TOUCH VS. TECH IN SERVICE ENCOUNTERS

A Dissertation in

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by

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ABSTRACT

New technologies are continuously being developed and infused into interactions between employees and customers, thereby transforming the traditional high touch-low tech service encounter. From the customer’s perspective, all service encounters can be delineated along the dimensions of touch (the extent to which customers interact with direct service providers, such as service employees) and tech (the intensity with which customers must use technology). Systematically studying consumers’ attitudes and behaviors during service encounters based on different levels of touch and tech not only furthers our understanding of modern consumers and contributes to the service encounter management research, but also helps service companies better understand their customers and provide the optimal level of service. Therefore, the first purpose of this dissertation is to develop a service matrix delineating different types of service encounters along the dimensions of touch and tech from the customer’s perspective: high touch-low tech (Type 1), low touch-high tech (Type 2), low touch-low tech (Type 3), and high touch-high tech (Type 4).

According to classic service marketing models, a service company can play either a direct or indirect role in influencing customers’ perceptions of service during service encounters. Hence, the second purpose of this dissertation is to investigate how customers’ relationships with a company (i.e., communal vs. exchange) influence their evaluations of touch and tech in service encounters and to identify the underlying mechanism. Due to action-norm conformity, interpersonal touch (vs. impersonal tech) service works better in a communal customer-company relationship. I examine perceptions of warmth as the underlying mechanism that leads to higher evaluations of touch service under communal relationship norms.

Furthermore, I extend the interaction effects between service encounter types and
customer-company relationships to the service failure context and explore the boundary condition of the basic effects. In particular, I test the moderating effect of a service guarantee in a service failure context. The results confirm the moderating effect of a service guarantee in an exchange customer-company relationship: without a service guarantee, customers’ evaluations of tech (vs. touch) service failures are higher; conversely, with a service guarantee, customers’ evaluations of touch (vs. tech) service failures are higher. On the other hand, the buffering effect caused by communal customer-company relationship norms attenuates the difference in customers’ responses to touch vs. tech service failures, regardless of the absence or presence of a service guarantee.
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CHAPTER 1 – INTRODUCTION

Service encounters have traditionally been described as high touch and low tech (Bitner, Brown, & Meuter, 2000; Kandampully, 2007; Lee, Barker, & Kandampully, 2003). However, a rapid transformation is under way as technology is increasingly being infused into interactions between employees and customers (Bitner et al., 2000; Giebelhausen et al., 2014; Lee et al., 2003). Since the beginning of this century, researchers have devoted themselves to investigating how increasing technology deployment impacts customers, service companies, and/or employees during service encounters; their efforts have produced vast literatures that scholars have reviewed and synthesized (e.g., Bitner et al., 2000; Bolton & Saxena-Iyer, 2009; Meuter et al., 2000; Parasuraman & Grewal, 2000; Wünderlich, Wangenheim, & Bitner, 2013). In these review papers, scholars have provided frameworks that categorize service encounters based on, for example, the extent of customer participation and technology involvement (Bolton & Saxena-Iyer, 2009) or the activity intensity of the service provider and customer within the technology-enabled service delivery process (Wünderlich et al., 2013).

However, no frameworks have delineated service encounters from the customer’s perspective along the dimensions of touch (the extent to which customers interact with direct service providers such as service employees) and tech (the intensity with which customers must use technology). Systematic research on consumers’ attitudes and behaviors during service encounters based on different levels of touch and tech can help service companies better understand their customers and consequently provide the optimal level of service. Therefore, the first purpose of this research is to establish a framework delineating various service encounters along the dimensions of touch and tech from the customer’s perspective.

Both Kotler’s (1991) service marketing triangle model and Parasuraman’s (1996) service
marketing pyramid model include a service company component. During the service encounter, the company plays either a direct or indirect role in influencing customers’ perceptions of service (Kotler, 1991). Hence, in this research, I aim to investigate how customer-company relationships (i.e., communal vs. exchange) impact customers’ perceptions and evaluations of touch and tech in service encounters.

Furthermore, I explore the social perceptions of warmth and competence (Cuddy, Fiske, & Glick, 2008) across different types of service encounters and different customer-company relationships. Previous research has confirmed that the social perception of warmth is closely related to communal relationships, while competence is related to agency and exchange relationships (Scott, Mende, & Bolton, 2013). In addition, research evidence demonstrates the importance of warmth and competence in different types of service encounters (Zawisza & Pittard, 2015). Therefore, I aim to answer two research questions:

1. Do customers with different customer-company relationship orientations (i.e., communal vs. exchange) respond differently to touch vs. tech service encounters?

2. Do social perceptions (i.e., warmth vs. competence) mediate such effects?

After examining the basic effects between service encounter types (i.e., touch vs. tech) and customer-company relationships (i.e., communal vs. exchange), I explore the boundary condition by testing the moderating effect of a service guarantee in a service failure context. A service guarantee reduces customers’ perceived risk and promises compensation for a service failure (Wirtz & Kum, 2001), which, in turn, may affect customers’ service evaluations when service failures occur across different types of service and customer-company relationships.

I answer these research questions and empirically test the proposed touch-tech service encounter framework in various service contexts using data from two pretests and three main
studies. In Study 1, I examine the basic interaction effects between service encounter types and customer-company relationship norms on customers’ service satisfaction levels. Due to the conformity and compatibility between touch (vs. tech) service scripts and communal (vs. exchange) relationship norms, customers are expected to be more satisfied with interpersonal touch (vs. impersonal technology-facilitated) service under communal customer-company relationship norms; conversely, tech (vs. touch) service is expected to be better received under exchange relationship norms. In Study 2, I generalize the investigation of the basic effect across the four types of service encounters along the two dimensions of touch and tech: high touch-low tech interpersonal service (Type 1), low touch-high tech self-service technology (Type 2), low touch-low tech self-service without technology infusion (Type 3), and high touch-high tech smart interactive service (Type 4). In addition, I examine the underlying mechanism of the basic interaction effects. In Study 3, I examine the proposed boundary condition in a service failure context to test whether the absence or presence of a service guarantee could moderate the basic interaction effects between service encounter types and relationship norms. To thoroughly understand touch vs. tech service encounters and communal vs. exchange customer-company relationships in practice, I use scenarios depicting three major types of businesses in the services industry: a hotel (Study 1), a restaurant (Study 2) and a catering service (Study 3).

Theoretically, I make several initial attempts to address some research gaps in the extant service encounter management literature. This is the first framework built around the dimensions of touch and tech from the customer’s perspective to distinguish the four major service encounter types in modern service practices, including the recently emerged high touch-high tech smart interactive service encounter. Furthermore, I empirically test this conceptual framework. I discover correlations between service encounter types and customer-company relationship types and empirically study associated dynamics in different
service settings (e.g., a hotel, a restaurant, and a catering service) and across various service contexts (e.g., service success and service failure).

From a managerial perspective, the results of the current research have implications for finding a balance between a company’s service strategy and service offerings; several evidence-based recommendations can be made to help managers provide the optimal level of service. Service companies usually position themselves in the market through various marketing communication strategies. For example, Sheraton Hotels tend to emphasize a communal relationship with their guests (i.e., “Who’s taking care of you?”), whereas Days Inn emphasizes an exchange relationship (i.e., “Best value under the sun”) (Bolton & Mattila, 2015). Based on each company’s positioning and marketing strategy, practitioners should provide services that conform to their marketing communication emphases in order to increase customer satisfaction. Sheraton Hotels might consider incorporating more interpersonal touch elements (vs. technology) into the service delivery process, while Days Inn should focus more on implementing customer self-service technology.

The rest of this dissertation is organized as follows. In Chapter 2, I review the two major streams of literature involved in this research: touch vs. tech service encounter types, and communal vs. exchange customer-company relationships. Based on the analysis of each stream of literature, I propose a new touch-tech service encounter matrix and present my research questions. In Chapter 3, I describe and present the methods and results for each empirical study. Finally, in Chapter 4, I discuss the overall research findings, summarize salient contributions and suggest directions for future research.
CHAPTER 2 – LITERATURE REVIEW

2.1 Service Encounter Type: Touch vs. Tech

A service encounter is defined as the interaction moment between a customer and a service provider (Bitner, Booms, & Mohr, 1994; Bitner et al., 2000; Keaveny, 1995; Shostack, 1985; Winsted, 1997). From the customer’s point of view, the service encounter is the critical moment of truth when s/he develops impressions and evaluations of the service provider (Bitner, 1990; Bitner et al., 2000). Previous research has shown the importance of service encounters in affecting service outcomes such as customer satisfaction (Bitner, Booms, & Tetreault, 1990; Bitner & Hubbert, 1994; Bitner et al., 1994; Meuter et al., 2000; Parasuraman, Zeithaml, & Berry, 1985, 1994; Smith & Bolton, 1998), future consumption intentions (Bitner, 1990, 1995; Keaveney, 1995; Smith & Bolton, 1998), word-of-mouth (Bitner, 1990; Keaveney, 1995; Meuter et al., 2000; Tax, Brown, & Chandrashekaran, 1998), and loyalty (Gremler & Brown, 1999). Due to its importance, managing the service encounter is a key component of service marketing.

According to Kotler’s (1991) service marketing triangle (Figure 2.1), three key constituents are involved in a service encounter—the customer, the company and the employee—and there are interrelationships between each of them: external marketing between the company and the customer, internal marketing between the company and the employee, and interactive marketing between the employee and the customer. External marketing consists of traditional marketing efforts (e.g., sales, promotions, advertising, and other forms of marketing communications). Internal marketing consists of activities aimed at helping employees provide satisfactory service, such as training and other support and motivational activities. Interactive marketing consists of activities during service encounters that fulfill a company’s service promises to customers. This is the moment of truth when the
customer and the service employee interact and the service is jointly produced (Bitner et al., 2000). Since most service encounters are traditionally facilitated by interpersonal interactions between customers and employees, “high touch” has been the focus of most service encounter research (Bitner et al., 2000). In fact, prior to 2000, the role of technology in service encounters was largely ignored in service research (for exceptions, see Dabholkar, 1994, 1996; Parasuraman, 1996).

![Service marketing triangle model (Kotler, 1991).](image)

Figure 2.1 – Service marketing triangle model (Kotler, 1991).

Yet, technology has dramatically changed traditional interpersonal dynamics and the high touch nature of service encounters. To reflect these changes and capture the complexities caused by the infusion of technology into the service process (Bitner et al., 2000; Parasuraman & Grewal, 2000), Parasurman (1996) updated Kotler’s (1991) service marketing triangle by adding a fourth component—technology—and transformed the original two-dimensional triangle model into a three-dimensional pyramid model called the technology infusion matrix (see Figure 2.2).

The modified model shows how the original interpersonal service encounter has become
an amalgamation of the dynamic interrelationships between employees, customers and technology. As shown in the pyramid matrix, technology can help both customers and employees create satisfactory service encounters (Bitner et al., 2000). One face of the pyramid represents how technologies such as point-of-sale machines and customer relationship management systems can help employees effectively and efficiently deliver customer service. A vast amount of information (e.g., transaction data, customer preferences) that previously was impossible to handle or remember has now become accessible to employees at the tap of fingertip. Another face of the pyramid represents how customers can use technology to produce satisfactory service encounters. One format that has been studied extensively is self-service technology (SST), a technological interface that enables consumers to obtain service and generate benefits by themselves, without the presence of a service employee (Meuter et al., 2000); common SSTs used in hospitality contexts include self-check-in kiosks at airports and hotels. The pyramid model was a breakthrough in the study of service encounters because it acknowledges how technology has transformed traditional interpersonal customer service.

Figure 2.2 – Service marketing pyramid model (Parasuraman, 1996).
To better understand the dynamic interrelationships between the three key factors in service encounters (i.e., customers, employees and technology), researchers developed various matrices to classify service interaction types according to different dimensions. Bolton and Saxena-Iyer (2009) developed their technology-enabled service matrix based on the extent of customer participation in service delivery and the extent to which technology enables or delivers the service. They classified four types of interactive services along the two dimensions of customer participation and technology utilization (see Figure 2.3): (a) highly interactive services (high customer participation-high level of technology delivery/enablement); (b) continuously provided services (low customer participation-high level of technology delivery/enablement); (c) co-creation services (high customer participation-low level of technology delivery/enablement); and (d) traditional services (low customer participation-low level of technology delivery/enablement).

**Figure 2.3 – Interactive service categorization (Bolton & Saxena-Iyer, 2009).**

Wünderlich and her colleagues (2013) further distinguished such technology-enabled services based on the activity levels of customers and service providers. Their
technology-mediated service matrix (see Figure 2.4) includes four types of technology-enabled customer services: (a) interactive service (high customer activity-high provider activity); (b) self-service (high customer activity-low provider activity); (c) machine-to-machine service (low customer activity-low provider activity); and (d) provider active service (low customer activity-high provider activity).

![Smart service interactivity matrix](image)

**Figure 2.4 – Smart service interactivity matrix (Wünderlich et al., 2013).**

### 2.2 A New Touch vs. Tech Matrix in Service Encounters

Among all the previous service encounter matrices, none clearly distinguish service encounters from the customer’s perspective along the dimensions of the other two key components in hospitality service encounters: employees (i.e., touch) and technology (i.e., tech). The importance of a touch vs. tech matrix from the customer’s perspective is twofold. First, such a matrix could help researchers thoroughly investigate the interrelationships
among the three components in modern service encounters: customers, employees and technology. Second, although the infusion of technology into service encounters has become increasingly pervasive and important, interpersonal service between customers and employees prevails in the service industry. Thus, both employees (touch) and technology (tech) play substantial roles in customer service experiences. A systematic examination of the effects of different levels of touch vs. tech in service encounters from the customer’s perspective could reveal insights that may help service companies improve customers’ experiences.

To fill this research gap, I have developed a service matrix delineating four different types of service encounters along the dimensions of touch and tech from the customer’s perspective, as shown in Figure 2.5.

![Figure 2.5 – Touch vs. tech matrix in service encounters.](image)

The horizontal axis of the service encounter matrix in Figure 2.5 indicates the intensity of the interaction between the customer and the service employee (i.e., the touch dimension).
The vertical axis represents the extent to which technology is involved in service delivery (i.e., the tech dimension). The levels of touch and tech range from low to high. No- or low-touch service encounters involve minimal interaction with service employees, while high-touch service encounters involve more intensive communication and interaction between customers and employees, who co-create the service delivery. In no- or low-tech service encounters, very little technology is used, whereas in high-tech service encounters, technology must be used for service delivery.

Although the two dimensions of touch and tech are continuous, most service encounters can be categorized into one of the four quadrants in the matrix. High touch-low tech (Type 1) service encounters include most traditional interpersonal services delivered by service employees (Bolton & Saxena-Iyer, 2009), such as table service at restaurants and check-in services at hotel front desks. Typical low touch-high tech (Type 2) service encounters involve self-service technologies (SSTs) (e.g., self-check-in kiosks at hotels and airports), which mainly require one-sided action from customers (Dabholkar, 1996; Wünderlich et al., 2013). Low touch-low tech (Type 3) service encounters require minimal action from service employees and little technology (e.g., buffet service in restaurants). Finally, high touch-high tech (Type 4) service encounters are a relatively new category of interactive smart services that provide real time remote information or troubleshooting support (Bolton & Saxena-Iyer, 2009; Wünderlich et al., 2013). For example, in the hospitality industry, Marriott International launched a meeting services app worldwide at the end of 2014 that enables meeting planners to manage events and communicate with hotel staff seamlessly and efficiently (Hospitalitynet). The app provides event planners with assistance from hotel staff anywhere and anytime and enables them to make and adjust real-time requests such as coffee refills.
2.3 Customer-Company Relationship: Communal vs. Exchange

In Parasuraman’s (1996) service marketing pyramid model (see Figure 2.2), the service company is at the top of the pyramid. The service company can directly impact the customer, the employee and the technology, and can indirectly influence the service encounter through the other three components and their interactions. In the current research, I examine how relationships between customers and companies affect different types of service encounters. Furthermore, I explore the underlying mechanisms.

Drawing on interpersonal relationship theory, service researchers suggest that customers use the norms governing their relationships with companies or brands as criteria to evaluate companies, brands or service experiences, and adapt their attitudes and behaviors in response (e.g., Aaker, Fournier, & Brasel 2004; Aggarwal, 2004; Aggarwal & Law, 2005; Bolton & Mattila, 2015; Fournier, 1998). For example, service researchers applied the interpersonal communal vs. exchange relationship norms to customer-company and customer-brand relationships. In particular, researchers found that communal vs. exchange relationships significantly influence consumers’ attitudes and behaviors (Aggarwal, 2004), information processing strategies (Aggarwal & Law, 2005), loss aversion (Aggarwal & Zhang, 2006), motivation to donate (Johnson & Grimm, 2010), and responses to service failures (Bolton & Mattila, 2015; Wan, Hui, & Wyer, 2011). I propose that customers’ evaluations of touch and tech in service encounters are moderated by different customer-company relationship norms, namely, communal vs. exchange. The underlying mechanisms are distinct social perceptions (i.e., warmth vs. competence) triggered by the two different customer-company relationships.

In communal relationships, people demonstrate concern for and attend to others’ needs (Aggarwal, 2004; Bolton & Mattila, 2015; Clark, 1984). People in communal relationships prefer non-comparable benefits rather than well-calculated comparable returns in exchange
for their efforts (Aggarwal, 2004; Aggarwal & Zhang, 2006). Conversely, in exchange relationships, people are motivated to interact with others when they expect to receive comparable benefits in return for their contributions. In other words, such relationships are quid pro quo (Aggarwal, 2004; Aggarwal & Zhang, 2006; Clark & Mills, 1993).

Previously, scholars demonstrated that communal and exchange relationships are governed by distinct norms (Aggarwal, 2004; Bolton & Mattila, 2015). Norms are guidelines that people use to determine proper behaviors in a given context (Aggarwal & Zhang, 2006). In a specific type of relationship (i.e., communal vs. exchange), norms “serve as a lens through which people view the world and guide their subsequent behavior” (Aggarwal & Zhang, 2006, p. 414). Table 2.1 presents a summary of the norms corresponding to the two relationship types (Aggarwal, 2004; Clark, 1981; Clark & Mills, 1993; Clark, Mills, & Corcoran, 1989).

**Table 2.1 – Norms of Communal vs. Exchange Relationships**

<table>
<thead>
<tr>
<th>Communal Relationship Norms</th>
<th>Exchange Relationship Norms</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Less likely track individual inputs and outcomes in a joint task.</td>
<td>• More likely to track inputs and outcomes in a joint task.</td>
</tr>
<tr>
<td>• Divide rewards according to each party’s needs and requirements.</td>
<td>• Divide rewards according to each party’s inputs and contributions.</td>
</tr>
<tr>
<td>• Helping others is more likely.</td>
<td>• Helping others is less likely.</td>
</tr>
<tr>
<td>• Asking help from others is more likely.</td>
<td>• Asking help from others is less likely.</td>
</tr>
<tr>
<td>• Tracking others’ needs is more likely.</td>
<td>• Tracking others’ needs is less likely.</td>
</tr>
<tr>
<td>• More responsive to others’ needs and emotional states.</td>
<td>• Less responsive to others’ needs and emotional states.</td>
</tr>
</tbody>
</table>

As customers’ underlying intentions or motivations to interact with service counterparts are different in these two relationships, results from prior research suggest that relationship norms may influence customers’ cognitive perspectives (Aggarwal & Zhang, 2006) and
information processing strategies (Aggarwal & Law, 2005). In particular, under the communal relationship framework, customers process information at a high level of abstraction, which leads to an overall holistic evaluation. In contrast, customers in exchange relationships process information at a low level of abstraction but with more details and calculations, thus they tend to provide specific, detailed evaluations (Aggarwal & Law, 2005). These differences can be traced to the distinct norms associated with the two relationship types. According to Aggarwal and Law (2005), compared with people in communal relationships, those in exchange relationships are more likely to track and calculate the balance between what they gain and what they give. Yet, detailed tracking and careful calculation are not performed by those in communal relationships, since emphasizing the input-outcome balance violates the communal norms of attending to the counterpart’s needs and welfare.

2.4 Research Questions

Findings from previous research on communal vs. exchange relationships confirm that actions in violation of accepted relationship norms lead to poorer customer evaluations than actions in conformity with relationship norms (Aggarwal, 2004; Bolton & Mattila, 2015). Applying those same norms to customer-company relationships in touch vs. tech service encounters, it can be argued that interpersonal touch (vs. impersonal tech) encounters conform more to the governing norms of communal relationships, and that tech (vs. touch) encounters conform more to exchange relationship norms. In turn, conformity to or violation of relationship norms may affect service evaluations.

For communal relationships, interpersonal touch service might work better and result in higher service satisfaction. The service scripts for interpersonal service emphasize
employee-customer rapport and social reciprocity behaviors (Giebelhausen et al., 2014), such as engaging in pleasant interactions and showing concern for the counterpart’s needs and emotional status. Such scripts conform to communal relationship norms such as mutual help and responsiveness to others’ needs (Bolton & Mattila, 2015). Although the relationships and norms discussed here are between customers and companies rather than between customers and service counterparts, prior research has confirmed that customer-company relationship norms can guide behaviors, even in the absence of an actual relationship between customers and the objects of evaluation (Aggarwal & Law, 2005), such as between customers and service counterparts. As Aggarwal and Zhang (2006) suggested, “what is important is that relationship norms be salient at the time of product evaluation even if they have been made salient in an unrelated context” (p. 414). Therefore, the communal relationship norms between a customer and a company carry over to the customer-employee interaction, and are compatible with the interpersonal touch service encounter. As a result, conformity between communal relationship norms and the interpersonal touch service script leads to higher service satisfaction. In contrast, the major features and benefits of technology-facilitated service encounters (e.g., easy to use “when I want it” and “where I want it”) are related to aspects of personal control (Meuter et al., 2000). Thus, the defined roles and scripts for customers who use technology-mediated services require them to take charge of the service delivery performance and outcomes rather than engage in social reciprocity behaviors. Consequently, the service scripts of impersonal tech (vs. interpersonal touch) conform less to communal relationship norms since the service counterpart in a tech service encounter is an impersonal entity (e.g., a self-service interface). Customers can neither have rapport with nor provide social reciprocity to such an impersonal technology.

Furthermore, under the communal framework, customers tend to process information in an abstract way and evaluate their service counterparts holistically (Aggarwal & Law, 2005).
Hence, evaluations of social encounters (i.e., interpersonal service encounters) mainly depend on inferred, abstract information (Lingel, Altom, & Medin, 1984), such as perceptions of warmth. Previous research has confirmed that in communal relationships, customers emphasize mutual warmth and interpret signals accordingly (Bolton & Mattila, 2015; Scott et al., 2013). The social rapport and reciprocity behaviors embedded in interpersonal touch service (Giebelhausen et al., 2014) signal mutual warmth in a communal relationship.

Interpersonal touch service conforms to the communal customer-company relationship, since touch service facilitates the warmth that is expected by customers in communal relationships with the company. Compared with service outcomes (i.e., what customers receive from service transactions; Mohr & Bitner, 1995), the service process (i.e., the manner in which the service outcome is transferred to the customer; Mohr & Bitner, 1995), which captures the affective aspects of service, is a more important determinant of customer satisfaction with interpersonal touch service (Dabholkar & Overby, 2004). Therefore, the abstract affective components (e.g., responsiveness, rapport, and warmth) emphasized within communal relationships are also desired by customers in interpersonal service processes.

In contrast, exchange relationship norms are more consistent with service scripts in impersonal tech (vs. interpersonal touch) service encounters. When technology is used to deliver service, customers focus on whether the technology is able to deliver desired service outcomes (Collier & Sherrell, 2010). The emphasis on competence in the tech service encounter, rather than the expectation of the service counterpart’s goodwill intentions during the touch service encounter, conforms to the exchange relationship norm of tracking inputs and outcomes. In addition, exchange relationships lead customers to process information at a low level of abstraction and to make item-specific evaluations (Aggarwal & Law, 2005). Hence, customers’ evaluations of nonsocial (i.e., technology-facilitated) service encounters are based on concrete attributes (Lingel et al., 1984), such as the technology’s performance.
and functionality and the service outcomes. Research shows that, in an exchange relationship, customers focus on receiving benefits in return for benefits provided (Scott et al., 2013). Thus, when making evaluations, customers emphasize competence—the service counterpart’s ability to deliver equal or more benefits (Scott et al., 2013)—and they tend to search for signals of it (Bolton & Mattila, 2015). A technological advantage signals competence; therefore, conformity between an exchange relationship’s agentic norms and a technology’s ability to provide service efficiency results in enhanced service evaluations due to customers’ increased perceptions of competence during technology-facilitated service encounters.

Based on findings in the extant literature, I propose that different components of touch and tech services lead to differences in service evaluations based on the type of customer-company relationship (communal vs. exchange). I also propose that the underlying mechanism is rooted in the different perceptions of warmth vs. competence as emphasized by the respective relationship norms. Warmth emphasizes people’s intentions, which are a focus of communal relationships; competence emphasizes ability and agency, which is a focus of exchange relationships (Scott et al., 2013). In addition, competence is important for service encounters involving customer participation, such as using technology to deliver services (e.g., tech services) (Zawisza & Pittard, 2015). On the other hand, warmth is more important when customer participation is accompanied by human interaction, such as during interactions with service employees (e.g., touch services) (Zawisza & Pittard, 2015).

Specifically, I hypothesize that customer-company relationship norms moderate the impact of service types on customer satisfaction:

\[ \text{H}_1: \text{Under communal customer-company relationship norms, customer satisfaction with touch (vs. tech) service is enhanced, and perceptions of warmth mediate customers’ satisfaction.} \]
H2: Under exchange customer-company relationship norms, customer satisfaction with tech (vs. touch) service is enhanced, and perceptions of competence mediate customer satisfaction.

2.5 Boundary Condition: A Service Guarantee in A Service Failure Context

Compared with products, services have several unique characteristics, such as intangibility, heterogeneity, inseparability, and perishability (Lovelock & Gummesson, 2004). These characteristics generate great perceived risk before consumption (Murray & Schlacter, 1990; San Martín & Camarero, 2005). A service guarantee is a solution used by service providers to reduce customers’ perceptions of risk (Hogreve & Gremler, 2009). Service practitioners and researchers consider service guarantees to be an effective way for service companies to “attract and retain customers and gain a competitive edge in the marketplace” (Hogreve & Gremler, 2009; p. 335). For customers, a service guarantee serves as an extrinsic cue to signal service quality (e.g., Ostrom & Iacobucci, 1998; Wu et al., 2012), and as a means to enhance customer evaluation levels (e.g., McCollough & Gremler, 2004). As technology has become increasingly infused into service, customer participation and coproduction have become popular topics in recent service research (e.g., Dong et al., 2015). McCollough and Gremler (2004) suggested that a service guarantee may have a positive impact on consumer coproduction. However, few have investigated how the presence of a service guarantee influences customers’ service evaluations, or how a service guarantee may engage customers in the service delivery process (Hogreve & Gremler, 2009). In the context of the current study, no researchers have examined how a service guarantee, a common practice of service companies aimed at increasing customer satisfaction and loyalty levels, impacts customers in different types of service encounters (i.e., touch vs. tech) in different kinds of
customer-company relationships (i.e., communal vs. exchange). Therefore, I examine whether a service guarantee might be a boundary condition for the interaction effects between service encounter types and customer-company relationships, and determine the contexts in which a service guarantee becomes an effective way to enhance customer service evaluations.

The extant literature provides various definitions of a service guarantee. In their review, Hogreve and Gremler (2009) summarized the major service guarantee literature and proposed the following conceptual definition: “A service guarantee is an explicit promise made by a service provider to (a) deliver a certain level of service to satisfy the customer and (b) remunerate the customer if the service is not sufficiently delivered” (p. 324). This definition highlights two key components of a service guarantee: a message aimed at reducing customers’ perceived risk and promised compensation for customers’ losses caused by service failures. Reduced perceived risk not only encourages customer participation and coproduction, but also enhances customer service evaluations (McCollough & Gremler, 2004).

From the customer-company relationship perspective, a service guarantee might benefit communal relationships less than exchange relationships. Customers in exchange relationships with service companies are motivated by the expectation that they will receive comparable or even more benefits in return for the expenses or benefits they have contributed (Aggarwal, 2004; Aggarwal & Zhang, 2006; Scott et al., 2013). While a service guarantee, which emphasizes “compensation” for a service failure, is compatible with exchange relationship norms, it is not compatible with communal relationship norms, which emphasize mutual help and friendship (Aggarwal, 2004; Bolton & Mattila, 2015; Clark, 1984; Wan et al., 2011). Customers in exchange relationships tend to track and calculate the balance between inputs and outcomes (Aggarwal & Law, 2005). Hence, a service guarantee with compensation satisfies the expectations of a calculation-based exchange relationship.
Conversely, under communal customer-company relationship norms, customers perceive the service company more as a friend (Wan et al., 2011). An explicit service contract such as a service guarantee does not significantly enhance friendship. Therefore, the compensation that a service guarantee promises is likely to be more appealing to and have more impact on customers in exchange (vs. a communal) relationships with service companies.

Furthermore, previous research suggests that communal relationships help mitigate the negative consequences caused by service failures (Goodwin, 1996; Tax et al., 1998). Hence, I propose that the buffering effect of communal relationships on negative service experiences could extend to both touch and tech service encounters, and that communal relationship norms attenuate the difference in customers’ responses to touch and tech service failures, regardless of the presence of a service guarantee, due to its minimal impact in contexts characterized by communal relationships.

In exchange customer-company relationships, service failures might intensify the violations of relationship norms, resulting in poorer service evaluations of touch (vs. tech) service failures (Aggarwal, 2004; Bolton & Mattila, 2015). However, a service guarantee might also mitigate the impact of service failures in exchange relationships. Since exchange relationship norms are based on quid pro quo (Aggarwal, 2004; Aggarwal & Zhang, 2006; Clark & Mills, 1993), the compensation promised by a service guarantee satisfies customers’ expectations of comparable benefits in return for their contributions, thereby reducing their financial risk. While for tech services, a service guarantee may yield minimal additional benefits because impersonal tech service scripts conform to impersonal exchange relationship norms, a service guarantee may be beneficial for touch services under exchange relationship norms in service failure contexts. A service guarantee explicitly promises to satisfy customers’ needs (Hogreve & Gremler, 2009), which supplements the customer rapport and social behaviors implicit in interpersonal touch service scripts (Giebelhausen et al., 2014) that are
missing from exchange relationship norms. Thus, a service guarantee reduces the psychological risk caused by the misalignment between service scripts and the accepted relationship norms. Therefore, a service guarantee should increase service evaluations in service failure contexts when interpersonal touch services are incompatible with impersonal exchange relationship norms. In summary, I propose that a service guarantee moderates customers’ responses to different types of service (touch vs. tech) failures in exchange customer-company relationships.

I hypothesize that there is a three-way interaction among a service guarantee, customer-company relationship norms and service type on customer satisfaction in a service failure context. Specifically:

**H$_3$**: There is no significant difference in customer satisfaction with touch vs. tech service failures under communal customer-company relationship norms, regardless of the absence/presence of a service guarantee.

**H$_4$**: The presence of a service guarantee moderates the impact of service type on customer satisfaction in service failure contexts under exchange customer-company relationship norms, such that:

**H$_{4a}$**: Without a service guarantee, customer satisfaction with tech (vs. touch) service failures is higher.

**H$_{4b}$**: With a service guarantee, customer satisfaction with touch (vs. tech) service failures is higher.
CHAPTER 3 – METHODS AND RESULTS

3.1 Study Overview

Two pretests and three main studies were conducted to test the basic effect (Study 1), underlying mechanism (Study 2), and boundary condition (Study 3) in customers’ service evaluations of different types of service encounters (touch vs. tech service components) across two customer-company relationships (communal vs. exchange). To thoroughly understand touch vs. tech service encounters and communal vs. exchange customer-company relationships in the hospitality industry, I chose empirical test settings covering three major business types in the industry: a hotel, a restaurant and a catering service.

In the following sections, I describe the methods (including the experimental design, manipulation of the independent variables, and measures of the dependent variable and mediator) and present the results for the pretests and each study.

3.2 Pretests

Prior to conducting the three main studies, two pretests were performed to determine (a) whether customers recognize the distinction between the two types of service encounters: touch vs. tech (Pretest 1), and (b) whether service encounter types (i.e., touch vs. tech) and customer-company relationship norms (i.e., communal vs. exchange) are correlated (Pretest 2).
3.2.1 Pretest 1

The aim of Pretest 1 was to determine whether customers could clearly distinguish between the manipulation for an interpersonal touch service encounter (“touch”) and the manipulation for an impersonal technology-facilitated service encounter (“tech”).

3.2.1.1 Participants

62 adult consumers were recruited for Pretest 1 from a U.S.-based online marketing survey panel, Amazon Mechanical Turk (MTurk.com). Demographically, 64.5% of the participants were male and 35.5% were female; the average age of the participants was 32 years, ranging from 20 to 62 years old; 69.4% of participants were Caucasian; and 62.9% of participants had a college level education or above.

3.2.1.2 Procedures

First, participants were presented with the definitions of the two types of service encounters: “touch” service and “tech” service, as shown in Table 3.1. Then, participants were randomly assigned to read a service scenario depicting either the interpersonal touch service condition or the technology-facilitated service condition. They read a short scenario describing a service situation in which they checked in to a hotel using either the hotel front-office agent (“touch” service) or a self-service machine (“tech” service) (see Appendix A for details: Study 1 – Hotel Service Types). After reading the scenario, they were asked to respond to several questions.
Table 3.1 – Definition of “Touch” and “Tech” Service

<table>
<thead>
<tr>
<th>Service Encounter Type</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Touch service</td>
<td>During a service delivery, the customer interacts with the service employee(s), for example, a sit-down dining experience served by a waiter/waitress.</td>
</tr>
<tr>
<td>Tech service</td>
<td>During a service delivery, the customer needs to use a technological facility or machine for the service delivery, for example, using self-service gas pump at a gas station, or using a self check-in machine at an airport.</td>
</tr>
</tbody>
</table>

3.2.1.3 Measures

According to the definitions of “touch” and “tech” service, participants were asked to rate the service described in the scenario on a 7-point scale: from 1 – touch service to 7 – tech service. It was expected that those in the touch (vs. tech) service condition would have significantly lower scores.

3.2.1.4 Results

The results show that the service type manipulation was effective and customers could clearly recognize the distinction between touch and tech service: participants in the touch (vs. tech) service condition rated their service encounters much lower on the touch-tech scale ($M_{Touch} = 2.13 < M_{Tech} = 6.34; t_{(60)} = -10.596, p$-value = .000).

3.2.2 Pretest 2

The purpose of Pretest 2 was to test whether service encounter types (i.e., touch vs. tech) and customer-company relationship tendency (i.e., communal vs. exchange) are actually
correlated.

3.2.2.1 Participants

62 adult consumers were recruited for Pretest 2 from Amazon Mechanical Turk (MTurk.com). Demographically, 54.8% of the participants were male and 45.2% were female; the average age of the participants was 34 years, ranging from 20 to 75 years old; 72.1% of participants were Caucasian; and 60.6% of participants had a college level education or above.

3.2.2.2 Procedures

Participants were randomly assigned to either the touch or tech service condition. Similar to Pretest 1, they read a short scenario describing a service situation in which they checked in to a hotel using either the hotel front-office agent (“touch” service) or a self-service machine (“tech” service). After reading the scenario, they were asked to respond to survey questions.

3.2.2.3 Measures

First, participants rated the service described in the scenario using a 7-point scale: from 1 – touch service to 7 – tech service. Then, participants answered questions measuring the customer-company relationship tendency via the 10-item Net Communality Score (1 – strongly disagree, 7 – strongly agree; Cronbach’s α = .910) (see Appendix B, adapted from Aggarwal, 2004).

3.2.2.4 Results

Participants in the touch service condition rated the interpersonal service scenario (e.g., check
in by the hotel front-office agent) significantly lower than those in the tech service condition who read the impersonal service scenario (e.g., check in using a SST machine) on a 7-point touch-tech service scale (1 = touch service to 7 = tech service) (M_{Touch} = 1.97 < M_{Tech} = 6.23; t_{(60)} = 11.551, p-value = .000). Results confirm that the touch and tech service types are significantly correlated with the Net Communality Scores (r_{(60)} = -.622, p-value = .000).

Specifically, touch (vs. tech) service is associated with significantly higher Net Communality Scores (M_{Touch} = 4.47 > M_{Tech} = 3.88; t_{(60)} = -4.882, p-value = .000).

The two pretests established the experimental foundation for the following main studies. First, the successful manipulation of touch vs. tech service encounters confirms that customers make distinctions between different types of service encounters. Second, the significant correlation between service encounter type and Net Communality Score indicates a relationship between service type and customer-company relationship norms. In particular, the higher Net Communality Scores for touch (vs. tech) services verify my prediction: touch services conform to communal customer-company relationship norms, while tech services conform to exchange relationship norms.

### 3.3 Study 1 (Test of Basic Effect)

Study 1 tested the basic interaction effect between service encounter type (touch vs. tech) and customer-company relationship norms (communal vs. exchange) on customers’ service satisfaction levels.
3.3.1 Methods

3.3.1.1 Experiment Design

A 2 (customer-company relationship norms: communal vs. exchange) x 2 (service encounter type: touch vs. tech) between-subjects experimental design was employed to test the basic effect. Participants were randomly assigned to one of the four experimental conditions.

3.3.1.2 Participants

A total of 120 customers were recruited from Amazon Mechanical Turk (MTurk.com). I eliminated data from respondents who did not pass the attention check and who were in the tech service condition without previous SST experience. The analyses are based on data from a final sample of 106 participants. Demographically, 59.4% of the participants were male and 40.6% were female; the average age was 35 years, ranging from 21 to 64 years; approximately 56.6% of the participants held a college degree or above and about 84% were Caucasian. Table 3.2 summarizes the demographic characteristics of the participants.
Table 3.2 – Demographic Characteristics of Participants (Study 1)

<table>
<thead>
<tr>
<th>Demographic Characteristics</th>
<th>Total</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>63</td>
<td>59.4</td>
</tr>
<tr>
<td>Female</td>
<td>43</td>
<td>40.6</td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High school</td>
<td>16</td>
<td>15.1</td>
</tr>
<tr>
<td>Some college education</td>
<td>30</td>
<td>28.3</td>
</tr>
<tr>
<td>College degree</td>
<td>47</td>
<td>44.3</td>
</tr>
<tr>
<td>Graduate school</td>
<td>13</td>
<td>12.3</td>
</tr>
<tr>
<td><strong>Ethnicity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caucasian/non-Hispanic</td>
<td>89</td>
<td>84.0</td>
</tr>
<tr>
<td>African American</td>
<td>4</td>
<td>3.8</td>
</tr>
<tr>
<td>Hispanic</td>
<td>4</td>
<td>3.8</td>
</tr>
<tr>
<td>Asian</td>
<td>7</td>
<td>6.6</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
<td>1.8</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean (SD)</td>
<td>34.56 (10.85)</td>
<td>21 – 64</td>
</tr>
<tr>
<td>Range</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
3.3.1.3 Stimuli and Procedures

Manipulations of communal vs. exchange customer-company relationship norms were based on previous research (Kim, 2011). Participants were first asked to imagine that they had planned a weekend getaway to a nearby city and booked a hotel room. Next, they were presented with a description that triggered either communal or exchange relationship norms (see Appendix A, Study 1 – Customer-Company Relations). Then, participants read a hotel service scenario, either an interpersonal service (i.e., “touch” service of checking in to the hotel using a front-office agent) or a technology-facilitated service (i.e., “tech” service of using the hotel self-service machine to check-in). Finally, participants responded to the survey questions.

3.3.1.4 Measures

The survey included several groups of questions that served as manipulation checks, measured the dependent variable and collected demographic information. Following previous research (Aggarwal, 2004; Kim, 2011), the Relationship Norm Scale (Cronbach’s $\alpha = .916$) was employed as the manipulation check for customer-company relationship norms (see Appendix B for details). Participants used a 7-point bipolar scale to respond to five questions that assessed the effectiveness of the relationship manipulation: the lowest score reflected high communal norms while high scores reflected high exchange norms. It was expected that those in the communal (vs. exchange) relationship condition would provide significantly lower scores on the Relationship Norm Scale. Similar to Pretest 1, I tested the manipulation
of touch vs. tech service type by asking participants to rate the service described in the touch vs. tech scenario on a 7-point scale from 1 – touch service to 7 – tech service. It was expected that those in the touch (vs. tech) service condition would provide significantly lower scores. The dependent variable was customer satisfaction; to measure this variable, customers responded to three items using a 7-point scale (Cronbach’s α = .832) (Iacobucci & Ostrom, 1993). Demographic information was collected at the end of the survey, including participants’ gender, age, education, ethnicity and previous SST experience. Details about each question and measurement scale are provided in Appendix B.

3.3.2 Results

3.3.2.1 Manipulation Check

The results show that both manipulations were effective. In terms of customer-company relationship norms, participants in the communal (vs. exchange) relationship condition provided significantly lower scores ($M_{Communal} = 3.68 < M_{Exchange} = 4.58; t(104) = -2.791, p-value = .006$). Participants in the communal relationship condition indicated that a hotel is more like a friend and a family member, and that hotels should focus more on creating warm feelings in customers, displaying caring toward customers, and treating customers like they are special. Conversely, those in the exchange relationship condition thought that a hotel is more like a business person and a merchant, and that hotels should focus more on providing service in order to attract business, providing good value for the money, and ensuring that customers get their money’s worth.

The manipulation check results for service encounter type confirm that participants clearly distinguished between the different types of service encounters: participants in the
touch (vs. tech) service condition rated their service encounter much lower on the touch-tech scale ($M_{\text{Touch}} = 2.83 < M_{\text{Tech}} = 4.91; t_{(104)} = -6.208, p\text{-value} = .000$).

### 3.3.2.2 ANOVA Results

A 2 (customer-company relationship norms: communal vs. exchange) x 2 (service encounter type: touch vs. tech) ANOVA was employed to test the basic effect. The mean values are shown in Table 3.3.

**Table 3.3 – Means and Standard Deviations of the Results (Study 1)**

<table>
<thead>
<tr>
<th>Relationship Norms</th>
<th>Service Encounter</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communal</td>
<td>Touch</td>
<td>5.711</td>
<td>.715</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>Tech</td>
<td>5.040</td>
<td>1.412</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>5.406</td>
<td>1.129</td>
<td>55</td>
</tr>
<tr>
<td>Exchange</td>
<td>Touch</td>
<td>5.507</td>
<td>.904</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td>Tech</td>
<td>5.726</td>
<td>.673</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>5.628</td>
<td>.785</td>
<td>51</td>
</tr>
<tr>
<td>Total</td>
<td>Touch</td>
<td>5.623</td>
<td>.801</td>
<td>53</td>
</tr>
<tr>
<td></td>
<td>Tech</td>
<td>5.403</td>
<td>1.129</td>
<td>53</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>5.513</td>
<td>.980</td>
<td>106</td>
</tr>
</tbody>
</table>

**Table 3.4 – ANOVA Table for Customer Satisfaction (Study 1)**

<table>
<thead>
<tr>
<th>Source</th>
<th>Type III Sum of Squares</th>
<th>DF</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corrected model</td>
<td>8.044$^a$</td>
<td>3</td>
<td>2.681</td>
<td>2.945</td>
<td>.037</td>
</tr>
<tr>
<td>Intercept</td>
<td>3168.776</td>
<td>1</td>
<td>3168.776</td>
<td>3479.785</td>
<td>.000</td>
</tr>
<tr>
<td>Service</td>
<td>1.340</td>
<td>1</td>
<td>1.340</td>
<td>1.472</td>
<td>.228</td>
</tr>
<tr>
<td>Relationship</td>
<td>1.525</td>
<td>1</td>
<td>1.525</td>
<td>1.675</td>
<td>.199</td>
</tr>
<tr>
<td>Relationship * service</td>
<td>5.194</td>
<td>1</td>
<td>5.194</td>
<td>5.704</td>
<td>.019</td>
</tr>
<tr>
<td>Error</td>
<td>92.884</td>
<td>102</td>
<td>.911</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>3322.111</td>
<td>106</td>
<td>.911</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corrected total</td>
<td>100.928</td>
<td>105</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

$^a$ R Squared = .080 (Adjusted R Squared = .053)
The ANOVA results (ANOVA Table 3.4) reveal a significant interaction effect between relationship norms and service type ($F_{(1, 102)} = 5.704, p\text{-value} = .019$). A simple main effect test was performed to probe the significant interaction effect. Under communal relationship norms, there is a significant difference between the two types of service ($M_{\text{Touch}} = 5.71, M_{\text{Tech}} = 5.04; F_{(1, 102)} = 6.744, p\text{-value} = .011$). However, there is no significant difference between the two types of service under exchange relationship norms ($M_{\text{Touch}} = 5.51, M_{\text{Tech}} = 5.73; F_{(1, 102)} = .665, p\text{-value} = .417$). The simple main effects are plotted in Figure 3.1.

**Figure 3.1 – Means Plot of Customer Satisfaction (Study 1)**

*Star symbol indicates a significant difference between the two types of service encounters.*

### 3.3.3 Discussion

The aim of Study 1 was to examine the basic interaction effects between service encounter type (touch vs. tech) and customer-company relationship norms (communal vs. exchange).
Prior to the study, the results of two pretests confirmed that customers distinguish between the two types of service encounters (i.e., interpersonal touch service vs. impersonal technology-facilitated service), and that the proposed correlation between service type and relationship norms exists. Building on the pretests, the results of Study 1 partially confirm the hypothesized basic effect. Under communal customer-company relationship norms, customers are more satisfied with interpersonal touch services than impersonal technology-facilitated services. However, under exchange relationship norms, although customers’ evaluations of tech services are better than touch services (as expected), the satisfaction difference is not statistically significant.

3.4 Study 2 (Underlying Mechanism; Test of H1 and H2)

To further investigate the basic effect revealed in Study 1, Study 2 was designed to expand to the four types of service encounters along the two dimensions of “touch” and “tech” delineated in Figure 2.5. In the matrix, traditional interpersonal touch service encounters (i.e., touch) are classified as Type 1 and impersonal technology-facilitated service encounters (i.e., tech) are classified as Type 2. Type 3 service encounters serve as the control condition in the current study as they do not involve significant amounts of either touch or tech. Type 4 service encounters are the newest service type, with high involvement of both touch and tech components during the service encounter. The purpose of Study 2 is to help verify whether the basic effects found in Study 1 hold for service encounters with different levels of touch vs.
tech components (e.g., high touch-high tech smart interactive service) and in another service setting (i.e., a restaurant). Furthermore, the underlying mechanism is examined to test whether service evaluations are affected by the extent to which service types conform to or violate relationship norms by creating perceptions of warmth or competence.

3.4.1 Methods

3.4.1.1 Experiment Design

A 2 (customer-company relationship norms: communal vs. exchange) x 4 (type of service encounter) between-subjects experimental design was employed. Participants were randomly assigned to one of the eight experimental conditions.

3.4.1.2 Participants

237 participants were recruited from Amazon Mechanical Turk (MTurk.com).

Demographically, 52.7% of the participants were male and 47.3% were female; the average age of the participants was 36 years, ranging from 20 to 72 years old; approximately 63.2% of the participants held a college degree or above; and about 78.9% were Caucasian. Table 3.5 summarizes the demographic characteristics of the participants.
Table 3.5 – Demographic Characteristics of Participants (Study 2)

<table>
<thead>
<tr>
<th>Demographic Characteristics</th>
<th>Total</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>125</td>
<td>52.7</td>
</tr>
<tr>
<td>Female</td>
<td>112</td>
<td>47.3</td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High school</td>
<td>32</td>
<td>13.5</td>
</tr>
<tr>
<td>Some college education</td>
<td>55</td>
<td>23.2</td>
</tr>
<tr>
<td>College degree</td>
<td>107</td>
<td>45.1</td>
</tr>
<tr>
<td>Graduate school</td>
<td>43</td>
<td>18.1</td>
</tr>
<tr>
<td><strong>Ethnicity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caucasian/non-Hispanic</td>
<td>187</td>
<td>78.9</td>
</tr>
<tr>
<td>African American</td>
<td>17</td>
<td>7.2</td>
</tr>
<tr>
<td>Hispanic</td>
<td>13</td>
<td>5.5</td>
</tr>
<tr>
<td>Asian</td>
<td>15</td>
<td>6.3</td>
</tr>
<tr>
<td>Other</td>
<td>5</td>
<td>2.1</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean (SD)</td>
<td>35.49 (11.12)</td>
<td>Range</td>
</tr>
</tbody>
</table>
3.4.1.3 Stimuli and Procedures

The manipulation of customer-company relationship norms was similar to Study 1 (see Appendix A, Study 2 – Customer-Company Relations). Four different service scenarios were created as having lunch at a restaurant with different levels of touch vs. tech components: Type 1 table service facilitated by a waiter (high touch-low tech); Type 2 self-service using a technology kiosk to order a meal (low touch-high tech); Type 3 self-service at a buffet (low touch-low tech; control condition); and Type 4 using an interactive app on a tablet computer to order food that is delivered by a waiter (high touch-high tech) (see Appendix A, Study 2 – Restaurant Service Types). After reading one of these scenarios, each participant responded to the survey questions.

3.4.1.4 Measures

The survey includes several groups of questions: manipulation checks, dependent variable measures, mediator measures, demographic items, and realism checks. The Relationship Norm Scale (Aggarwal, 2004; Kim, 2011) (Cronbach’s $\alpha = .886$) was employed as the manipulation check for customer-company relationship norms (see Appendix B for details). Similar to Study 1, the manipulation of touch vs. tech service type was tested by asking participants to rate the service described in the touch vs. tech scenario on a 7-point scale from 1 – touch service to 7 – tech service. The dependent variable is customer satisfaction, including three items on a 7-point scale (Cronbach’s $\alpha = .892$) (Iacobucci & Ostrom, 1993). Participants responded to the realism checks and provided demographic information at the
end of the survey. Details about each question and measurement scale are provided in Appendix B.

3.4.2 Results

3.4.2.1 Manipulation and Realism Checks

The results show that both manipulations were effective. In terms of customer-company relationship norms, participants in the communal (vs. exchange) relationship condition provided significantly lower scores ($M_{Communal} = 3.86 < M_{Exchange} = 4.67; t_{(235)} = -4.155$, $p$-value = .000). Participants in the communal relationship condition indicated that a restaurant is more like a friend and a family member, and that restaurants should focus more on creating warm feelings in customers, displaying caring toward customers, and treating customers like they are special. Conversely, those in the exchange relationship condition thought that a restaurant is more like a business person and a merchant, and that restaurants should focus more on providing service in order to attract business, providing good value for the money, and ensuring that customers get their money’s worth.

A one-way ANOVA was conducted to check the manipulation of different service encounter types. The results confirm significant differences in customers’ perceptions of the four different types of service encounters along the 7-point touch-tech service scale (1 – touch to 7 – tech; $M_{Type 1} = 3.10$, $M_{Type 2} = 4.67$, $M_{Type 3} = 4.05$, $M_{Type 4} = 3.95$; $F_{(3, 233)} = 8.537$, $p$-value = .000). The means plot in Figure 3.2 demonstrates the differences among the four types of service.
Scenario realism was checked with two questions: “How realistic was the restaurant service scenario?” (1 – extremely unrealistic to 7 – extremely realistic), and “How easy was it for you to understand the service experience described in this scenario?” (1 – very difficult to 7 – very easy). Overall, participants found the scenarios to be realistic ($M_{Realism} = 5.39$) and easy to understand ($M_{Understand} = 6.28$).

### 3.4.2.2 ANOVA Results

A 2 (customer-company relationship norms: communal vs. exchange) x 4 (type of service encounter) ANOVA was conducted. The mean values are shown in Table 3.6. The ANOVA results (see Table 3.7) reveal a marginally significant interaction effect between relationship norms and service type ($F(3, 229) = 2.527$, $p$-value = .058).
Table 3.6 – Means and Standard Deviations of the Results (Study 2)

<table>
<thead>
<tr>
<th>Relationship Norms</th>
<th>Service Encounter</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Type 1</td>
<td>5.100</td>
<td>1.066</td>
<td>30</td>
</tr>
<tr>
<td>Communal</td>
<td>Type 2</td>
<td>4.131</td>
<td>1.693</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td>Type 3</td>
<td>3.969</td>
<td>.913</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>Type 4</td>
<td>5.010</td>
<td>1.198</td>
<td>33</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>4.561</td>
<td>1.324</td>
<td>123</td>
</tr>
<tr>
<td></td>
<td>Type 1</td>
<td>4.381</td>
<td>1.103</td>
<td>28</td>
</tr>
<tr>
<td>Exchange</td>
<td>Type 2</td>
<td>4.529</td>
<td>1.376</td>
<td>29</td>
</tr>
<tr>
<td></td>
<td>Type 3</td>
<td>3.976</td>
<td>1.257</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td>Type 4</td>
<td>4.379</td>
<td>1.509</td>
<td>29</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>4.319</td>
<td>1.320</td>
<td>114</td>
</tr>
<tr>
<td></td>
<td>Type 1</td>
<td>4.753</td>
<td>1.134</td>
<td>58</td>
</tr>
<tr>
<td>Total</td>
<td>Type 2</td>
<td>4.333</td>
<td>1.539</td>
<td>57</td>
</tr>
<tr>
<td></td>
<td>Type 3</td>
<td>3.972</td>
<td>1.078</td>
<td>60</td>
</tr>
<tr>
<td></td>
<td>Type 4</td>
<td>4.715</td>
<td>1.378</td>
<td>62</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>4.444</td>
<td>1.325</td>
<td>237</td>
</tr>
</tbody>
</table>

Table 3.7 – ANOVA Table for Customer Satisfaction (Study 2)

<table>
<thead>
<tr>
<th>Source</th>
<th>Type III Sum of Squares</th>
<th>DF</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corrected model</td>
<td>40.026*</td>
<td>7</td>
<td>5.718</td>
<td>3.499</td>
<td>.001</td>
</tr>
<tr>
<td>Intercept</td>
<td>4643.910</td>
<td>1</td>
<td>4643.910</td>
<td>2841.407</td>
<td>.000</td>
</tr>
<tr>
<td>Service</td>
<td>22.979</td>
<td>3</td>
<td>7.660</td>
<td>4.687</td>
<td>.003</td>
</tr>
<tr>
<td>Relationship</td>
<td>3.293</td>
<td>1</td>
<td>3.293</td>
<td>2.015</td>
<td>.157</td>
</tr>
<tr>
<td>Relationship * service</td>
<td>12.389</td>
<td>3</td>
<td>4.130</td>
<td>2.527</td>
<td>.058</td>
</tr>
<tr>
<td>Error</td>
<td>374.271</td>
<td>229</td>
<td>1.634</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>5095.778</td>
<td>237</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corrected total</td>
<td>414.296</td>
<td>236</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*R Squared = .097 (Adjusted R Squared = .069)

A simple effect test was performed to probe the marginally significant interaction effect; the results replicate the results of Study 1. Under communal relationship norms, there were significant differences among the four types of service \( F(3, 229) = 6.480, p\text{-value} = .000 \).
Conversely, there were no significant differences among service types under exchange relationship norms ($F_{(3, 229)} = .975, p\text{-value} = .405$). The simple main effects are plotted in Figure 3.3.

In particular, the results of the comparison between Type 1 high touch-low tech service and Type 2 low touch-high tech service replicate the results from Study 1. Under communal customer-company relationship norms, customers responded better to touch (Type 1) service than to tech (Type 2) service ($M_{\text{Type 1 Touch}} = 5.10 > M_{\text{Type 2 Tech}} = 4.13; F_{(1, 111)} = 7.696, p\text{-value} = .006$), while there was no significant difference in responses to the two types of service encounters under exchange relationship norms ($M_{\text{Type 1 Touch}} = 4.38, M_{\text{Type 2 Tech}} = 4.53; F_{(1, 111)} = .176, p\text{-value} = .676$).

**Figure 3.3 – Means Plot for Customer Satisfaction (Study 2)**

*Star symbol indicates significant differences among the four types of service encounters.*
3.4.2.3 Moderated Mediation Results

As hypothesized, the results of Study 1 and Study 2 (Type 1 high touch-low tech vs. Type 2 low touch-high tech), show enhanced customer responses to touch (vs. tech) service under communal customer-company relationship norms. However, the results do not support the hypothesized customer responses to different types of service encounters under exchange relationship norms. Therefore, in the moderated mediation test, I only tested customers’ perceptions of warmth, the underlying mechanism in communal relationships.

To test the proposed underlying mechanism of warmth in communal relationships, a moderated mediation test following the PROCESS procedure (Hayes, 2013; Model 7) was performed with the recommended bootstrap technique. The mediator of warmth was measured by two items of “caring” and “helpfulness” (Cronbach’s α = .832) (Bolton & Mattila, 2015). The moderated-mediation test results show that warmth mediated customers’ service evaluations to touch vs. tech service encounters under communal relationship norms (β = -1.333, 95% bootstrap interval: -1.987, -.775). On the other hand, the indirect effect via warmth was attenuated under exchange relationship norms (β = -.504, 95% bootstrap interval: -1.064, .040).

Together, the results of Study 1 and Study 2 support H1: under communal customer-company relationship norms, customers respond better to touch service than to tech service, and perceptions of warmth mediate customer satisfaction. However, the results do not support H2, as there was no significant difference in customers’ responses to touch vs.
tech service under exchange customer-company relationship norms.

3.4.3 Discussion

Study 2 revealed several interesting findings of theoretical value. The checks of four types of service encounters on the touch-tech scale confirm that customers’ perceptions of different levels of touch vs. tech components in service encounters are consistent with the proposed touch vs. tech matrix shown in Figure 2.5. Type 1 high touch-low tech service encounters are located toward the touch end of the scale, Type 2 low touch-high tech service encounters are located toward the tech end of the scale, and both Type 3 low touch-low tech and Type 4 high touch-high tech service encounters are located in the middle due to equal levels of touch vs. tech components (i.e., both low in Type 3 and both high in Type 4). The post hoc test comparisons of the four service encounters further confirm that, at the .05 level of significance, Type 1 and Type 2 are significantly different from each other on the touch-tech scale, and Type 3 and Type 4 are not significantly different from each other, but both are different from Type 1. Such results verify the legitimacy of the touch vs. tech matrix for future service research.

The results of Study 2 replicate those of Study 1. Communal relationship norms have varying impact on customers’ satisfaction with touch vs. tech service: customers are more satisfied with Type 1 interpersonal touch service than Type 2 impersonal tech service because touch service scripts better conform to communal relationship norms and create perceptions of warmth. Similar to Study 1, although customers provide higher evaluations of tech service
encounters than touch service encounters under the exchange relationship norms, their satisfaction levels do not differ significantly.

There are two possible explanations for the insignificant results in exchange relationships. First, in an exchange relationship, customers expect to receive comparable objective benefits in return for their contributions (Aggarwal, 2004; Aggarwal & Zhang, 2006; Clark & Mills, 1993). In the current context, customers in exchange relationships focused on successful service delivery. Once service success was achieved, the advantages created by conformity between the service type and exchange customer-company relationship norms were attenuated, and consequently, the difference between customers’ satisfaction with a tech and touch service was attenuated to insignificance. The insignificant difference between two types of services under exchange customer-company norms in a service success context leads to a question: Would the results hold in a service failure context? I investigate this question in Study 3. The second reason relates to the similar levels of competence across the two service types in the current context. When customers in exchange relationships evaluate service encounters, they emphasize the service provider’s ability to provide equal or greater benefits in return for their contributions (Scott et al., 2013). Since both touch and tech services provide similar levels of satisfactory service, customers perceive no differences in competence between the two types of services. Results of a follow-up t-test mean comparison between Type 1 touch service and Type 2 tech service confirms that customers’ perceptions of competence did not differ significantly for these two types of service encounters ($M_{\text{Type 1 Touch}} = 5.34, M_{\text{Type 2 Tech}} = 4.94; t_{(113)} = 1.494, p$-value $= .138$).
In this study, the control condition was the Type 3 low touch-low tech service encounter due to minimal involvement of either touch (service personnel) or tech (technology devices). The results demonstrate that this type of service is associated with the lowest level of satisfaction in both communal and exchange relationships ($M_{\text{Type 3 Communal}} = 3.99$, $M_{\text{Type 3 Exchange}} = 3.98$), which, from another perspective, suggests the impact of relationship norms on service type. Type 4 high touch-high tech service is the emerging service encounter type that requires further study.

3.5 Study 3 (Boundary Condition; Test of $H_3$ and $H_4$)

In Study 3, the moderating effect of a service guarantee was examined on the basic interaction effects between service encounter type (touch vs. tech) and customer-company relationship norms (communal vs. exchange). Due to the emerging popularity of high touch-high tech service, the scenarios in this study were designed as Type 4 service encounters with both touch and tech service components, but on different levels in order to test the boundary condition. This study examined customers’ responses to the different components of high touch-high tech service (touch vs. tech) in a service failure context, under either the communal or exchange customer-company relationship norms in the absence or presence of a service guarantee.

3.5.1 Methods

3.5.1.1 Experiment Design
A 2 (communal vs. exchange) x 2 (high level of touch vs. tech in a Type 4 service encounter) x 2 (absence vs. presence of a service guarantee) experiment was conducted for Study 3.

Participants were randomly assigned to one of the eight experimental conditions.

3.5.1.2 Participants

A total of 226 customers were recruited from Amazon Mechanical Turk (MTurk.com).

Demographically, 54% of participants were male and 46% were female; the average age of the participants was 33 years, ranging from 18 to 64 years old; approximately 62% of the participants held a college degree or above; and about 73.9% were Caucasian. Table 3.8 summarizes the demographic characteristics of the participants.
Table 3.8 – Demographic Characteristics of Participants (Study 3)

<table>
<thead>
<tr>
<th>Demographic Characteristics</th>
<th>Total</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>122</td>
<td>54.0</td>
</tr>
<tr>
<td>Female</td>
<td>104</td>
<td>46.0</td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High school</td>
<td>22</td>
<td>9.7</td>
</tr>
<tr>
<td>Some college education</td>
<td>64</td>
<td>28.3</td>
</tr>
<tr>
<td>College degree</td>
<td>106</td>
<td>46.9</td>
</tr>
<tr>
<td>Graduate School</td>
<td>34</td>
<td>15.0</td>
</tr>
<tr>
<td><strong>Ethnicity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caucasian/non-Hispanic</td>
<td>167</td>
<td>73.9</td>
</tr>
<tr>
<td>African American</td>
<td>17</td>
<td>7.5</td>
</tr>
<tr>
<td>Hispanic</td>
<td>13</td>
<td>5.8</td>
</tr>
<tr>
<td>Asian</td>
<td>25</td>
<td>11.1</td>
</tr>
<tr>
<td>Other</td>
<td>4</td>
<td>1.7</td>
</tr>
</tbody>
</table>

**Age**

<table>
<thead>
<tr>
<th>Mean (SD)</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>33.01 (9.66)</td>
<td>18 – 64</td>
</tr>
</tbody>
</table>
3.5.1.3 Stimuli and Procedures

The manipulation of customer-company relationship norms was similar to the previous two studies (see Appendix A, Study 3 – Customer-Company Relationship). The service scenarios depicted a failed service experience with a catering company. In the touch scenario, customers used a catering service app with the on-site event planner’s assistance to plan a party; in the tech scenario, customers planned a party using the catering service app and had limited communication with the catering company staff though the app (see Appendix A, Study 3 – Catering Service Types). After reading service failure scenarios, participants were either directed to the next section of survey questions, or presented with a service guarantee page with the following text: “We will work tirelessly to make sure that your event is planned and executed in the most professional and stress-free way possible. If you are not 100% satisfied, let us know and we will do whatever we can to make it right” (see Appendix A, Study 3 – Service Guarantee). Participants then answered the survey questions.

3.5.1.4 Measures

The survey questions included manipulation checks, measures of the dependent variable, demographic information items, and realism checks. Similar to the previous two studies, the Relationship Norm Scale (Aggarwal, 2004; Kim, 2011) (Cronbach’s α = .895) was used to check the manipulation of customer-company relationship norms (see Appendix B for details). The manipulation of touch vs. tech service components was tested by asking participants to rate the service described in the touch vs. tech scenario on a 7-point scale from
1 – touch service to 7 – tech service. Participants responded to three items measuring the dependent variable of customer satisfaction using a 7-point scale (Cronbach’s α = .917) (Iacobucci & Ostrom, 1993). Participants responded to realism checks and demographic information items at the end of the survey. Details about each question and measurement scale are provided in Appendix B.

3.5.2 Results

3.5.2.1 Manipulation and Realism Checks

The results show that both manipulations were effective. Participants in the communal (vs. exchange) relationship condition had significantly lower scores ($M_{Communal} = 3.90 < M_{Exchange} = 5.00$; $t(224) = -5.688$, $p$-value = .000). Participants in the communal relationship condition indicated that a catering company is more like a friend and a family member, and that catering companies should focus more on creating warm feelings in customers, displaying caring toward customers, and treating customers like they are special. Conversely, those in the exchange relationship condition thought that a catering company is more like a business person and a merchant, and that catering companies should focus more on providing service in order to attract business, providing good value for the money, and ensuring that customers get their money’s worth.

A $t$-test was conducted to check the manipulation of touch vs. tech components in service. The results confirm that participants could recognize the different levels of touch vs. tech components in the high touch-high tech service encounter along the 7-point touch-tech service scale ($1 – touch service to 7 – tech service; M_{Touch} = 3.94 < M_{Tech} = 4.37; t(224) = -2.031$, $p$-value = .043).

The manipulation for the absence or presence of a service guarantee was checked with a
binary recall question (1 – Yes, 0 – No): “In the scenario, was there an explicit service guarantee on the catering company’s poster?” The majority of participants in each condition (absence vs. presence of service guarantee) correctly recalled the scenario presented to them.

Scenario realism was checked by two questions: “How realistic was the restaurant service scenario?” (1 – extremely unrealistic to 7 – extremely realistic), and “How easy was it for you to understand the service experience described in this scenario?” (1 – very difficult to 7 – very easy). Overall, participants found the scenarios to be realistic ($M_{\text{Realism}}=5.27$) and easy to understand ($M_{\text{Understand}}=6.03$).

### 3.5.2.2 ANOVA Results

A 2 (communal vs. exchange) x 2 (absence vs. presence of service guarantee) x 2 (high level of touch vs. tech in a Type 4 service encounter) ANOVA was conducted. The mean values for each cell are shown in Table 3.9. The ANOVA results (see ANOVA Table 3.10) confirm the proposed three-way interaction among service encounter type, relationship norms and service guarantee ($F_{(1, 218)} = 9.694, p$-value $=.002$). To further probe the three-way interaction effect, follow-up tests were conducted for each relationship condition (i.e., communal vs. exchange customer-company relationship norms).
Table 3.9 – Means and Standard Deviations of the Results (Study 3)

<table>
<thead>
<tr>
<th>Relationship Norms</th>
<th>Service Guarantee</th>
<th>Service Type</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Touch</td>
<td>2.7600</td>
<td>1.16476</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tech</td>
<td>2.4902</td>
<td>1.05803</td>
<td>34</td>
</tr>
<tr>
<td>Communal Absence</td>
<td></td>
<td>Total</td>
<td>2.6045</td>
<td>1.10290</td>
<td>59</td>
</tr>
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<td></td>
<td></td>
<td>Touch</td>
<td>2.8000</td>
<td>1.23363</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tech</td>
<td>3.2222</td>
<td>1.44686</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total</td>
<td>2.9877</td>
<td>1.33642</td>
<td>54</td>
</tr>
<tr>
<td>Communal Presence</td>
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<td>Touch</td>
<td>2.7818</td>
<td>1.19191</td>
<td>55</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tech</td>
<td>3.2222</td>
<td>1.44686</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total</td>
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<td>1.33642</td>
<td>54</td>
</tr>
<tr>
<td>Exchange Absence</td>
<td></td>
<td>Touch</td>
<td>2.7246</td>
<td>1.41654</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tech</td>
<td>3.5200</td>
<td>1.19830</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total</td>
<td>3.1389</td>
<td>1.35415</td>
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<td>Exchange Presence</td>
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<td>Touch</td>
<td>3.8667</td>
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<td>Tech</td>
<td>3.1222</td>
<td>1.51742</td>
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<tr>
<td></td>
<td></td>
<td>Total</td>
<td>3.5231</td>
<td>1.55676</td>
<td>65</td>
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<tr>
<td>Exchange Total</td>
<td></td>
<td>Touch</td>
<td>3.4138</td>
<td>1.57627</td>
<td>58</td>
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<tr>
<td></td>
<td></td>
<td>Tech</td>
<td>3.3030</td>
<td>1.38373</td>
<td>55</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total</td>
<td>3.3599</td>
<td>1.48012</td>
<td>113</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Touch</td>
<td>2.7431</td>
<td>1.27763</td>
<td>48</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tech</td>
<td>2.9266</td>
<td>1.22250</td>
<td>59</td>
</tr>
<tr>
<td>Total Absence</td>
<td></td>
<td>Total</td>
<td>2.8442</td>
<td>1.24496</td>
<td>107</td>
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<td></td>
<td></td>
<td>Touch</td>
<td>3.3744</td>
<td>1.48897</td>
<td>65</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tech</td>
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<td>1.47338</td>
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<td></td>
<td>Total</td>
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<td></td>
<td></td>
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<td>1.43183</td>
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<tr>
<td></td>
<td></td>
<td>Tech</td>
<td>3.0413</td>
<td>1.34749</td>
<td>113</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total</td>
<td>3.0737</td>
<td>1.38759</td>
<td>226</td>
</tr>
</tbody>
</table>
Table 3.10 – ANOVA Table for Customer Satisfaction (Study 3)

<table>
<thead>
<tr>
<th>Source</th>
<th>Type III Sum of Squares</th>
<th>DF</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corrected model</td>
<td>46.674a</td>
<td>7</td>
<td>6.668</td>
<td>3.760</td>
<td>.001</td>
</tr>
<tr>
<td>Intercept</td>
<td>2072.299</td>
<td>1</td>
<td>2072.299</td>
<td>1168.726</td>
<td>.000</td>
</tr>
<tr>
<td>Relationship</td>
<td>13.271</td>
<td>1</td>
<td>13.271</td>
<td>7.485</td>
<td>.007</td>
</tr>
<tr>
<td>Service guarantee</td>
<td>7.934</td>
<td>1</td>
<td>7.934</td>
<td>4.474</td>
<td>.036</td>
</tr>
<tr>
<td>Service</td>
<td>.143</td>
<td>1</td>
<td>.143</td>
<td>.080</td>
<td>.777</td>
</tr>
<tr>
<td>Relationship * service guarantee</td>
<td>.003</td>
<td>1</td>
<td>.003</td>
<td>.002</td>
<td>.969</td>
</tr>
<tr>
<td>Relationship * service</td>
<td>.036</td>
<td>1</td>
<td>.036</td>
<td>.020</td>
<td>.888</td>
</tr>
<tr>
<td>Service guarantee * service</td>
<td>2.480</td>
<td>1</td>
<td>2.480</td>
<td>1.399</td>
<td>.238</td>
</tr>
<tr>
<td>Service guarantee * relationship * service</td>
<td>17.188</td>
<td>1</td>
<td>17.188</td>
<td>9.694</td>
<td>.002</td>
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<tr>
<td>Error</td>
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<td>1.773</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>2568.444</td>
<td>226</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Corrected total</td>
<td>433.215</td>
<td>225</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*R Squared = .108 (Adjusted R Squared = .079)*

3.5.2.2.1 Communal Customer-Company Relationship Norms

In the communal relationship condition, the results reveal a non-significant interaction effect of service guarantee and service type \((F_{(1,109)} = 2.234, p\text{-value} = .138)\). A simple effect test further shows that in the absence of a service guarantee, there was no significant difference in the level of customer satisfaction with different types of services in a service failure context \((M_{\text{Touch}} = 2.76, M_{\text{Tech}} = 2.49; F_{(1,109)} = .707, p\text{-value} = .402)\). Similarly, in the presence of a service guarantee, customers’ evaluations of the two types of service failures did not differ significantly \((M_{\text{Touch}} = 2.80, M_{\text{Tech}} = 3.22; F_{(1,109)} = 1.601, p\text{-value} = .208)\). The simple main effects are plotted in Figure 3.4. Therefore, H₃ is supported: under communal customer-company relationship norms, there is no significant difference between customer
satisfaction with a touch vs. tech service failure regardless of the absence or presence of a service guarantee.

**Figure 3.4 – Means Plot of Customer Satisfaction under Communal Customer-Company Relationship Norms (Study 3)**

<table>
<thead>
<tr>
<th>Customer Satisfaction</th>
<th>Without Service Guarantee</th>
<th>With Service Guarantee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Touch</td>
<td>2.8</td>
<td>3.2</td>
</tr>
<tr>
<td>Tech</td>
<td>2.4</td>
<td>3.6</td>
</tr>
</tbody>
</table>

### 3.5.2.2.2 Exchange Customer-Company Relationship Norms

In the exchange relationship condition, the results reveal a significant interaction effect of service guarantee and service encounter type ($F_{(1, 109)} = 7.909, p\text{-value} = .006$). Hence, H$_4$ is supported: a service guarantee moderates the impact of service type on customer satisfaction under exchange customer-company relationship norms in a service failure context. The simple effect test demonstrates that, in the absence of a service guarantee, there was a marginally significant difference in customer evaluations of services with different levels of touch vs. tech components when the service failed: customer satisfaction with a tech (vs. touch) service failure was higher ($M_{\text{Touch}} = 2.73, M_{\text{Tech}} = 3.52; F_{(1, 109)} = 3.675, p\text{-value}$...
= .058), thus H₄ₐ is supported. Conversely, in the presence of a service guarantee, customer satisfaction with a touch (vs. tech) service failure was higher (M_touch = 3.87, M_Tech = 3.12; F(1, 109) = 4.342, p-value = .040), thus H₄₈ is supported. The results are plotted in Figure 3.5.

Figure 3.5 – Means Plot of Customer Satisfaction under Exchange Customer-Company Relationship Norms (Study 3)

* Star symbol indicates a significant difference between the two types of service encounters.

3.5.3 Discussion

Employing the most recent smart interactive service (Type 4 service encounter) which includes both touch and tech service components but on different levels, I examined the moderating effect of a service guarantee on the interaction effect between service encounter type (touch vs. tech) and customer-company relationship norms (communal vs. exchange) in a service failure context.
Overall, the results support the boundary condition hypotheses. While in a service success context, the exchange relationship attenuates the difference between customers’ satisfaction levels with touch vs. tech services, the communal relationship attenuates the difference between customers’ dissatisfaction levels with touch vs. tech services in a service failure context. Furthermore, the communal relationship’s attenuation effect is not affected by a service guarantee, which verifies the proposed nonconformity between the goodwill-based communal relationship and the compensation-based service guarantee. On the other hand, customers’ responses to touch vs. tech services under exchange relationship norms are flipped by the presence of a service guarantee. When the threshold of service success is not achieved, customers are more dissatisfied with touch (vs. tech) services due to the proposed incompatible relationship between touch service scripts and exchange relationship norms. However, the presence of a service guarantee significantly boosts customers’ tolerance of failed touch services under incompatible exchange relationship norms and decreases satisfaction with failed touch (vs. tech) services. Compared with tech services, touch services benefit more from service guarantees under exchange relationship norms because an explicit promise of service satisfaction provides the social rapport implicit in touch service scripts that is missing from exchange relationship norms. In other words, a service guarantee fills the gap between service scripts and relationship norms and increases customers’ tolerance of service failures.

An interesting finding from this study relates to customers’ perceptions of Type 4 service on the touch-tech scale. In the current study, although customers could recognize the different
levels of touch vs. tech components in high touch-high tech service encounters, the perceived difference was attenuated: the $p$-value of mean comparison $t$-test is only .043, very close to the .050 significance threshold. This result is consistent with the manipulation check of touch vs. tech in Study 2: Type 4 is between Type 1 touch and Type 2 tech on the touch-tech service scale. However, after adjusting the level of each service component, a Type 4 service encounter could demonstrate distinctive features of either touch or tech. Service companies may take advantage of this unique aspect of Type 4 service and adjust their service delivery processes to provide the optimal level of service to their customers under different customer-company relationship norms and in different service contexts (e.g., service success vs. service failure).
CHAPTER 4 – GENERAL DISCUSSION

As new technologies are developed at an ever increasing rate, the service delivery process is continuously transformed. The infusion of technology into service is having increasing impacts on service management and consumer behaviors, as evidenced by both scholarly research and industry practices. To capture these important changes in service encounter management, I proposed a conceptual framework and completed three empirical studies to lay the groundwork for future systematic examinations of service encounters based on various levels of human factors (touch) and technology infusion (tech). In this dissertation, I explored an area that has not been well delineated nor systematically discussed in the literature: customers’ responses to touch vs. tech service modes across different service encounter types and in various service contexts. I discuss the theoretical and managerial contributions of this research in the sections that follow.

4.1 Theoretical Implications

In the extant service encounter typology literature, service encounter matrices are based either on the extent of customer participation and technology involvement (Bolton & Saxena-Iyer, 2009) or the activity levels of service providers and customers in technology-enabled service delivery processes (Wünderlich et al., 2013). Yet, no frameworks have delineated service encounters from the customer’s perspective based on the extent to which they need to interact with direct service employees and the intensity with which they
need to use technology for service delivery. Inspired by the classic service marketing model (Parasuraman, 1996), I contribute a typology of four basic service encounter types from the customers’ perspective along the dimensions of touch (the extent to which customers interact with direct service employees to obtain service) and tech (the intensity with which customers use technology to obtain service). Specifically, this touch vs. tech service encounter matrix includes high touch-low tech (Type 1), low touch-high tech (Type 2), low touch-low tech (Type 3), and high touch-high tech (Type 4). Furthermore, I empirically tested this service encounter matrix in three studies, and results confirm that customers consistently perceive different levels of touch vs. tech components in service encounters, as proposed in the touch vs. tech matrix depicted in Figure 2.5. On the touch-tech scale, Type 1 and Type 2 encounters are polarized at each end, and Type 3 and Type 4 are in the middle due to their equal levels of touch vs. tech components (i.e., both low in Type 3 and both high in Type 4). The empirical test results verify the rationality of employing this touch vs. tech matrix as a legitimate framework for future research.

The empirical studies contribute to the extant service literature by identifying the interrelationships between service encounter types (touch vs. tech) and customer-company relationship types (communal vs. exchange). Previous relationship norm literature demonstrates how communal vs. exchange relationship norms moderate consumers’ perceptions of brands (Aggarwal, 2004) and price trade-offs (Kim, 2011), information processing strategies (Aggarwal & Law, 2005), cognitive perspectives on gains and losses (Aggarwal & Zhang, 2006), and the effectiveness of corporate social responsibility (Bolton &
Mattila, 2015). For the first time, this research has revealed the moderating role of relationship norms on customers’ evaluations of touch vs. tech service encounters. Prior to the main studies, the pretests indicated correlations between service types and relationship norms, and the distinctive norms of each service type on the continuous communal-exchange scale. Results from the main studies further demonstrate that touch services conform to communal relationship norms, and that tech services conform to exchange relationship norms. This conformity between service and relationship types leads to better service evaluations by customers: touch (vs. tech) services are better received under communal relationship norms, and tech (vs. touch) services attenuate customer dissatisfaction under exchange relationship norms.

Across different service contexts, communal and exchange relationship norms might elicit varying levels of impact on customers’ evaluations based on the service outcome (e.g., service success or service failure). Specifically, in service success contexts, when customers’ service requests are fulfilled without any service errors (i.e., in Study 1 check-in was successful and in Study 2 a peanut-free salad was served), exchange relationship norms attenuate the differences between customers’ evaluations of touch vs. tech services; on the other hand, in service failure contexts, communal relationship norms attenuate the differences between customers’ dissatisfaction with touch vs. tech services. According to Aggarwal (2004), a brand is positively evaluated if it conforms to the governing relationship norms, and negatively evaluated if it violates them. The current research demonstrates a similar pattern between service type and relationship norms with a condition of service outcome. Therefore,
the advantage of the conformity between touch services and communal relationship norms becomes significant when service outcomes are positive, and the conformity between tech services and exchange relationship norms creates significant advantages when service outcomes are negative.

Furthermore, results of this study confirm that perceptions of warmth determine customer satisfaction levels in communal customer-company relationships. Results of previous research suggest that customers emphasize warmth in communal relationships (Bolton & Mattila, 2015; Scott et al., 2013). The current research further demonstrates that interpersonal touch services (vs. impersonal tech services) better satisfy customers’ desire for warmth in communal relationships, which in turn leads to higher levels of customer satisfaction. From the perspective of the service process, warmth is an important affective aspect that should be emphasized by service employees when interacting with customers. Compared with a tech service, an interpersonal touch service has the advantage of significantly enhancing customers’ perceptions of warmth, thereby increasing customer service satisfaction levels in communal customer-company relationships.

Although conformity between service type and relationship norms could help increase customer service satisfaction in service success contexts, the advantage of conformity between tech services and exchange norms might significantly attenuate dissatisfaction in a service failure context when a third factor is involved—namely, a service guarantee. Hence, another contribution of this research relates to the moderating effect of a service guarantee on customers’ responses to touch vs. tech service failures under exchange relationship norms. A
service guarantee has a positive impact on customers (Hogreve & Gremler, 2009) and enhances their service evaluations (McCollough & Gremler, 2004). The current research further demonstrates the extent to which a service guarantee can enhance customers’ evaluations of different types of services across various customer-company relationships. In general, a service guarantee can decrease customers’ dissatisfaction with service failures as it can reduce their perceptions of both financial and psychological risk (Hogreve & Gremler, 2009). Yet, the strength of the positive effect varies depending on the customer-company relationship and/or service type. A communal relationship is based on friendship (Wan et al., 2011). In the communal customer-company relationship, customers perceive and treat the service company as a friend. Therefore, a communal relationship can mitigate customers’ negative reactions to service failures (Goodwin, 1996; Tax et al., 1998) regardless of the service encounter type since customers forgive the service company as they would a friend. A contract-like service guarantee does not enhance a friendship very much. Therefore, regardless of the absence or presence of a service guarantee, customers’ responses to either touch or tech service failures do not vary much when they have a friendly communal relationship with the service company, as proposed in H3 and confirmed by the supporting empirical results in Study 3. On the other hand, a service guarantee has a significant impact on customers’ responses to touch vs. tech services under exchange norms. The two key benefits of a service guarantee are an assurance message to reduce customers’ psychological risk, and compensation to reduce customers’ financial risk (Hogreve & Gremler, 2009). The assurance message sent by a service guarantee helps more in touch (vs. tech) service contexts,
since customers need explicit assurance to reduce their psychological risk, and the compensation promised enhances customer satisfaction in exchange relationships, since they expect comparable benefits in return for their contributions (Aggarwal, 2004; Aggarwal & Zhang, 2006; Scott et al., 2013) and the guarantee reduces their financial risk. Overall, a service guarantee helps to enhance customers’ evaluations more for touch service failures than for tech service failures under exchange relationship norms with a service company.

**4.2 Managerial Implications**

Due to market segment differences (e.g., luxury hotel vs. budget motel; fine-dining vs. fast-food restaurant) or brand positioning, service companies tend to place different emphases on communal vs. exchange norms in the relationships with their customers (Aggarwal, 2004; Bolton & Mattila, 2015). Some companies emphasize communal norms (e.g., “We will take good care of you!”), while others emphasize exchange norms (e.g., “Best value on the market!”). Based on the current research, I highlight practical implications and offer guidelines for balancing companies’ positioning strategies and service management practices in order to provide the optimal level of service.

Service encounter management is a critical component of service strategy (Goldstein, 2003). This study demonstrates that customer satisfaction is better achieved when the service encounter type is aligned with governing customer-company relationship norms. For service companies emphasizing communal relationships, a touch service delivered by service
employees would be effective and well-received by customers. Interpersonal touch (vs. impersonal technology) services would delight customers more, because they provide opportunities for service employees to show they care, build a sense of rapport, and create feelings of warmth by delivering personalized service that customers expect from a communal customer-company relationship. In contrast, an impersonal technological machine can hardly create feelings of warmth. Many luxury hotels take a communal approach with their guests (e.g., Four Seasons Luxury Hotels & Resorts: “In all our interactions with our guests, customers, business associates and colleagues, we seek to deal with others as we would have them deal with us” www.fourseasons.com/about_four_seasons/service-culture/). Prior research has indicated that luxury hotels usually have high employee-to-guest ratios (Chon & Yu, 2012). For example, some luxury hotels in Asia have employee-to-guest ratios as high as 1:1 or even higher; the higher the ratio, the better the customer evaluations and satisfaction levels (Chon & Yu, 2012). On the other hand, if a service company chooses to build exchange customer-company relationships, technology-facilitated (vs. interpersonal touch) service is a more efficient approach. Especially when service goes wrong, the presence of service employees might make customers feel even more dissatisfied, since people usually attribute service failures to employees’ incompetence. In turn, the dissatisfaction with service employees would further jeopardize customers’ evaluations of and relationships with a service company. However, if customers independently use technology to obtain service and a service failure occurs, they might partially blame themselves. Therefore, service companies that take an exchange approach should emphasize and invest more in implementing and
updating service delivery technology and introducing self-service technology machines and applications into service encounters and service delivery processes.

Currently, Type 4 high touch-high tech smart interactive service is an emerging service encounter mode that is becoming increasingly popular in the service industry and among customers. The results of this research indicate that Type 4 service encounters can demonstrate distinctive features of both touch and tech service. Based on their service strategies or marketing positioning, service companies may take advantage of this unique aspect of Type 4 service and adjust their service processes with different levels of touch vs. tech components to fit their customer-company relationships (communal vs. exchange). In particular, when service failures happen, to provide an optimal level of service, service companies could switch their service encounter mode to include more or less touch or tech, depending on the situation. Nowadays, recent developments in mobile technology and applications make it possible to customize the service encounter mode in real time. For example, Marriott has launched a meeting services app (Hospitalitynet) that enables hotel staff and event planners to select different functions to either directly communicate with each other (touch) or make real-time requests though the app (tech).

Moreover, this research shows that a service guarantee has quite a limited impact in service contexts characterized by communal customer-company relationships. Consequently, service companies that promote communal relationship norms with their customers (e.g., a luxury hotel company such as Four Seasons) might not need to offer such guarantees. However, it is important for companies that emphasize exchange norms (e.g., Days Inn) to
offer service guarantees in order to retain customers when service failures happen.

4.3 Limitations and Future Research

This research lays the foundation for a systematic investigation of different service encounter management practices based on various levels of human factors and technology infusion. In all three studies comprising this initial examination of customers’ responses to different service types in various contexts, I tested only one dependent variable (i.e., service satisfaction). Thus, in the future, researchers should expand the study from attitudes to behaviors and examine whether consumers’ behavioral responses are consistent with the current attitudinal results. For example, repatronage intention and loyalty level are potential behavioral variables that would be worth exploring in future research. In the service failure context, behaviors such as customer complaints, negative word-of-mouth, and service/company switching are frequently investigated in service management and consumer behavior research.

In the service success context, no significant difference between touch and tech was found under exchange relationship norms. One possible reason is that the competence advantage of technology was not clear in the scenario, which led to the insignificant results. This limitation in the current study may be improved in future research by employing settings that require a high level of competence for service delivery. In this dissertation, I created scenarios for two major hospitality service settings in the first two main studies of the service
success context: checking in to a hotel (Study 1) and ordering at a restaurant (Study 2). Yet these two types of service delivery usually do not require very specialized skills. Therefore, in the future, researchers could create scenarios depicting more specialized professional services, such as professional event planning and management, or a medical tourism consulting service.

Trust and control are the two main drivers of customer satisfaction and behavioral intentions across different types of service encounters (e.g., touch and tech). In previous consumer research, scholars identified the role of trust and control in a variety of service situations, both interpersonal and technology-facilitated (e.g., Aurier & N’Goala, 2010; Collier & Sherrell, 2010; Grewal et al., 2007; Hui & Bateson, 1991; Palmatier et al., 2006; Rose et al., 2012; Urban, Amyx, & Lorenzon, 2009). Wünderlich et al.’s (2013) grounded theory research on technology-mediated service encounters raises propositions about how customers’ perceptions of control, feelings of trust toward service counterparts, and the control-trust nexus might influence their attitudinal and behavioral responses to smart interactive (i.e., high touch-high tech) services. Yet, researchers have not yet integrated the two closely-related mechanisms (Wünderlich et al., 2013) and empirically tested their effects across various types of service encounters. Therefore, in the future, researchers might want to investigate the roles of trust and control in the interrelationship between service encounter type and customer-company relationship, and how they affect customers’ attitudinal and behavioral responses to different types of touch vs. tech service encounters.

Wan et al. (2011) suggested that self-construal or cultural differences increase customers’
sensitivity to the norms governing communal relationships and thus affect their responses to services in which relationship norms come into play. Therefore, in the future, researchers might expand the current research to a cross-cultural context to investigate the possible impact or moderating effect of culture on the interaction between service encounter type and relationship norms.
REFERENCES


APPENDIX

Appendix A – Manipulations and Scenarios

I. Study 1

Customer-Company Relations

• Communal Relation

Imagine that you planned a weekend getaway to a nearby city and booked a hotel room. You believe that the primary goal of hotel companies should be to look out for the welfare of their customers. You expect hotels to take a personal interest in you and to provide a memorable experience. Upon arriving at the hotel, you saw a banner displayed at the hotel lobby as: We will take good care of you.

• Exchange Relation

Imagine that you planned a weekend getaway to a nearby city and booked a hotel room. You believe that the primary goal of hotel companies should be to provide good value for money to their customers. You expect hotels to be efficient and offer you deals that are of great value. Upon arriving at the hotel, you saw a banner displayed at the hotel lobby as: Best value on the market.
Hotel Service Types

• Touch Service

You arrive at the hotel and proceed to the front-desk to check-in. You hand over your credit card, and the front-office agent immediately locates your reservation. She then asks you with a smile about your room preferences, including “Do you prefer a room close to or far away from the elevator?”, “Would you prefer the New York Times or USA Today to be delivered to your room tomorrow morning?”, “Would you like extra towels?”. Once the check-in procedures are completed, the front-office agent says “Thank you” and wishes you a nice stay while giving you your credit card back along with a room key. You head off to the elevator to get to your room.
• **Tech Service**

You arrive at the hotel and proceed to the self-service kiosk to check-in. You swipe your credit card on the machine, and the machine immediately locates your reservation. Next, the screen shows a list of room preference options for you to choose, including “Do you prefer a room close to or far away from the elevator?”, “Would you prefer the New York Times or USA Today to be delivered to your room tomorrow morning?”, “Would you like extra towels?”.

Once the check-in procedures are completed, the screen shows “You have successfully checked-in.” and “Thank you!”. You get a room key from the machine, and then head off to the elevator to get to your room.
II. Study 2

**Customer-Company Relations**

- **Communal Relation**

Imagine that you are having lunch in a casual dining restaurant. You believe that the primary goal of service providers should be to look out for the welfare of their customers. You expect restaurants to take a personal interest in you and to provide a memorable experience. Upon arriving at the restaurant, you see the following poster by the entrance: We will take good care of you.

- **Exchange Relation**

Imagine that you are having lunch in a casual dining restaurant. You believe that the primary goal of service providers should be to provide good value for money to their customers. You expect restaurants to be efficient and offer you deals that are of great value. Upon arriving at the restaurant, you see the following poster by the entrance: Best value in town.
Restaurant Service Types

- **Type 1 High Touch-Low Tech Service**

You are seated at the table and a server comes to take your order. You are seriously allergic to peanuts. You ask the server to make sure there are no traces of peanut in the Thai salad that you want to order.

The server goes to the kitchen to check with the chef about your peanut-free salad, and comes back to confirm that the chef can prepare you a peanut-free salad.

However, after couple of minutes, the server comes back to apologize and tells you that the restaurant has run out of Thai salad but the chef can prepare you a peanut-free Caesar salad instead. You accept to replace your favorite Thai salad with a Caesar salad.

After a while, the server brings you your peanut-free Caesar salad.

- **Type 2 Low Touch-High Tech Service**

You arrive at the restaurant and use the self-service kiosk to order your lunch. You are seriously allergic to peanuts. You use the special options function to make sure there are no traces of peanut in the Thai salad that you want to order.

It takes the machine about minutes to respond and to confirm your peanut-free salad.

However, after another couple of minutes, the machine alerts you that the restaurant has run out of Thai salad and provides an option of a peanut-free Caesar salad. You accept to replace your favorite Thai salad and order a Caesar salad.

After a while, you go to the pick-up counter to get your peanut-free Caesar salad.
• **Type 3 Low Touch-Low Tech Service (control condition)**

You arrive at the restaurant and proceed to the self-service buffet to get your salad. You are seriously allergic to peanuts, and therefore, you need to make sure that there are no traces of peanut in your food.

After looking around at the salad choices for quite a while, you realize that they have run out of your favorite peanut-free Thai salad.

You then choose a peanut-free Caesar salad instead of the Thai salad.

You proceed to a nearby table to sit down and have your lunch.

• **Type 4 High Touch-High Tech Service**

You arrive at the restaurant and use the tablet on the table to order your lunch. You are seriously allergic to peanuts. To make sure there are no traces of peanut in the Thai salad that you want to order, you use the app to alert a server for assistance.

A server comes to your table and sends your special request to the chef through the app. It takes about minutes for the app to respond and to confirm your peanut-free salad.

However, after couple of minutes, the server comes to apologize and tells you that the restaurant has run out of Thai salad but the chef can prepare you a peanut-free Caesar salad instead. You accept to replace your favorite Thai salad with a Caesar salad.

After a while, the server brings you your peanut-free Caesar salad.
III. Study 3

Customer-Company Relations

• Communal Relation

Imagine that you hire a catering company for a party that you will host. You believe that the primary goal of service providers should be to look out for the welfare of their customers. You expect catering companies to take a personal interest in you and to provide a memorable experience. You pay a visit to the catering company. Upon arriving, you see the following poster in the lobby: We will take good care of you.

• Exchange Relation

Imagine that you hire a catering company for a party that you will host. There will be about 100 guests at the party. You believe that the primary goal of service providers should be to provide good value for money to their customers. You expect catering companies to be efficient and offer you deals that are of great value. You pay a visit to the catering company. Upon arriving, you see the following poster in the lobby: Best value on the market.
Catering Service Types

- **High Touch-High Tech Service with More Touch Components**

During your visit at the catering company, the event planner, Sam, assists you to use an app on a tablet to plan your entire party with your customized preferences. Sam is very helpful and provides effective solutions to your needs and requests.

As some of your guests are allergic to peanuts, you ask the event planner to make sure there are no traces of peanut in any of the food items that you selected. Sam picks up the app and communicates with the company’s food supply department about your special request. It takes about ten minutes for him to confirm your peanut-free request.

However, after another ten minutes, the app sends an alert about your special request. Sam apologizes and tells you that some of the food items you selected are not 100% peanut-free but they can prepare other similar peanut-free options.

Sam helps you select several peanut-free options to ensure that there are no traces of peanut in any of the dishes.

Once the selection of all party items is completed, you review the Order and realize that you are overcharged by almost 30%.
• **High Touch-High Tech Service with More Tech Components**

During your visit at the catering company, you use an app on a tablet to plan your entire party with your customized preferences. The app is very comprehensive and responsive, and provides effective solutions to your needs and requests.

As some of your guests are allergic to peanuts, you use the special requests function to make sure there are no traces of peanut in any of the food items that you selected. It takes about ten minutes to get a confirmation for your peanut-free request.

However, after another ten minutes, there is an alert about your special request. A message from the company’s food supply department informs you that some of the food items you selected are not 100% peanut-free but the company can prepare other similar peanut-free options.

Via the app’s personal assistance function, the company’s food supply staff helps you select several peanut-free options to ensure that there are no traces of peanut in any of the dishes.

Once the selection of all party items is completed, you review the Order and realize that you are overcharged by almost 30%.
**Service Guarantee**

You remember you saw the following Service Guarantee Statement on the poster at the lobby:

“We will work tirelessly to make sure that your event is planned and executed in the most professional way possible. If you are not 100% satisfied, let us know and we will do whatever we can to make it right.”
Appendix B – Survey Questions

I. Pretests

➢ Net Communality Score in Pretest 2 (adapted from Aggarwal, 2004)

• You have warm feelings from the service experience.

• The hotel helps in times of need.

• You’d miss this hotel when leaving.

• You are treated specially.

• You feel cared.

• You feel welcomed.

• You care for this hotel.

• You consider your service experience good value for money. (reverse scored)

• You think that this hotel provides service to get business. (reverse scored)

• You get your money’s worth from your service experience. (reverse scored)
II. Main Studies

➢ Manipulation Check


We are interested in your views about how hotels/restaurants/catering companies should act (i.e., not how they actually act, but how they should). In your opinion, they should focus more on...

• 1=Creating warm feelings in customers … 7=Providing service in order to get business
• 1=Displaying caring toward customers … 7=Providing good value for the money
• 1=Treating customers like they are special … 7=Giving customers their money's worth

If you were to imagine that a hotel/restaurant/catering company is like another person, then a hotel/restaurant/catering company is more like...

• 1=A friend … 7=A merchant
• 1=A family member … 7=A business person

2. Touch vs. Tech Service Type

How would you rate the service described in the scenario?

• 1=Touch Service … 7=Tech Service
Dependent Variable


   • What is your overall evaluation of this service experience?
     Poor 1, 2, 3, 4, 5, 6, 7 Excellent
   
   • How satisfied would you feel with the service experience?
     Very dissatisfied 1, 2, 3, 4, 5, 6, 7 Very satisfied
   
   • How much did the service experience differ from what your expectations would have been?
     Worse than expected -3, -2, -1, 0, 1, 2, 3 Better than expected

Mediator (Study 2; Bolton & Mattila, 2015)

1. Warmth – How would you rate the hotel/restaurant/catering company on the following attributes …

   • Caring
   
   • Helpful

2. Competence – How would you rate the hotel/restaurant/catering company on the following attributes …

   • Capable
   
   • Competent
Demographic Information

1. Your Gender
   - Male
   - Female

2. Your Age (in numbers, e.g., 24 for twenty-four year old)

3. Your Education Level
   - High school
   - Some college education
   - College degree
   - Graduate school
   - Other

4. Your Ethnicity
   - Caucasian - Non-Hispanic
   - African American
   - Hispanic
   - Asian
   - Other

5. Your Annual Household Income
   - Less than $10K
   - $10K to $20K
   - $21K to $35K
   - $36K to $50K
   - $51K to $75K
   - $76K to $100K
   - More than $100K
Realism Check

1. How realistic was the restaurant scenario in your opinion?
   - Highly Unrealistic 1, 2, 3, 4, 5, 6, 7 Highly Realistic

2. How easy was it for you to understand the service experience described in this scenario?
   - Very Difficult 1, 2, 3, 4, 5, 6, 7 Very Easy
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EDUCATION
2016  The Pennsylvania State University, School of Hospitality Management
      PhD in Hospitality Management
2009  Cornell University, School of Hotel Administration
      Master of Management in Hospitality
2000  Dalian University of Foreign Languages, School of English Studies
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AWARDS
2015 – 2016  Grimes-Nicholson Technology Award
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