
	Unimportant (1)	Of little importance (2)	Moderate important (3)	Important (4)	Very important (5)	Poor (1)	Below average (2)	Average (3)	Above average (4)	Excellent (5)
This hotel had visible communications about green practices. (1)	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
This hotel provided motion activated lights in intermittent use areas. (2)	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
This hotel established active recycling program for materials in all sections of the hotel. (3)	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
This hotel provided incentives to engage in environmentally-friendly practices. (4)	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
The guest bathroom offered a towel reuse option to multiple night guests. (5)	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
The guest room provided environment friendly products (e.g. low toxicity, organic or locally made). (6)	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍
The guest room provided energy-saving light bulbs. (7)	❍	❍	❍	❍	❍	❍	❍	❍	❍	❍

Q6 In general, during your most recent stay, how satisfied were you?

	Very Dissatisfied (1)	Dissatisfied (2)	Neutral (3)	Satisfied (4)	Very Satisfied (5)
Overall, I was satisfied with my experience staying at this hotel. (1)	❍	❍	❍	❍	❍
I think I did the right thing in visiting this hotel. (2)	❍	❍	❍	❍	❍
My choice to visit this hotel was a wise one. (3)	❍	❍	❍	❍	❍
I was pleased with the information this hotel's website provided. (4)	❍	❍	❍	❍	❍
I was satisfied with the hotel employees at this hotel. (5)	❍	❍	❍	❍	❍
I was satisfied with the design of this hotel. (6)	❍	❍	❍	❍	❍
I was satisfied with the ambience of this hotel. (7)	❍	❍	❍	❍	❍
I was satisfied with the environmentally-friendly practices of this hotel. (8)	❍	❍	❍	❍	❍

Q7 In general, during your most recent stay, what were your thoughts when engaging with the hotel?

	Strongly disagree (1)	Disagree (2)	Neither agree nor disagree (3)	Agree (4)	Strongly agree (5)
Staying at this hotel exceeded my expectation so much that I didn't consider staying at other hotels. (1)	❍	❍	❍	❍	❍
The hotel employees facilitated my work / my vacation. (2)	❍	❍	❍	❍	❍
The hotel facility (e.g. design) facilitated my work / my vacation. (3)	❍	❍	❍	❍	❍
The ambience facilitated my work / my vacation. (4)	❍	❍	❍	❍	❍
The hotel location facilitated my work / my vacation. (5)	❍	❍	❍	❍	❍
Staying at this hotel was relevant to my needs. (6)	❍	❍	❍	❍	❍
The quality of this hotel corresponded to the number of stars. (7)	❍	❍	❍	❍	❍
I appreciated this hotel's environmentally-friendly practices. (8)	❍	❍	❍	❍	❍

Q8 In general, during your most recent stay, what were your feelings when engaging with the hotel?

	Strongly disagree (1)	Disagree (2)	Neither agree nor disagree (3)	Agree (4)	Strongly agree (5)
Staying at this hotel made me feel relaxed. (1)	❍	❍	❍	❍	❍
I felt well-treated staying at this hotel. (2)	❍	❍	❍	❍	❍
I felt comfortable staying at this hotel. (3)	❍	❍	❍	❍	❍
In general, I was pleased with this hotel's physical environment. (4)	❍	❍	❍	❍	❍
In general, I was impressed with this hotel's physical environment. (5)	❍	❍	❍	❍	❍

Q9 In general, after your most recent stay, what are likely to be your future behavior intentions when engaging with the hotel?

	Strongly disagree (1)	Disagree (2)	Neither agree nor disagree (3)	Agree (4)	Strongly agree (5)
If given a chance, I am willing to suggest improvements in design. (1)	❍	❍	❍	❍	❍
If given a chance, I am willing to suggest improvements in ambience. (2)	❍	❍	❍	❍	❍
If given a chance, I am willing to suggest improvements in the quality of service provided by hotel employees. (3)	❍	❍	❍	❍	❍
If given a chance, I am willing to suggest improvements in the environmentally-friendly practices provided by the hotel. (4)	❍	❍	❍	❍	❍
If given a chance, I am willing to suggest improvements in facilities. (5)	❍	❍	❍	❍	❍
If given a chance, I am willing to suggest additional services. (6)	❍	❍	❍	❍	❍

Q10 In general, after your most recent stay, how likely are you to recommend this hotel to others?

	Strongly disagree (1)	Disagree (2)	Neither agree nor disagree (3)	Agree (4)	Strongly agree (5)
I will recommend this hotel to others through online platforms (e.g. online review, social media, and blog). (1)	❍	❍	❍	❍	❍
I will recommend this hotel to others through verbal communication. (2)	❍	❍	❍	❍	❍
I will recommend this hotel to someone who seeks my advice. (3)	❍	❍	❍	❍	❍
I will encourage family and friends to stay at this hotel. (4)	❍	❍	❍	❍	❍
I will say positive things about staying at this hotel. (5)	❍	❍	❍	❍	❍

Q11 Was this your first visit to this hotel?

- Yes, I was a new customer. (1)
- No, I was a repeat customer. (2)

Answer If Was this your first visit to this hotel? No, I was a repeat customer. Is Selected

Q12 If you selected repeat customer for the previous question regarding your visit to the hotel, how many times have you stayed at this hotel including the most recent trip?

- 1 - 2 times (1)
- 3 - 4 times (2)
- More than 4 times (3)

Q13 How many nights did you stay in this hotel on your last visit?

- 1 night (1)
- 2 nights (2)
- 3 nights (3)
- 4 nights (4)
- 5 nights (5)
- More than 5 nights (6)

Q14 What was the purpose of your travel?

- Business (1)
- Leisure (2)
- Combination of both (3)

Q15 How did you hear about this hotel?

- I already knew of it. (1)
- The Internet (2)
- Friends and relatives (3)
- Media (ex. TV) (4)
- Travel agency (5)
- It was part of the travel package. (6)

Q16 Who was the primary decision maker responsible for selecting this hotel?

- ❍ Yourself (2)
- ❍ Spouse / partner (4)
- ❍ Other family member / relatives (6)
- ❍ Children (8)
- ❍ Friend (9)
- ❍ Joint decision with significant others (5)
- ❍ Travel agent (10)
- ❍ Club or organization (11)
- ❍ Company you work for (12)

Answer If Who was the primary decision maker responsible for selecting this hotel? Yourself Is Selected

Q17 If you selected yourself for the previous question regarding primary decision maker, please indicate how you booked your hotel.

- ❍ Hotel website (1)
- ❍ Travel related sites (ex. Priceline, Expedia) (2)
- ❍ Phone reservation (3)
- ❍ Other (4)

Q18 What were the main reasons for your visit to this hotel? (Click all that apply)

- ❑ Leisure (rest and relaxation) (1)
- ❑ Visiting relatives and friends (2)
- ❑ Business reasons (3)
- ❑ Attending events (4)
- ❑ Culture (5)
- ❑ Sports and recreation (6)
- ❑ Health and wellness (7)
- ❑ Religious reasons (8)
- ❑ Other (9)

Answer If What were the main reasons for your visit to this hotel? Other Is Selected

Q19 If other is selected for the previous question, please provide the other reasons for your visit to the hotel.

Q20 What hotel services did you use during your hotel stay? (Click all that apply)

- ❑ Lobby (1)
- ❑ Restaurant (2)
- ❑ Hotel amenities (3)

Answer If What hotel services did you use during your hotel stay? (Click all that apply) Hotel amenities Is Selected

Q21 If you have selected hotel amenities, how often did you use these amenities during your hotel stay?

	Never (1)	Rarely (2)	Sometimes (3)	Often (4)	All of the time (5)
Hotel restaurant(s) (1)	❍	❍	❍	❍	❍
Room service (2)	❍	❍	❍	❍	❍
Hotel Wi-Fi (3)	❍	❍	❍	❍	❍
In-room technology (4)	❍	❍	❍	❍	❍
Hotel website (5)	❍	❍	❍	❍	❍
Hotel transportation (6)	❍	❍	❍	❍	❍
Swimming pool (7)	❍	❍	❍	❍	❍
Spa (8)	❍	❍	❍	❍	❍

Q22 Are you a member of this hotel?

- ❍ Yes (1)
- ❍ No (2)

Q23 Location of hotel in the U.S (Census regions):

- ❍ Northeast (1)
- ❍ Midwest (2)
- ❍ West (3)
- ❍ South (4)

Q24 Gender:

- Male (1)
- Female (2)

Q25 The year you were born (ex. 1983, 1970, 1951, etc.):

Q26 Ethnicity:

- White (1)
- Asian (2)
- American Indian or Alaska Native (3)
- Black or African American (4)
- Hispanic or Latino (5)
- Native Hawaiian or Other Pacific Islander (6)
- Other (7)

Answer If Ethnicity: Other Is Selected

Q27 If other is selected for the previous question regarding ethnicity, please provide your category of ethnicity.

Q28 Marital status:

- Single (1)
- Married (2)
- Other (3)

If Single Is Selected, Then Skip to Employment status:

Q29 If you brought your children / grandchildren along on your most recent visit to the hotel, the number of children were:

- N/A (1)
- 1-2 (2)
- 3-4 (3)
- 5 or more (4)

Q30 If you brought your children / grandchildren along on your most recent visit to the hotel, please indicate their ages.

Q31 Employment status:

- Full time (1)
- Part time (2)
- Student (3)
- Not employed (4)
- Retired (5)
- Other (6)

Q32 Total amount of household income before taxes:

- Less than $25,000 (1)
- $25,000 - $49.999 (2)
- $50,000 - $74,999 (3)
- $75,000 - $99,999 (4)
- $100,0000 or more (5)

Q33 Education:

- Left high school before diploma (1)
- Earned high school diploma (2)
- Bachelor's degree (3)
- Associate's degree (4)
- Master's degree (5)
- Doctorate's degree (6)
- Unwilling to answer (7)

Q34 Location of home in the U.S (Census regions):

- Northeast (1)
- Midwest (2)
- West (3)
- South (4)

Appendix B: EFA Results

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.928
Bartlett's Test of Sphericity	Approx. Chi-Square	6599.401
	df	465
	Sig.	.000

Communalities

	Initial	Extraction
SocialP1	.654	.665
SocialP2	.645	.647
SocialP3	.608	.615
SocialP4	.630	.639
SocialP5	.621	.571
SocialP6	.647	.629
PublicP1	.597	.621
PublicP2	.623	.603
PublicP3	.568	.591
PublicP4	.597	.610
PublicP6	.509	.499
PublicP7	.552	.549
RoomP1	.550	.530
RoomP3	.633	.775
RoomP4	.646	.643
AmbienceP2	.578	.503
AmbienceP3	.610	.786
AmbienceP4	.539	.549
Sat1	.702	.741
Sat2	.714	.767
Sat3	.687	.712
Beh1a	.750	.766
Beh1b	.748	.766
Beh1c	.651	.676
Beh1d	.446	.425
Beh1e	.625	.617
Beh1f	.696	.710
Beh2b	.654	.686
Beh2c	.717	.762
Beh2d	.636	.654
Beh2e	.679	.726

Extraction Method: Principal Axis Factoring.

Total Variance Explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings[a]
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	11.912	38.426	38.426	11.558	37.284	37.284	9.237
2	4.251	13.713	52.139	3.928	12.670	49.954	9.038
3	1.930	6.225	58.364	1.612	5.199	55.153	3.991
4	1.391	4.486	62.850	1.011	3.261	58.413	7.196
5	1.065	3.436	66.286	.742	2.393	60.806	7.974
6	.966	3.116	69.402	.633	2.043	62.849	7.530
7	.854	2.756	72.158	.551	1.779	64.628	6.666
8	.708	2.284	74.442				
9	.693	2.234	76.676				
10	.592	1.908	78.585				
11	.531	1.714	80.299				
12	.496	1.600	81.898				
13	.465	1.501	83.399				
14	.455	1.468	84.867				
15	.424	1.366	86.233				
16	.416	1.341	87.575				
17	.397	1.280	88.855				
18	.347	1.119	89.975				
19	.341	1.101	91.076				
20	.332	1.070	92.146				
21	.317	1.023	93.169				
22	.287	.925	94.094				
23	.269	.868	94.962				
24	.251	.811	95.773				
25	.245	.792	96.565				
26	.215	.693	97.258				
27	.188	.605	97.863				
28	.182	.586	98.449				
29	.176	.567	99.016				
30	.166	.537	99.553				
31	.139	.447	100.000				

Extraction Method: Principal Axis Factoring.

a. When factors are correlated, sums of squared loadings cannot be added to obtain a total variance.

Pattern Matrix[a]

	Factor						
	1	2	3	4	5	6	7
SocialP1		.818					
SocialP2		.757					
SocialP3		.787					
SocialP4		.770					
SocialP5		.592					
SocialP6		.708					
PublicP1	.827						
PublicP2	.765						
PublicP3	.773						
PublicP4	.733						
PublicP6	.712						
PublicP7	.551						
RoomP1	.257					.451	
RoomP3						.905	
RoomP4						.692	
AmbienceP2							.449
AmbienceP3							.867
AmbienceP4	.212						.604
Sat1					.800		
Sat2					.769		
Sat3					.723		
Beh1a			.861				
Beh1b			.882				
Beh1c			.811				
Beh1d	.209		.629				
Beh1e	-.216		.778				
Beh1f			.842				
Beh2b				.837			
Beh2c				.765	.237		
Beh2d				.791			
Beh2e				.885			

Extraction Method: Principal Axis Factoring.

Rotation Method: Promax with Kaiser Normalization.[a]

a. Rotation converged in 6 iterations.

Factor Correlation Matrix

Factor	1	2	3	4	5	6	7
1	1.000	.696	-.018	.547	.612	.658	.648
2	.696	1.000	-.100	.532	.641	.640	.579
3	-.018	-.100	1.000	-.030	-.113	-.080	.033
4	.547	.532	-.030	1.000	.651	.530	.474
5	.612	.641	-.113	.651	1.000	.621	.536
6	.658	.640	-.080	.530	.621	1.000	.571
7	.648	.579	.033	.474	.536	.571	1.000

Extraction Method: Principal Axis Factoring.

Rotation Method: Promax with Kaiser Normalization.

Appendix C: CFA Results

Analysis Summary

Notes for Group (Group number 1)

Sample size = 310

Computation of degrees of freedom (Default model)

Number of distinct sample moments:	378
Number of distinct parameters to be estimated:	75
Degrees of freedom (378 - 75):	303

Result (Default model)

Minimum was achieved

Chi-square = 546.118

Degrees of freedom = 303

Probability level = .000

Maximum Likelihood Estimates

Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
SocialP5	<---	Social	1.02	0.074	13.746	***	
SocialP4	<---	Social	1.176	0.081	14.499	***	
SocialP3	<---	Social	1.066	0.075	14.223	***	
SocialP1	<---	Social	1				
SocialP6	<---	Social	1.079	0.074	14.6	***	
PublicP3	<---	Public	1.144	0.09	12.767	***	
PublicP1	<---	Public	1				
PublicP6	<---	Public	1.013	0.086	11.83	***	
RoomP4	<---	Room	1.042	0.076	13.633	***	
RoomP3	<---	Room	0.956	0.071	13.554	***	
AmbienceP4	<---	Ambience	1.04	0.086	12.054	***	
AmbienceP3	<---	Ambience	1.153	0.087	13.22	***	
AmbienceP2	<---	Ambience	1				
Sat3	<---	Satisfaction	1.023	0.055	18.621	***	
Sat2	<---	Satisfaction	1.15	0.059	19.433	***	
Sat1	<---	Satisfaction	1				
Beh1d	<---	Suggest	0.793	0.063	12.608	***	
Beh1c	<---	Suggest	1.001	0.055	18.133	***	
Beh1b	<---	Suggest	1.027	0.049	21.01	***	
Beh1a	<---	Suggest	1				
Beh1e	<---	Suggest	0.934	0.057	16.333	***	
Beh1f	<---	Suggest	1.022	0.054	19.092	***	
Beh2e	<---	WOM	0.938	0.057	16.327	***	
Beh2d	<---	WOM	1.059	0.067	15.78	***	
Beh2c	<---	WOM	0.957	0.054	17.672	***	
Beh2b	<---	WOM	1				
RoomP1	<---	Room	1				

Standardized Regression Weights: (Group number 1 - Default model)

			Estimate
SocialP5	<---	Social	0.757
SocialP4	<---	Social	0.793
SocialP3	<---	Social	0.78
SocialP1	<---	Social	0.772
SocialP6	<---	Social	0.798
PublicP3	<---	Public	0.785
PublicP1	<---	Public	0.752
PublicP6	<---	Public	0.721
RoomP4	<---	Room	0.821
RoomP3	<---	Room	0.816
AmbienceP4	<---	Ambience	0.737
AmbienceP3	<---	Ambience	0.825
AmbienceP2	<---	Ambience	0.741
Sat3	<---	Satisfaction	0.854
Sat2	<---	Satisfaction	0.879
Sat1	<---	Satisfaction	0.852
Beh1d	<---	Suggest	0.637
Beh1c	<---	Suggest	0.809
Beh1b	<---	Suggest	0.878
Beh1a	<---	Suggest	0.875
Beh1e	<---	Suggest	0.76
Beh1f	<---	Suggest	0.833
Beh2e	<---	WOM	0.822
Beh2d	<---	WOM	0.802
Beh2c	<---	WOM	0.874
Beh2b	<---	WOM	0.813
RoomP1	<---	Room	0.74

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	75	546.118	303	0	1.802
Saturated model	378	0	0		
Independence model	27	5714.565	351	0	16.281

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	0.904	0.889	0.955	0.947	0.955
Saturated model	1		1		1
Independence model	0	0	0	0	0

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	0.051	0.044	0.058	0.401
Independence model	0.222	0.217	0.227	0

Appendix D: SEM Results

Analysis Summary

Notes for Group (Group number 1)

Sample size = 310

Computation of degrees of freedom (Default model)

Number of distinct sample moments:	378
Number of distinct parameters to be estimated:	65
Degrees of freedom (378 - 65):	313

Result (Default model)

Minimum was achieved

Chi-square = 555.054

Degrees of freedom = 313

Probability level = .000

Maximum Likelihood Estimates

Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Label
Satisfaction	<---	Social	0.248	0.077	3.237	0.001	
Satisfaction	<---	Public	0.127	0.084	1.512	0.131	
Satisfaction	<---	Room	0.311	0.076	4.083	***	
Satisfaction	<---	Ambience	0.079	0.077	1.034	0.301	
WOM	<---	Satisfaction	0.85	0.071	11.964	***	
Suggest	<---	Satisfaction	-0.187	0.104	-1.793	0.073	
SocialP5	<---	Social	1				
SocialP4	<---	Social	1.166	0.069	16.833	***	
SocialP3	<---	Social	1.056	0.064	16.381	***	
SocialP1	<---	Social	1				
SocialP6	<---	Social	1.066	0.063	16.897	***	
PublicP3	<---	Public	1.143	0.09	12.761	***	
PublicP1	<---	Public	1				
PublicP6	<---	Public	1.013	0.086	11.835	***	
RoomP4	<---	Room	1.044	0.077	13.623	***	
RoomP3	<---	Room	0.957	0.071	13.545	***	
RoomP1	<---	Room	1				
AmbienceP4	<---	Ambience	1.032	0.086	12.058	***	
AmbienceP3	<---	Ambience	1.145	0.087	13.231	***	
AmbienceP2	<---	Ambience	1				
Sat3	<---	Satisfaction	1.026	0.055	18.554	***	
Sat2	<---	Satisfaction	1.151	0.06	19.322	***	
Sat1	<---	Satisfaction	1				
Beh1d	<---	Suggest	0.775	0.064	12.155	***	
Beh1c	<---	Suggest	0.98	0.058	16.887	***	
Beh1b	<---	Suggest	1.006	0.052	19.205	***	
Beh1a	<---	Suggest	0.979	0.051	19.079	***	
Beh1e	<---	Suggest	0.914	0.059	15.402	***	
Beh1f	<---	Suggest	1				
Beh2e	<---	WOM	0.939	0.058	16.256	***	
Beh2d	<---	WOM	1.058	0.067	15.683	***	
Beh2c	<---	WOM	0.962	0.054	17.685	***	
Beh2b	<---	WOM	1				

Standardized Regression Weights: (Group number 1 - Default model)

			Estimate
Satisfaction	<---	Social	0.281
Satisfaction	<---	Public	0.147
Satisfaction	<---	Room	0.358
Satisfaction	<---	Ambience	0.093
WOM	<---	Satisfaction	0.727
Suggest	<---	Satisfaction	-0.111
SocialP5	<---	Social	0.754
SocialP4	<---	Social	0.794
SocialP3	<---	Social	0.78
SocialP1	<---	Social	0.776
SocialP6	<---	Social	0.796
PublicP3	<---	Public	0.785
PublicP1	<---	Public	0.752
PublicP6	<---	Public	0.721
RoomP4	<---	Room	0.821
RoomP3	<---	Room	0.816
RoomP1	<---	Room	0.739
AmbienceP4	<---	Ambience	0.735
AmbienceP3	<---	Ambience	0.823
AmbienceP2	<---	Ambience	0.745
Sat3	<---	Satisfaction	0.853
Sat2	<---	Satisfaction	0.877
Sat1	<---	Satisfaction	0.849
Beh1d	<---	Suggest	0.636
Beh1c	<---	Suggest	0.808
Beh1b	<---	Suggest	0.879
Beh1a	<---	Suggest	0.875
Beh1e	<---	Suggest	0.759
Beh1f	<---	Suggest	0.833
Beh2e	<---	WOM	0.821
Beh2d	<---	WOM	0.8
Beh2c	<---	WOM	0.877
Beh2b	<---	WOM	0.811

Model Fit Summary

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	65	555.054	313	0	1.773
Saturated model	378	0	0		
Independence model	27	5714.565	351	0	16.281

Baseline Comparisons

Model	NFI	RFI	IFI	TLI	CFI
	Delta1	rho1	Delta2	rho2	
Default model	0.903	0.891	0.955	0.949	0.955
Saturated model	1		1		1
Independence model	0	0	0	0	0

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	0.05	0.043	0.057	0.489
Independence model	0.222	0.217	0.227	0