

Consumer reliance on intangible versus tangible attributes in service evaluation: the role of construal level

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Abstract The services marketing literature has traditionally characterized intangibility as the most critical distinction between services and goods, but in practice service production and consumption often involve both intangible and tangible elements. While prior research has examined and debated service intangibility from the firm's perspective, what is missing is an understanding of how consumers weigh the relative importance of intangible versus tangible attributes in their service evaluation. Drawing on construal level theory, the authors propose that consumers with a high (vs. low) construal level rely more on intangible (vs. tangible) attributes in service evaluation. Furthermore, the effect of construal level on service evaluation is mediated by imagery vividness, with service type (e.g., experience vs. credence services) serving as a boundary condition. The authors conduct two field studies and two lab experiments and find that under a high construal level, consumers rely more on intangible attributes in their service evaluation and choice formation; under a low construal level, consumers rely more on tangible attributes in their service evaluation and choice. The findings not only offer new insights to help reconcile the disparate perspectives on service intangibility in the literature but also have practical implications on service firms' positioning strategies that vary across

time (e.g., advance selling vs. on-site selling) and space (e.g., near vs. distant outlet), as well as which attributes to emphasize in their marketing communications.

Keywords Service intangibility · Construal level · Intangibilization strategy · Imagery vividness · Service type

The services marketing literature has traditionally characterized intangibility as the most critical distinction between services and goods (Bateson 1979; Edvardsson, Gustafsson, and Roos 2005; Zeithaml, Parasuraman, and Berry 1985). Essentially, intangibility refers to the lack of palpable or tactile property making it difficult to assess service quality (Bateson 1979; Bebeko 2000; Bolton and Alba 2006; Laroche, Bergeron, and Goutaland 2001; Mittal 1999). Notwithstanding this characterization, in practice service production and consumption often involve both intangible and tangible elements (Lovelock and Gummesson 2004). Examples of intangible service attributes include service responsiveness and reliability, while tangible service attributes include the servicescape, décor, and furnishings.

Interestingly, the existing literature is equivocal on which attributes service firms should emphasize, with some researchers favoring the intangible attributes (e.g., Fang, Palmatier, and Steenkamp 2008; Vargo and Lusch 2004) and others arguing for the tangible attributes (e.g., Hill et al. 2004; Shostack 1977; Stafford 1996). What is missing, however, is an understanding of the consumer's perspective on service intangibility (vs. tangibility), which would help shape the firm's strategy. That is, insights from consumer psychology on service intangibility can contribute to the development of the service firm's marketing strategy (Hamilton 2016).

Accordingly, the present research examines how consumers weigh the relative importance of intangible versus tangible attributes during service evaluation. To this end, we

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draw on construal level theory (CLT; Trope and Liberman 2003, 2010) to understand when and why intangible versus tangible attributes would be more influential in service evaluation. CLT states that when individuals make decisions under a high construal level, they are more likely to invoke central and abstract features of the object, but when they make decisions under a low construal level, they are more likely to rely on incidental and concrete features of the object (Fujita et al. 2006; Liberman and Trope 1998). In this vein, we posit that consumers' reliance on intangible versus tangible attributes would be a function of their salient construal level.

Our findings are expected to make important contributions to both the services marketing and CLT literatures. First, insights obtained from understanding how construal level influences consumers' reliance on intangible versus tangible attributes in service evaluation can reconcile the divergent perspectives on the relative efficacies of service intangibility vs. service tangibility. To enhance robustness of the findings, we operationalize construal level in multiple ways: by manipulating the temporal and spatial dimensions of decision construal, as well as by priming consumers' information processing style using the why versus how paradigm (Freitas, Gollwitzer, and Trope 2004). Second, we examine the mechanism underlying the effects of construal level in terms of imagery vividness, complemented by the boundary condition of service type.

Beyond the theoretical contributions, these findings also have meaningful and practical implications. For example, consumers' differential reliance on intangible versus tangible attributes helps inform service firms' positioning strategies that vary across time (e.g., advance selling vs. on-site selling) and space (e.g., physical vs. catalog retailing). In addition, understanding consumers' construal level also influences the firm's communication of service benefits, specifically whether to emphasize the intangible or tangible aspects of the service.

The rest of this article is organized as follows. We first review the literature and develop a conceptual framework along with a set of testable hypotheses. Following that, we conduct two field studies and two lab experiments to test the framework. We show that subtle experimental manipulations can have an enduring impact on actual consumer evaluations. We conclude with the theoretical contributions, managerial implications, limitations, and future research directions.

Theoretical framework and hypotheses development

Intangible and tangible attributes of services

In their survey of the services marketing literature from its infancy to the early 1980s, Zeithaml et al. (1985) conclude that intangibility is one of four characteristics distinguishing services from goods (the others being heterogeneity, inseparability, and perishability, which collectively form the IHIP

paradigm). Twenty years later, the debate on the services versus goods divide based on the IHIP paradigm persists (Edvardsson et al. 2005; Lovelock and Gummesson 2004; Vargo and Lusch 2004), and recent research continues to perpetuate the distinction of services from goods based on intangibility (Bolton and Alba 2006; Mayer, Ehrhart, and Schneider 2009; Mazaheri et al. 2014).

Essentially, intangibility denotes that “services are activities and not physical objects... Often services cannot be seen, felt, tasted, or touched before they are purchased” (Edvardsson et al. 2005, pp. 113–114). Prior research shows that, despite these amorphous and abstract qualities, intangibility is multidimensional and measurable (Laroche et al. 2001, 2005). In addition, the well-known SERVQUAL scale encompasses five dimensions, four of which measure the intangible attributes of responsiveness, reliability, assurance, and empathy (Parasuraman, Zeithaml, and Berry 1988). More broadly, intangible attributes include those organizational processes and human deeds that contribute toward the initiation, progression, and completion of a service encounter (Zolfagharian and Paswan 2008). An important implication is that intangible attributes allow the service firm to better differentiate its offerings and are more difficult to copy (Fang et al. 2008), creating a source of competitive advantage in the marketplace.

Yet, in practice we observe that service production and consumption often also involve tangible or physical elements (Bitner 1992; Lovelock and Gummesson 2004). Tangible attributes include the environment in which the service is delivered and where the firm and the customer interact, as well as other commodities that facilitate performance or communication of the service (Zeithaml and Bitner 1996; Zeithaml, Berry, and Parasuraman 1983). For instance, a patient would evaluate a medical service not only based on the doctor's skill and bedside manner (i.e., intangible attributes) but would also be influenced by the medical equipment and furnishings in the clinic (i.e., tangible attributes). Thus, tangible attributes can be used to communicate service quality and are recognized as another component of the SERVQUAL scale (Parasuraman et al. 1988) as well as a key dimension of the servicescape construct (Bitner 1992). Prior research suggests that servicescape and tangible attributes can influence consumer satisfaction and lead to approach or avoidance behavior (Bitner 1992; Mehrabian and Russell 1974; Turley and Milliman 2000). Wakefield and Blodgett (1999) show that tangible attributes (e.g., building design and décor, equipment, and ambience) can generate excitement for leisure services, leading to higher repatronage intentions and willingness to recommend. Furthermore, services with greater tangible (vs. intangible) attributes can reduce perceived risk and promote impulsive buying (Sharma, Sivakumaran, and Marshall 2014).

Interestingly, the literature is equivocal on the relative importance of service intangibility versus service tangibility for

the firm. For instance, Vargo and Lusch (2004, p. 327) argue that, “Unless tangibility has a marketing advantage, it should be reduced or eliminated if possible.” In addition, intangibility as an innate characteristic of services could make the firm’s overall offering more distinctive and difficult to imitate (Fang et al. 2008). Yet other scholars advocate the opposite. In her classic article, Shostack (1977) exhorts marketers of intangible offerings to provide “tangible evidence.” Her reasoning is that as services are already abstract, “Service marketers should be focused on enhancing and differentiating ‘realities’ through manipulation of *tangible* clues” (Shostack 1977, p. 78, emphasis in original). Stafford (1996) finds that emphasizing the tangible service attributes in advertising has favorable effects on consumer attitudes toward the advertisement and patronage intentions. Similarly, Hill et al. (2004) show that documentation strategies that increase service tangibility can increase perceived advertising persuasiveness, perceived service quality, and the likelihood of using the service.

Other researchers take the middle path and suggest that intangibility is not a binary construct; rather it is a matter of degree (Murray and Schlacter 1990). That is, a wide range of services can be arrayed in different positions along a spectrum anchored by “tangible dominant” and “intangible dominant” attributes (Shostack 1977). Given these disparate views, some scholars question the received wisdom of continuing to characterize services in terms of intangibility (Lovelock and Gummesson 2004; Vargo and Lusch 2004).

Taken together, our review of the literature reveals that existing research considers the implications of service (in)tangibility only from the firm’s perspective. To our knowledge, prior research has not examined the issue from the consumer’s perspective. Accordingly, the present research examines consumers’ relative weighing of intangible and tangible attributes in service evaluation. We invoke construal level theory (Trope and Liberman 2003, 2010) to understand how consumers trade off between intangible and tangible attributes in their service evaluation.

Construal level theory and the relative weighing of intangible versus tangible attributes

Construal level theory (CLT) is often used to explain the impact of psychological distance on the extent to which people’s thinking about stimuli (e.g., objects and events) is abstract or concrete (Trope and Liberman 2010). That is, depending on the psychological distance, people process and form different mental representations of the same stimulus. An event is psychologically distant when it is removed from a person’s direct experience, such as when it takes place in the future (temporal distance; Liberman, Sagristano, and Trope 2002), occurs in more remote locations (spatial distance; Tversky 2003), happens to strangers (social distance; Nisbett et al. 1973), or the

probability of happening is low (hypothetical distance; Trope and Liberman 2010).

As psychological distance increases, people represent stimuli at a high level using decontextualized, simple, and stable features that convey their essence. In contrast, as psychological distance decreases, people represent the same stimuli at a low level using their contextualized, specific, and incidental features that convey the details of the stimuli (Khan, Zhu, and Kalra 2011). That is, psychologically near stimuli contain rich, contextual, and low-level details, while psychologically distant stimuli tend to elicit high-level abstractions (Khan et al. 2011; Trope and Liberman 2010). For example, Roehm and Roehm (2011) find that a concrete attribute such as the face value of an incentive would be more influential when the redemption time frame is short. In contrast, when incentives involve a long redemption lag, abstract aspects (e.g., the incentive’s goal congruity or fit with personal values) will have more influence on subsequent choices.

Building on the distinction between high and low construal levels, we propose that consumers’ weighing of intangible versus tangible attributes in service evaluation depends on which construal level is made salient. Intangible service attributes include responsiveness, assurance, credibility, and empathy, which cannot be seen, felt, tasted, or touched in the same manner in which goods can be sensed (Zeithaml et al. 1985). These qualities make the intangible attributes more difficult for consumers to grasp and elucidate in service evaluation. Prior research suggests that increasing psychological distance can mitigate the feeling of difficulty that is elicited by task complexity (Thomas and Tsai 2012). This is because, relative to a low construal level, a high construal level can promote individuals’ abstraction ability, thus reducing the perceived choice difficulty in complex tasks (Dhar and Kim 2007; Trope, Liberman, and Wakslak 2007). Accordingly, consumers with a high construal level can better process the intangible attributes of a service and would weigh them more in their service evaluation.

Furthermore, a high construal level is often associated with primary and goal-directed value, whereas a low construal level emphasizes secondary and goal-irrelevant value (Trope et al. 2007). As a consequence, primary attributes that reflect the central goal value would receive greater weight in an evaluation under a high construal level, compared to secondary attributes that may be contextual and irrelevant to the goal value (Martin, Gnoth, and Strong 2009; Trope and Liberman 2000). Recent research suggests that increasing psychological distance can threaten trust in the consumer–service provider relationship (Darke et al. 2016). As the intangible attributes tend to be more closely related to the core essence of a service, they would resonate more with consumers having a high construal level to reduce this distrust rather than the contextual tangible attributes that support or supplement the central goal value. Conversely, tangible attributes such as the servicescape, facilities, and equipment are contextual, secondary and

subordinate details that may be more influential in an evaluation under a low construal level.

Accordingly, we propose that under a high construal level, the intangible attributes of a service will have greater weight in consumers' service evaluation, whereas under a low construal level, the tangible attributes will be more salient in consumers' service evaluation. Consider, for example, a consumer who is evaluating a hotel online ahead of a trip. We propose that a consumer with a high construal level (e.g., taking the trip one year later or at a distant location) will care more about whether the hotel can provide assurance of reliable and responsive service, while a consumer with a low construal level (e.g., taking the trip the following day or at a nearby location) will emphasize the hotel's tangible attributes such as the servicescape, furnishings, and amenities. Accordingly, we hypothesize that:

H1: Consumers with a high construal level will rely more on the intangible attributes in service evaluation, while consumers with a low construal level will rely more on the tangible attributes in service evaluation.

From the service firm's perspective, an important decision pertains to the type of attribute to emphasize in their marketing communications. CLT suggests that individuals are inclined to use a concrete, low-level construal to represent near events and an abstract, high-level construal to represent distant events (Khan et al. 2011; Trope and Liberman 2010). Thus, distant events would increase the weight of central attributes relative to peripheral attributes (Trope and Liberman 2000). Consequently, we propose that consumers with a high construal level (e.g., planning to take the trip one year later) would be more likely to have an abstract mindset when approaching the service firm, being more concerned about having a memorable holiday (the core essence of the trip). This implies that the service firm (e.g., travel agency) would be better off adopting an "intangibilization strategy," which highlights the strength of its brand image and reputation of being reliable and trustworthy. That is, consumers with a high construal level would respond more favorably to an intangibilization strategy. Conversely, consumers with a low construal level (e.g., taking a spontaneous trip the following day) would be more likely to have a concrete mindset, and pay more attention to specific details and peripheral attributes. In which case, the travel agency should adopt a "tangibilization strategy" that highlights their network of airlines, hotels, and car rental companies. That is, consumers with a low construal level would respond more favorably to a tangibilization strategy. More formally, we hypothesize that:

H2: Consumers with a high construal level would respond more favorably to the intangibilization strategy of a service firm, while consumers with a low construal level would respond more favorably to the tangibilization strategy.

Mediating role of imagery vividness

To better understand the psychological mechanism underlying the main effect of construal level on consumer reliance on intangible versus tangible attributes in service evaluation, we propose the mediating role of imagery vividness. Mental imagery is a cognitive process in which sensory information is represented in working memory, and vividness relates to the quality of the imagery, reflecting its clarity, intensity, and distinctiveness (MacInnis and Price 1987). In particular, MacInnis and Price (1987) note that the evocation of imagery may be multi-sensory (e.g., involving images that incorporate smell, taste, sight, and tactile sensations) or single sensory (e.g., sight alone). We propose that consumers' general imagery vividness could be situational and influenced by contextual factors such as construal level. Under a low construal level, consumers would have a higher level of general imagery vividness compared to consumers under a high construal level. That is, an event that will occur in the near future, or at a nearby location, tends to come with rich, specific, and contextual details in the individual's mind. Such details contribute to high imagery vividness (D'Argembeau and Van der Linden 2004, 2006). In contrast, an event that will occur in the distant future, or at a faraway location, tends to lack rich details, and be more abstract and decontextualized in the individual's mind. Thus, mental representation of distal objects and events will evoke a low level of imagery vividness (Szpunar and McDermott 2008).

In turn, general imagery vividness as shaped by construal level would influence the trade-off between intangible versus tangible attributes in service evaluation. That is, under a low construal level, consumers are more likely to have a concrete mindset and focus on the subordinate features, which increase imagery vividness. As tangible attributes are easier to visualize than intangible attributes, consumers with high imagery vividness will rely more on tangible attributes in service evaluation. In contrast, under a high construal level, consumers are more likely to have an abstract mindset and focus on the superordinate features, which reduce imagery vividness and lead to greater reliance on intangible attributes in service evaluation. This is consistent with prior research showing that both imagery vividness and stimulus concreteness affect the impact of imagery in learning tasks (Swann and Miller 1982). To illustrate, consumers who are planning to have dinner for the first time at a restaurant located far away (i.e., high construal level) would have low imagery vividness; thus, intangible attributes such as restaurant reputation and service responsiveness would be more influential in their evaluation. Conversely, consumers who are having dinner at a restaurant located close by (i.e., low construal level) would have high imagery vividness; thus, tangible

attributes such as servicescape and décor would be more influential in their evaluation. More formally:

- H3: Compared with a low construal level, a high construal level will lead to reduced imagery vividness.
- H4: Imagery vividness mediates the effect of construal level on consumers' relative weighing of intangible versus tangible attributes in their service evaluation.

Moderating effect of service type

We further propose that the effect of construal level on consumers' reliance on intangible versus tangible attributes is moderated by the type of service. A well-established typology classifies services into experience and credence services (Keh and Pang 2010; Ostrom and Iacobucci 1995). Specifically, experience services (e.g., haircut and hotel stay) can be evaluated easily after purchase or consumption (Nelson 1970). Thus, the ease of evaluating experience services implies that the effects proposed in H1 will hold; that is, when evaluating experience services, consumers with a low construal level will rely more on tangible attributes while those with a high construal level will rely more on intangible attributes.

In contrast, credence services (e.g., medical treatment and legal services) often cannot be judged confidently even after purchase or consumption (Darby and Karni 1973). This could be due to consumers' intrinsic uncertainty about credence services (Sun, Keh, and Lee 2012). Similarly, Mitra, Reiss, and Capella (1999) show that consumers tend to report higher risk perceptions for credence services than for experience services. Thus, the high uncertainty and risk perceptions associated with credence services imply that consumers would form a more abstract and decontextualized perception of the services, leading to low imagery vividness (Szpunar and McDermott 2008). As a consequence, consumers would rely more on intangible attributes when evaluating credence services, regardless of their construal level. More formally:

- H5: Service type moderates the effect of construal level on consumers' relative weighing of intangible versus tangible attributes in their service evaluation. Specifically, for experience services, consumers with a low (high) construal level would rely more on tangible (intangible) attributes. However, for credence services, consumers would rely more on intangible attributes, regardless of their construal level.

Overview of experiments

We tested our hypotheses in a series of field and lab experiments. In the pilot study, we manipulated psychological

distance using temporal distance in a field setting and showed the effect of construal level on consumers' relative weighing of intangible versus tangible attributes (H1). Study 1 investigated the relative efficacies of the intangibilization strategy versus the tangibilization strategy for print advertisements as a function of consumers' salient construal level (H2). Study 2 was conducted in a field setting, in which we manipulated psychological distance using spatial distance and measured consumers' actual purchase behavior as the dependent variable. Study 3 examined the relative weighing of intangible versus tangible attributes in a service choice context using the “why” versus “how” paradigm to manipulate construal level. Importantly, we examined the underlying mediation role of imagery vividness (H3–H4) and documented service type as a boundary condition (H5) for the proposed effect.

Pilot study: main effect of temporal construal

Methods and procedure

We conducted a pilot study to investigate the importance of intangible versus tangible attributes for consumers with varying construal levels. We predicted that intangible attributes would be more important for consumers with a high construal level, whereas tangible attributes would be more important for consumers with a low construal level. This study employed a two-level (construal level: high vs. low) between-participants design. We operationalized psychological distance in terms of temporal distance.

For this field experiment, we obtained the cooperation of a café located close to a major university campus in Beijing, China. Before conducting the main study, we conducted a pretest to determine the service attributes to be used in the main questionnaire. Based on Waxman's (2006) research on coffee shops, we obtained a preliminary list of eight café attributes (i.e., aroma, music, taste of coffee and food, store layout and décor, service responsiveness, service reliability, courtesy of employees, and employee knowledge). Then we recruited 24 participants (50% male; 66.7% between 20 and 25 years old and 33.3% above 25 years old) similar in profile to participants in the main study and asked them to rate the perceived (in)tangibility of each attribute on a seven-point scale (1 = extremely tangible, 7 = extremely intangible). Results indicated that participants rated aroma ($M = 1.88$, $SD = 1.08$), music ($M = 1.88$, $SD = 1.04$), taste of coffee and food ($M = 1.79$, $SD = 1.06$), and store layout and décor ($M = 1.67$, $SD = .82$) to be more tangible compared to service responsiveness ($M = 2.67$, $SD = 1.63$), service reliability ($M = 3.58$, $SD = 1.79$), courtesy of employees ($M = 2.67$, $SD = 1.63$), and employee knowledge ($M = 3.38$, $SD = 2.00$). All the comparisons were significant ($ps < .05$). Based on this pretest, we classified aroma, music, taste of

coffee and food, and store layout and décor as tangible attributes, and service responsiveness, service reliability, courtesy of employees, and employee knowledge as intangible attributes.

We listed these eight attributes on a one-page questionnaire for the main study. Two student assistants were recruited to act as café employees who randomly approached passersby outside the café and explained that they would each get a ¥10 (US\$1.52) voucher in return for completing the one-page survey intended to help the café improve its service. We manipulated construal level subtly by printing two versions of the vouchers with different expiration dates. Half of the participants randomly received the voucher that could be used from the following month to six months later (high construal level condition), while the other half received the voucher that needed to be used by the following week (low construal level condition).

There were 80 passersby outside the café who agreed to participate in our study, and each was given a voucher. However, nine of them did not finish the survey due to a variety of reasons (e.g., in a hurry to a meeting), resulting in 71 valid responses (42.3% male; mean age = 23.1 years; monthly income: 13.8% below ¥1000, 46.2% ¥1001–¥2000, 15.4% ¥2001–¥3000, and 24.6% above ¥3000). Participants were asked to indicate the perceived importance of each attribute on a 7-point scale (1 = not important at all, 7 = extremely important). The survey ended with some demographic questions.

Results and discussion

For the four tangible café attributes, a series of one-way ANOVAs all yielded the significant main effect of construal level. Specifically, participants primed with a high construal level rated the tangible attributes to be less important than those primed with a low construal level (aroma: $M_{\text{high construal}} = 5.23$, $SD = 1.44$ vs. $M_{\text{low construal}} = 5.83$, $SD = 1.06$, $F(1, 69) = 4.10$, $p < .05$; music: $M_{\text{high construal}} = 5.17$, $SD = 1.34$ vs. $M_{\text{low construal}} = 5.78$, $SD = .93$, $F(1, 69) = 4.94$, $p < .05$; taste of coffee and food: $M_{\text{high construal}} = 5.46$, $SD = 1.36$ vs. $M_{\text{low construal}} = 6.17$, $SD = 1.13$, $F(1, 69) = 5.72$, $p < .05$; and store layout and décor: $M_{\text{high construal}} = 5.23$, $SD = 1.42$ vs. $M_{\text{low construal}} = 5.81$, $SD = .95$, $F(1, 69) = 4.08$, $p < .05$).

In contrast, a series of one-way ANOVAs on the four intangible café attributes showed that participants primed with a high construal level rated the intangible attributes to be more important than those primed with a low construal (service responsiveness: $M_{\text{high construal}} = 6.14$, $SD = .94$ vs. $M_{\text{low construal}} = 5.47$, $SD = 1.54$, $F(1, 69) = 4.86$, $p < .05$; service reliability: $M_{\text{high construal}} = 6.17$, $SD = .75$ vs. $M_{\text{low construal}} = 5.69$, $SD = 1.22$, $F(1, 69) = 3.95$, $p < .05$; courtesy of employees: $M_{\text{high construal}} = 6.14$, $SD = .77$ vs. $M_{\text{low construal}} = 5.56$, $SD = 1.28$, $F(1, 69) = 5.47$, $p < .05$; and employee knowledge: $M_{\text{high construal}} = 5.63$, $SD = 1.31$ vs. $M_{\text{low construal}} = 4.97$, $SD = 1.44$, $F(1, 69) = 4.02$, $p < .05$). These results support H1.

This pilot study in a field setting provides preliminary evidence showing that participants primed with a high construal level placed more importance on intangible attributes while those primed with a low construal level placed more importance on tangible attributes in their service evaluations. Nonetheless, the pilot study used a simple one-factor between-participants design to test the main effect, conducted in the context of a café. We are also interested in understanding consumer responses to the firm's intangibilization vs. tangibilization strategy, which affects the firm's market positioning and communications. In so doing, we seek to also reconcile the divergent views in the literature on the relative efficacies of service intangibility vs. service tangibility. To this end, we conducted Study 1.

Study 1: Marketing implications of temporal construal

The purpose of Study 1 is to examine H2, which suggests that consumers' more favorable response to the service firm's intangibilization versus tangibilization strategy is a function of their construal level. To this end, we designed print advertisements for a travel agency that reflected the intangibilization versus the tangibilization strategy, respectively. We predicted that consumers with a high construal level would respond more favorably to the advertisement using the intangibilization strategy, while consumers with a low construal level would respond more favorably to the advertisement adopting the tangibilization strategy.

Methods and procedure

Study 1 used a 2 (construal level: high vs. low) \times 2 (advertisement strategy: intangibilization vs. tangibilization) between-participants design. We used a travel agency to represent the service context. We recruited 120 university students (34.2% male, mean age = 22.3 years), who received monetary compensation for their participation. Participants were randomly assigned to one of the four conditions and were informed that they would be working on a number of unrelated tasks. Specifically, participants first read a travel agency's advertisement that adopted either the intangibilization strategy or the tangibilization strategy. The intangibilization advertisement focused on the brand image and general reputation of the travel agency, while the tangibilization advertisement emphasized the physical characteristics of the travel agency, showing a picture of the service situation and a smiling employee (Appendix 1). The manipulation of temporal construal level was adapted from Förster, Friedman, and Liberman (2004); in the scenario, participants read that they were thinking of taking a trip that would take place one year from now and

purchase the service then (high construal level) or purchasing and taking the trip the following day (low construal level).

A pretest with a separate set of participants ($N = 226$, 46.5% male, mean age = 31.8 years) showed that the two advertisements were perceived to be equally attractive ($M_{\text{intangibilization}} = 5.34$, $SD = 1.01$ vs. $M_{\text{tangibilization}} = 5.45$, $SD = .94$; $p > .30$). We also asked participants to rate the importance of the attributes described in the advertisement when evaluating the travel agency. Results showed that participants rated the attributes as equally important ($M_{\text{intangibilization}} = 5.54$, $SD = 1.24$ vs. $M_{\text{tangibilization}} = 5.59$, $SD = 1.04$; $p > .70$). The pretest indicated that the two advertisements were not significantly different from each other in terms of attractiveness and the importance of attributes contained in them.

In the main study, after reading the advertisement, participants evaluated it using three items on nine-point scales (adapted from Labroo and Kim 2009, coefficient $\alpha = .92$): (1) “Do you think this advertisement is attractive?” (1 = not attractive at all, 9 = extremely attractive), (2) “Do you like this advertisement?” (1 = extremely dislike, 9 = extremely like), and (3) “Is this advertisement appealing?” (1 = not appealing at all, 9 = extremely appealing). Participants were also asked to indicate their willingness to pay for the service and respond to some demographic questions. At the end, participants were debriefed, compensated, and dismissed.

Results and discussion

As the three items evaluating the advertisement were highly correlated, we averaged the scores on the three items to form an evaluation index. Results of the two-way ANOVA revealed a significant interaction of construal level and advertisement strategy on the evaluation index ($F(1, 116) = 33.30$, $p < .001$). As shown in Fig. 1a, high construal level participants evaluated the intangibilization advertisement more favorably than the tangibilization advertisement ($M_{\text{intangibilization}} = 5.29$, $SD = 1.41$ vs. $M_{\text{tangibilization}} = 4.20$, $SD = 1.49$; $F(1, 116) = 6.71$, $p < .05$). In contrast, low construal level participants evaluated the tangibilization advertisement more favorably than the intangibilization advertisement ($M_{\text{intangibilization}} = 3.91$, $SD = 1.42$ vs. $M_{\text{tangibilization}} = 6.11$, $SD = 1.77$; $F(1, 116) = 32.79$, $p < .001$).

In addition, we found a significant interaction between construal level and advertisement strategy on willingness to pay ($F(1, 116) = 15.49$, $p < .001$). Participants who were planning for a trip that would take place a year later (high construal level) showed willingness to pay more in response to the intangibilization advertisement than to the tangibilization advertisement ($M_{\text{intangibilization}} = ¥2638.46$, $SD = 458.76$ vs. $M_{\text{tangibilization}} = ¥2339.29$, $SD = 390.00$; $F(1, 116) = 5.34$, $p < .05$). In contrast, participants who were planning for a trip that would take place the next day (low

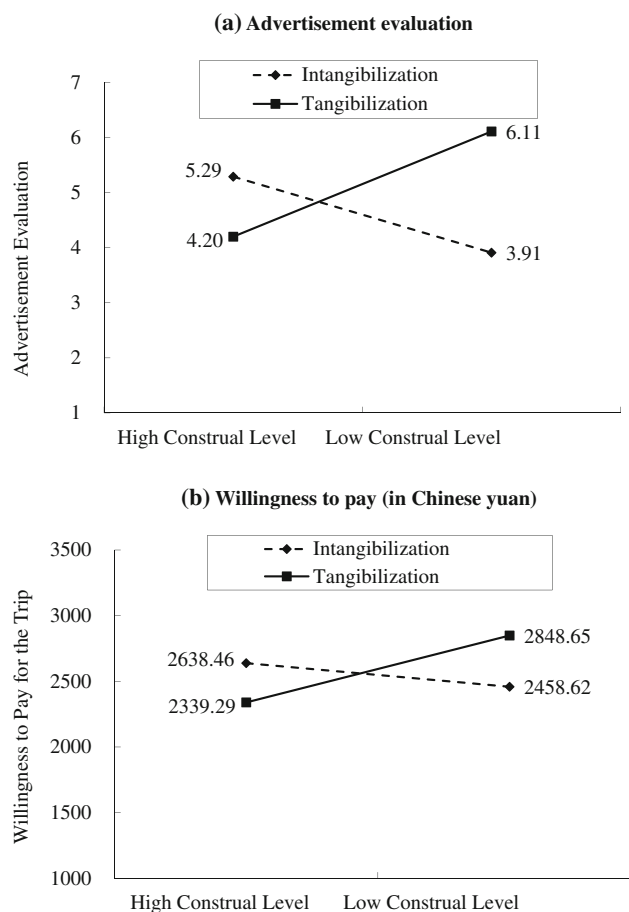


Fig. 1 Interaction of construal level and advertisement strategy (Study 1)

construal level) showed willingness to pay more in response to the tangibilization advertisement than to the intangibilization advertisement ($M_{\text{intangibilization}} = ¥2458.62$, $SD = 517.22$ vs. $M_{\text{tangibilization}} = ¥2848.65$, $SD = 509.70$; $F(1, 116) = 10.95$, $p < .01$), as shown in Fig. 1b.

Taken together, these results provide support for H2. Specifically, we find that the intangibilization strategy would be more effective for participants with a high construal level, while the tangibilization strategy would be more effective for participants with a low construal level. It is noteworthy that even though the intangibilization versus tangibilization strategy is framed from the firm’s perspective, the findings in Study 1 are consistent with those from the pilot study; consumers primed with a high construal level rely more on intangible attributes while those primed with a low construal level rely more on tangible attributes in their service evaluations. Notably, Study 1 also measured consumers’ willingness to pay, which contributes to the managerial implications of our findings.

In both the pilot study and Study 1, we operationalized psychological distance in terms of time (temporal distance). Thus, we would like to see if the results would hold for a different operationalization of psychological distance. We conducted Study 2 to address this issue.

Study 2: main effect of spatial construal

Study 2 investigates the effect of construal level on consumers' weighing of intangible versus tangible attributes in their service evaluations. This field experiment used a 2 (construal level: high vs. low) \times 2 (description appeal: intangible vs. tangible) between-participants design. In this study, we operationalized construal level using another dimension of psychological distance—spatial distance. In addition, we kept the service attributes consistent in both conditions but varied the description appeal (intangible vs. tangible).

Methods and procedure

For this field experiment, we obtained the collaboration of a popular chain of hot-pot restaurants located in Beijing, China. We first conducted a pretest to determine the restaurant attributes to be used in the main study. We recruited 113 consumers (43.4% male, mean age = 32.0 years) through an online survey website (Sojump.com) who rated the importance of 12 attributes for hot-pot restaurants on a seven-point scale (1 = not important at all, 7 = very important): dinnerware, restaurant logo, restaurant décor, staff uniform, courtesy of employees, customer word-of-mouth, design of dining area, freshness of the food, taste of the hot-pot soup, enthusiasm and responsiveness of the employees, restaurant reputation, and food display. Results indicated that design of dining area ($M = 5.70$, $SD = .89$), freshness of the food ($M = 6.41$, $SD = .93$), taste of the hot-pot soup ($M = 6.12$, $SD = .97$), and enthusiasm and responsiveness of the employees ($M = 6.02$, $SD = .95$) were rated as equally important attributes for hot-pot restaurants (all $ps > .10$). For this set of four attributes, we developed both intangible and tangible descriptions, which were used in the main study.

We operationalized psychological distance using spatial distance. That is, we chose two restaurant outlets for this study, one located close to where we sold the discounted vouchers (low construal level) and the other located 12 km away (high construal level). Based on the intangible and tangible descriptions of the set of four attributes, as well as the location of the two outlets, we created four versions of the discounted voucher: (1) voucher with intangible descriptions of the attributes redeemable only at the nearby outlet, (2) voucher with tangible descriptions of the attributes redeemable only at the nearby outlet, (3) voucher with intangible descriptions of the attributes redeemable only at the distant outlet, and (4) voucher with tangible descriptions of the attributes redeemable only at the distant outlet. The front of the voucher carried the name of the restaurant, the face value, the validity period, and the tracking number, while the reverse showed the location of the restaurant (nearby vs. distant) and either the intangible or the tangible descriptions of the four restaurant attributes (Appendix 2). We prepared equal

numbers of vouchers for each condition and shuffled them to ensure randomization before distributing to the passersby. Results of a separate pretest ($N = 83$, 55.4% male, mean age = 27.4 years) indicated that participants rated the intangible descriptions of the four attributes to be more abstract and intangible ($M = 5.17$, $SD = 1.38$) than the tangible descriptions ($M = 4.15$, $SD = 1.62$; $F(1, 81) = 9.56$, $p < .01$), validating the manipulation of the description appeals.

For the main study, we recruited a research assistant to dress up as a restaurant employee to sell the discounted cash vouchers. The research assistant randomly approached passersby close to one of the restaurant outlets and explained that the hot-pot restaurant was running a promotion, whereby consumers could purchase cash vouchers worth ¥50 (US\$7.60) for only ¥20 (US\$3.04). As we used a between-participants design, each consumer was shown only one version of the four vouchers. When promoting the discounted cash voucher, the research assistant explained where the voucher could be redeemed (nearby vs. distant outlet; manipulation of spatial distance) and drew participants' attention to the descriptions of restaurant attributes printed on the back of the vouchers (intangible vs. tangible descriptions; manipulation of (in)tangibility). The dependent variable was the percentage of purchases in each of the four voucher conditions.

In total, the research assistant approached 125 passersby, five of whom did not stop to listen to the promotion, so we had 120 passersby who participated in this experiment. The research assistant recorded each participant's purchase decision (coded as 1 if the participant purchased the cash voucher and coded as 0 if he/she did not purchase the cash voucher). Among the participants, 43.3% were male (to ensure realism in the field experiment, we recorded only participants' gender and did not ask participants to report their age and income).

Results and discussion

We performed a binary regression by regressing the purchase of cash voucher on construal level, description appeal, and their interaction. Results indicated a significant main effect of construal level (Wald $\chi^2 = 4.61$, $\beta = -2.36$, $SE = 1.10$, $p < .05$) and a significant interaction effect between construal level and description appeal (Wald $\chi^2 = 5.79$, $\beta = 3.39$, $SE = 1.41$, $p < .05$). As expected, in the low construal level condition, participants were more likely to purchase the voucher with the tangible descriptions ($M = 26.67\%$) than the voucher with the intangible descriptions ($M = 6.67\%$; $Z_{Mann_Whitney} = -2.06$, $p < .05$). Conversely, in the high construal level condition, participants were more likely to purchase the voucher with the intangible descriptions ($M = 16.67\%$) than the voucher with the tangible descriptions ($M = 3.33\%$; $Z_{Mann_Whitney} = -1.71$, $p = .088$, see Fig. 2). These results support H1.

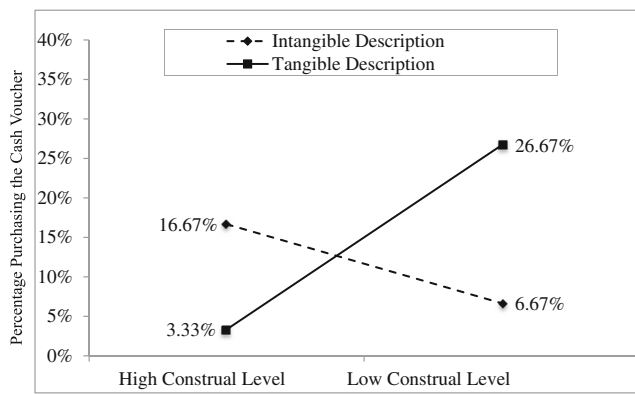


Fig. 2 Interaction of construal level and description appeal (Study 2)

Using a different manipulation of psychological distance (i.e., spatial distance), results of Study 2 replicate the findings of the preceding studies. Conducted in a field setting, Study 2 shows that a high (vs. low) construal level led to greater emphasis on the intangible (tangible) attributes in consumers' service evaluations and actual purchase behavior. To further understand the mechanism underlying these effects and the boundary condition, we conducted Study 3 in a controlled lab setting.

Study 3: mechanism and boundary condition

Study 3 has four objectives. First, we attempted to replicate the findings of the preceding studies in a service choice context. If indeed the intangible attributes were more influential in the high construal level condition, consumers would be more likely to choose the service option superior on the intangible attributes. Conversely, if the tangible attributes were more influential in the low construal level condition, then consumers would choose the service option superior on the tangible attributes. Second, we measured participants' imagery vividness and tested its mediating role in the relationship between construal level and emphasis on (in)tangible attributes (H3 and H4). Third, in contrast to the preceding studies that operationalized construal level in terms of temporal distance and spatial distance, Study 3 used the "why" versus "how" paradigm to prime high construal level versus low construal level, respectively (Freitas et al. 2004). Finally, we examined a boundary condition for the effect of construal level on consumers' reliance on service (in)tangibility in terms of service type. H5 predicts that the effect of construal level on consumer preference will hold for the experience service but will be mitigated for the credence service. That is, consumers would rely more on intangible attributes when evaluating the credence service, regardless of their construal level.

Methods and procedure

Study 3 used a 2 (construal level: high vs. low) \times 2 (service type: experience vs. credence) \times 2 (service option: superior on

tangible attributes vs. superior on intangible attributes) mixed design. Construal level and service type were between-participants' factors, whereas service option served as a within-participants factor. We used a hotel to represent an experience service and an investment bank to represent a credence service (Ostrom and Iacobucci 1995). We recruited 139 undergraduate students (47.5% male; mean age = 23.3 years) to participate in this study for monetary compensation, and they were randomly assigned to one of the two construal level conditions.

We manipulated construal level using a priming task adopted from Freitas et al. (2004). Any action can be construed at varying levels of abstraction, from low levels of abstraction that specify *how* it is performed, to high levels of abstraction that specify *why* it is performed (Vallacher and Wegner 1989). Focusing on "why do I do this action" versus "how do I do this action" could directly influence one's construal of the situation (Freitas et al. 2004). Specifically, participants in the high construal condition were asked to consider why they would engage in an activity, whereas those in the low construal condition were asked to consider how they would engage in the same activity.

As a cover story, this task was ostensibly described as a survey of students' opinions and activities. Those assigned to the high construal condition were first presented with the question, "Why do I maintain good physical health?" They were then presented with a diagram of vertically aligned boxes and were instructed to successively indicate why they would engage in "improving and maintaining health" as well as the higher-level activities comprising it. In contrast, in the low construal condition, participants were directed to successively indicate how they would engage in "improving and maintaining health" as well as the lower-level activities comprising it. By engaging all participants in each condition on the same activity, this manipulation ensured constant decisional status and content domain, with only the level of construal abstraction being varied (Freitas et al. 2004).

Following the procedure from Sun et al. (2012), we first conducted a pretest on 41 participants (48.8% male; mean age = 22.8 years) similar in profile to participants in the main study. Participants were presented with a list of attributes for hotel and investment bank services, and asked to rate the perceived (in)tangibility of each attribute on a seven-point scale (1 = extremely tangible, 7 = extremely intangible). The list of attributes for the hotel service was developed based on Ramsaran-Fowdar (2007) and the list of attributes for the bank service was adapted from Camgöz-Akdag and Zineldin (2011). Results of the pretest indicated that in the hotel context, room furnishings ($M = 1.85$, $SD = .93$), entertainment facilities ($M = 2.35$, $SD = .99$), and appearance of staff ($M = 2.60$, $SD = 1.27$) were perceived to be more tangible than the efficiency of the check-in system ($M = 3.70$, $SD = 1.34$), word-of-mouth ($M = 4.65$, $SD = 1.18$), and

service responsiveness ($M = 4.00$, $SD = 1.75$) ($ps < .05$). In the investment bank context, participants rated the physical location ($M = 2.05$, $SD = 1.27$), facilities ($M = 1.86$, $SD = 1.20$) and appearance of staff ($M = 1.90$, $SD = 1.18$) to be more tangible than efficiency of the money transfer business ($M = 3.95$, $SD = 1.07$), service responsiveness ($M = 4.29$, $SD = 1.27$), and interest rate ($M = 2.90$, $SD = 1.38$) ($ps < .01$).

Based on this pretest, we created two hotel options (Hotel A and Hotel B) and two investment bank options (Bank A and Bank B). Following Sun et al. (2012), for both services, each option listed three tangible attributes and three intangible attributes, with option A being superior on the tangible attributes and option B being superior on the intangible attributes (Appendix 3). In the service choice task, participants were presented with either the two hotel options (Hotel A and Hotel B) or the two investment bank options (Bank A and Bank B). They then rated the attractiveness of each service option and indicated their preference between the two options.

We also measured imagery vividness (Marks 1973) for the mediation analysis. Specifically, participants were asked to visualize a rising sun and think about the picture that comes before their mind's eye carefully. Then participants rated the following items on a five-point scale (1 = perfectly clear and vivid, 5 = no image present at all): (1) The sun is rising above the horizon into a hazy sky, (2) The sky clears and surrounds the sun with blueness, (3) A storm blows up, with flashes of lightning, and (4) A rainbow appears. An imagery vividness index was computed for each participant by averaging the responses to all items. Low scores indicated high imagery vividness and high scores suggested poor imagery vividness (Marks 1973). H3 suggests that participants primed with a high construal level will have a more abstract mindset, making it more difficult for them to mentally picture the items. Thus, participants primed with a high construal level will favor the intangible attributes in their service choice. Conversely, participants primed with a low construal level will have a concrete mindset and perform better in the imagery vividness task, leading to greater emphasis on the tangible attributes in their service choice. The questionnaire ended with some demographic questions. After answering all questions, the participants were paid, thanked, and debriefed.

Results and discussion

Manipulation check As a manipulation check, two independent judges unaware of the research purpose coded each participant's responses to the "why" versus "how" manipulation based on the level of abstraction (Hampson, John, and Goldberg 1986; Liberman and Trope 1998). If the participants' responses were a subordinate means to the original statement, the judges coded the response with a score of -1.

If the participants' responses were a superordinate end served by maintaining good physical health, the judges coded the response with a score of +1. If a participant's response fit neither criterion, the response was coded as 0. Ratings of each participant's four responses were then summed to form an index of abstraction ranging from -4 to +4, where higher scores indicate higher levels of construal. Results showed that participants exposed to the "why" question ($M = 3.16$, $SD = 1.12$) generated responses that reflected higher levels of construal compared with those exposed to the "how" question ($M = -3.13$, $SD = 2.03$; $F(1, 137) = 501.40$, $p < .001$), validating our manipulation.

Consumer choice We coded consumer choice as 0 if the participant chose option A that was superior on the tangible attributes, and as 1 if the participant chose option B that was superior on the intangible attributes. For the experience service (i.e., hotel), the binary logistic regression results revealed the main effect of construal level (Wald $\chi^2 = 6.17$, $p < .05$). Consistent with H1, participants in the high construal condition were more likely to choose option B that was superior on the intangible attributes (83.9%) than participants in the low construal condition (53.3%; Wald $\chi^2 = 6.17$, $p < .05$).

For the credence service (i.e., investment bank), however, participants tended to choose option B that was superior on the intangible attributes in both the high (77.8%) and low (88.3%, NS) construal level conditions, and there was no significant difference between both construal level conditions. This supports our conjecture that, as investment banking is a credence service that is difficult to evaluate even after purchase or consumption, consumers would pay more attention to the intangible attributes, regardless of their construal level. There are parallels between our finding and that of Sun et al. (2012), who show that consumers evaluating the credence service tend to rely on nonalignable attributes. Nonalignable attributes are those that are present in one service option but absent in the other option (Sun et al. 2012). While intangible and nonalignable attributes are conceptually distinct, potentially the amorphous and abstract qualities of intangible attributes closely mirror those of nonalignable attributes.

Mediating role of imagery vividness Drilling down on the finding that high (vs. low) construal level could influence consumers' emphasis on intangible (vs. tangible) attributes for the experience service, we conducted a mediation analysis on the role of imagery vividness. As the items for imagery vividness were highly correlated (coefficient $\alpha = .72$), we took their average to form an index of imagery vividness. A one-way ANOVA on imagery vividness showed that participants primed with a low construal level rated the image as more vivid than those primed with a high construal level did ($M_{\text{low construal}} = 1.99$, $SD = .56$ vs. $M_{\text{high construal}} = 3.03$, $SD = .70$; $F(1, 59) = 41.25$, $p < .001$), in support of H3.

A 95% confidence interval calculation (Hayes 2013) around the indirect effect of imagery vividness showed that it was significantly different from zero (95% CI = 2.37 to 11.70, see Fig. 3). These results confirm that imagery vividness mediated the relationship between construal level and consumers' preference for (in)tangible service options, supporting H4.

Taken together, Study 3 further affirms the effect of construal level on consumer reliance on intangible versus tangible attributes in service evaluation, and also documents the boundary condition of service type. Specifically, for the experience service, participants primed with a high construal level rely more on intangible attributes in their evaluation while those primed with a low construal level emphasize tangible attributes. However, for the credence service, participants rely more on intangible attributes, regardless of their construal level. Importantly, Study 3 reveals that participants with a low (high) construal level tend to have higher (lower) imagery vividness, which mediates the relationship between construal level and service choice.

General discussion

Taking the position that service production and consumption often involve both tangible and intangible attributes, the present research investigates how construal level (Trope and Liberman 2003, 2010) influences consumer reliance on intangible versus tangible attributes in service evaluation and decision making. Findings from two field experiments and two lab studies provide consistent support for our major propositions. Specifically, for consumers with a high construal level or when consumption was construed at a high level, intangible attributes were more influential in their service evaluation and choice formation. Conversely, for consumers with a low construal level or when consumption was construed at a low level, tangible attributes played a bigger role in their service evaluation and choice.

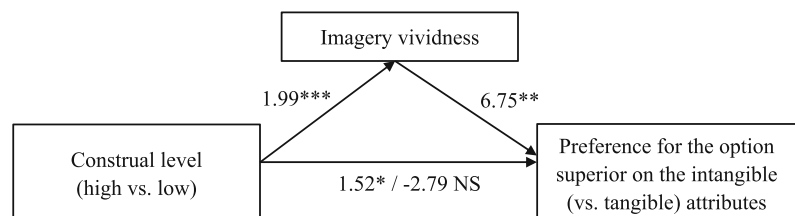
These findings are robust across different operationalizations and manipulations of construal level. In the pilot study conducted in a field setting, we manipulated construal level by varying temporal construal. Also using temporal construal, Study 1 examined the effects of advertising adopting the intangibilization versus tangibilization strategy on consumers' responses (i.e.,

advertising evaluation and willingness to pay for the service). Study 2 was a field experiment measuring actual purchase behavior, and operationalized construal level using spatial distance. In Study 3, we manipulated construal level using the "why" versus "how" paradigm (Freitas et al. 2004) in a service choice context. Importantly, we find that imagery vividness mediated the effect of construal level on consumer reliance on intangible versus tangible attributes in subsequent service choice. We further demonstrate that this effect was moderated by service type (experience vs. credence service). While the results for the experience service (i.e., hotel) replicate the findings of the preceding studies, for the credence service (i.e., investment banking), consumers relied more on the intangible attributes in both high and low construal level conditions. The key results of all four studies are summarized in Table 1.

Theoretical contributions

The present research makes significant contributions to both the services marketing and construal level theory literatures. First, an important cornerstone in the services literature revolves around the construct of intangibility as a means of distinguishing services from goods (Batson 1979; Bebko 2000; Laroche et al. 2001, 2005; Mayer et al. 2009; Zeithaml et al. 1985). Yet, in reality, very few purely intangible services exist (Lovelock and Gummesson 2004; Mittal 1999; Shostack 1977). Both the SERVQUAL scale (Parasuraman et al. 1988) and the servicescape construct (Bitner 1992) recognize the role of tangible attributes in service delivery and consumption. Nonetheless, the literature is equivocal on the relative importance of intangible versus tangible attributes from the firm's perspective, with some scholars arguing for the former (e.g., Fang et al. 2008; Vargo and Lusch 2004) and others favoring the latter (e.g., Hill et al. 2004; Shostack 1977; Stafford 1996). In taking the consumers' perspective, we reveal their relative reliance on intangible versus tangible attributes in service evaluation and choice as a function of the salient construal level. More broadly, our findings contribute new insights to the literature addressing the IHIP paradigm in services marketing (Ding and Keh 2016; Keh and Pang 2010; Lovelock and Gummesson 2004; Vargo and Lusch 2004; Zeithaml et al. 1985).

Fig. 3 The mediation role of imagery vividness (Study 3)



Note: * $p < .05$; ** $p < .01$; *** $p < .001$.

Table 1 Summary of key findings

Study	Manipulation of construal level	Dependent variable	Major results	
			High construal	Low construal
Pilot study (<i>N</i> = 71 actual consumers)	Temporal distance	Importance of tangible vs. intangible attributes	Aroma: 5.23 (1.44) Music: 5.17 (1.34) Taste: 5.46 (1.36) Layout: 5.23 (1.42) Responsiveness: 6.14 (.94) Reliability: 6.17 (.75) Courtesy: 6.14 (.77) Knowledge: 5.63 (1.31)	Aroma: 5.83 (1.06) Music: 5.78 (.93) Taste: 6.17 (1.13) Layout: 5.81 (.95) Responsiveness: 5.47 (1.54) Reliability: 5.69 (1.22) Courtesy: 5.56 (1.28) Knowledge: 4.97 (1.44)
Study 1 (<i>N</i> = 120 college students)	Temporal distance	1) Advertisement evaluation; 2) Willingness to pay (WTP)	Evaluation: $M_{\text{intangibilization}} = 5.29 (1.41)$ vs. $M_{\text{tangibilization}} = 4.20 (1.49)$ WTP: $M_{\text{intangibilization}} = 2638.46 (458.76)$ vs. $M_{\text{tangibilization}} = 2339.29 (390.00)$	Evaluation: $M_{\text{intangibilization}} = 3.91 (1.42)$ vs. $M_{\text{tangibilization}} = 6.11 (1.77)$ WTP: $M_{\text{intangibilization}} = 2458.62 (517.22)$ vs. $M_{\text{tangibilization}} = 2848.65 (509.70)$
Study 2 (<i>N</i> = 120 actual consumers)	Spatial distance	Actual purchase behavior	Tangibilization cash voucher: 3.33% Tangibilization cash voucher: 16.67%	Tangibilization cash voucher: 6.67% Tangibilization cash voucher: 26.67%
Study 3 (<i>N</i> = 139 college students)	“Why” vs. “How” paradigm	Choice of service option that is superior on the intangible attributes	Experience service: 83.9% Credence service: 77.8%	Experience service: 53.3% Credence service: 88.3%

Standard deviations are reported in parentheses

Second, to our knowledge, the current study represents the first application of construal level theory literature in services marketing. Prior applications of the CLT have involved mainly product contexts, examining issues such as choice trade-off (Khan et al. 2011), risk seeking (Agrawal and Wan 2009; Chandran and Menon 2004), self-regulation (Freitas et al. 2004; Wan and Agrawal 2011), and information processing (Smith and Trope 2006; Trope and Liberman 2010). Notably, construal level and service tangibility are two completely distinct constructs. Construal level refers to consumers’ information processing style, that is whether consumers adopt an abstract (high construal level) or concrete mindset (low construal level) in decision making. In contrast, service tangibility pertains to the attributes or elements in services that are either intangible (e.g., service responsiveness and assurance) or tangible (e.g., servicescape and employee uniform). In addition, consumers’ construal level is a situational factor that can be activated, for example, by priming temporal distance or spatial distance. However, service intangibility is a relatively stable factor (i.e., some service attributes are tangible while others are intangible in nature).

Given the central role of intangibility in the services marketing literature over the past few decades (Bateson 1979; Bebeko 2000; Bolton and Alba 2006; Laroche et al. 2001, 2005; Mazaheri et al. 2014; Zeithaml et al. 1985), our finding that construal level plays a critical role in consumers’ weighing of intangible versus tangible attributes in service evaluation has significant theoretical implications. Importantly, we also reveal the mechanisms underlying the

effects of construal level on service evaluation, particularly the mediating role of imagery vividness and the moderating effect of service type, which are both new to the CLT literature.

Finally, the current research answers the call for consumer-based strategy research by studying the consumer as the unit of analysis and using the insights to develop organizational strategy (Hamilton 2016). Specifically, Study 1 examines consumers’ responses to an advertisement adopting the intangibilization versus tangibilization strategy as a function of their construal level. Taken together, the consistent results from two lab and two field experiments involving actual purchase behavior confirm the robustness of our findings.

Managerial implications

Past research indicates various ways to subtly manipulate construal level that could easily be integrated into the routines of marketing practice (Ülkümen and Cheema 2011). Examples of instilling low (vs. high) construal level include making consumers think about their life in the near (vs. distant) future (Liberman and Trope 1998), using pictures (vs. words; Amit, Algom, and Trope 2009), and using language that involves more actions and verbs (vs. traits; Semin and Smith 1999). Beyond these means of implementing construal level in marketing practice, findings from the present research offer new managerial implications for service firms deciding whether to emphasize the intangibilization versus the tangibilization strategy in their positioning and marketing communications.

There is evidence that certain service industries already apply intangibilization versus tangibilization strategies, perhaps without realizing why. In particular, consider service firms that engage in advance selling (Shugan and Xie 2005) versus on-site selling (Zhao and Xie 2011). For example, firms selling retirement insurance policies often target workers who are about 20 to 30 years away from retirement (Ekerdt and Clark 2001). Their advertising seeks to convey to the viewer ideas about retirement based on their insurance services and tends to use taglines that highlight company longevity (e.g., “for over 119 years”), company reputation (e.g., “a worldwide leader in retirement services”) as well as employee competence (e.g., “trained” and “registered”) (Ekerdt and Clark 2001). This advertising strategy is wholly consistent with our empirical findings—as individuals are only consuming the insurance service many years later, the abstract or intangible aspects of the service will have more influence on their decision-making.

In contrast, [Wotif.com](#) represents a service firm that specializes in selling “distressed accommodation inventory,” providing heavily discounted hotel rooms for consumers who decide to travel at the last minute (Weeks and Tee 2008). [Wotif.com](#) started by selling hotel rooms available only seven days before consumption. On its website, [Wotif.com](#) shows colorful images of the hotels, emphasizing their tangible aspects (e.g., external façade, rooms, swimming pool, and gyms). Data from the company indicate that the average [Wotif.com](#) booking is for a stay of 1.5 nights, booked six days in advance (Weeks and Tee 2008). Similarly, [Wotif.com](#)’s positioning strategy can be explained by our findings—consumers tend to rely more on concrete or tangible attributes when they plan to consume the service in the near future.

In addition, our findings on spatial distance (Study 2) suggest that service firms should consider their physical distance from their customers (Keh and Pang 2010) to ensure congruence in emphasizing their intangible versus tangible attributes. For example, a community shopping center should emphasize its tangible attributes such as accessibility of location and variety of stores, as these concrete features would weigh more heavily among their customers. In contrast, a catalog or mail order retailer that does not have a physical outlet should emphasize intangible attributes such as responsive service and assurance of product delivery to attract customers. This is exemplified by online private sales clubs that rely more on their intangible distribution services to enhance customer satisfaction and patronage intention (Betancourt et al. 2017).

These implications are qualified by service type. In particular, Study 3 suggests that consumers tend to focus on intangible attributes when evaluating credence services (e.g., investment bank, medical, legal, and education), regardless of their construal level. Thus, providers of such credence services should emphasize their intangible attributes (e.g., brand image, reputation, service assurance, and responsiveness) in their marketing communications.

Limitations and future research

One potential limitation of the current research is that the proposed construal level effect may be attenuated for more experienced consumers. This is because experienced consumers who have purchased the service previously would be quite sure about their preference and know what to expect from the service provider. Thus, their prior experience would influence their service evaluation and they may be less sensitive to the intangible versus tangible attributes trade-off. Future research could empirically test the moderating role of purchase experience (new vs. experienced consumers) in the relationship between construal level and consumers’ reliance on intangible versus tangible attributes in service evaluation.

In addition, while our studies operationalized consumers’ construal level in terms of temporal distance and spatial distance, the literature notes that psychological distance could also take place in the social and hypothetical domains (Trope and Liberman 2010). Prior research suggests that the different dimensions of psychological distance could affect each other and influence construal level interchangeably (Lynch and Zauberman 2007; Trope and Liberman 2003). Accordingly, it would be worthwhile to further explore the different dimensions of CLT (i.e., temporal, spatial, social, and hypothetical distance) to gain a more nuanced understanding of consumer psychology in relation to fundamental services marketing concepts such as intangibility, inseparability, and heterogeneity (Zeithaml et al. 1985).

The present research documents service type as a boundary condition for the proposed effect of construal level on consumer reliance on service (in)tangibility. Another potential moderator is the online versus offline service context. Our field and lab experiments examined physical retailers; how would the results differ if the service firm is located online? Would virtual distance have the same implications as physical distance? Research in cognitive psychology acknowledges that much work remains to understand the perception of egocentric distance (i.e., the distance from an observer to a target) and the more general issue of perception of scale in virtual versus real environments (Loomis and Knapp 2003). Given the exponential growth of online services, this supposition merits future investigation.

Finally, future research could explore the correlation between service intangibility and hedonicity of the service benefits. According to Hirschman and Holbrook (1982), the intangible aspects of consumption are related to hedonic consumption, while utility tends to be measured as some function of the product’s tangible attributes. Nonetheless, Wakefield and Blodgett (1999) show that tangible attributes can generate excitement for leisure services, leading to higher repurchase intention and willingness to recommend. Thus, it is not clear if service intangibility is equivalent to hedonicity, and it would be worthwhile to compare the effects of construal level on consumers’ preference for hedonic aspects versus utilitarian aspects of service offerings against findings from the present research.

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which Ying Ding is the principal investigator and Hean Tat Keh is a co-investigator.

Appendix 1

Stimuli used in Study 1

Advertisement using the intangibilization strategy

XingHui Travel Agency


XingHui has gained a reputation as a travel agent that covers the whole country. Since its founding 30 years ago, XingHui has always paid attention to our customers’ needs and built a brand image as a professional, courteous, and reliable company. Our customers are highly satisfied with our services. Travel with XingHui for an unforgettable experience.



Advertisement using the tangibilization strategy

XingHui Travel Agency

XingHui employs more than 100 travel agents and provides a variety of international as well as domestic travel routes. When you walk into XingHui’s outlet, you find that the counters are well-designed and user friendly. There is a certification of “Best Travel Agency” by the tourism bureau hanging on the wall in the lobby. All the employees wear tailored uniforms, and are ready to serve customers.



Appendix 2

Table 2 Sample voucher from Study 2

Condition	Description
<p>Front</p>	 <p>50元 有效期: 2016.05.01-2016.05.31 NO. 0628912</p>
<p>Back: Low construal (nearby outlet) and tangible descriptions</p>	<p>本券可在人大西门店使用 地址: 海淀苏州街55号名商大厦 电话: 010-82618299</p>  <p>香草香草云南原生态火锅 <ul style="list-style-type: none"> • 暖色调就餐区, 傣族手工制坐垫 • 食材由云南空运、新鲜诱人 • 古铜锅底汤汁浓郁、色香味俱全 • 服务员着傣族服装, 笑容可掬 </p> <p>NO. 0628912</p>
<p>Back: High construal (distant outlet) and intangible descriptions</p>	<p>本券可在东大桥店使用 地址: 朝阳北路复星国际中心 电话: 010-65851976</p>  <p>香草香草云南原生态火锅 <ul style="list-style-type: none"> • 就餐区设计舒适、温馨 • 食材考究、原生特色 • 独家秘制锅底, 令人难忘 • 服务员训练有素、热情周到 </p> <p>NO. 0628912</p>

Table 3 Attribute descriptions from Study 2

Restaurant attribute	Intangible descriptions	Tangible descriptions
<p>Display and design of dining area</p>	<p>餐区设计舒适、温馨 Dine in comfort and warmth</p>	<p>色调就餐区, 族手工制坐垫 Warm-toned dining area, with Dai-ethnicity handmade seat cushion</p>
<p>Freshness of the food</p>	<p>材考究、原生特色 Exquisite and authentic cuisine</p>	<p>材由云南空运、新鲜诱人 Ingredients flown from Yunnan, fresh and tempting</p>
<p>Taste of the hot-pot soup</p>	<p>家秘制锅底, 人难忘 Exclusive secret recipe for soup base, memorable</p>	<p>铜锅底汤汁浓郁、色香味俱全 Bronze pot stews rich and full-bodied soup, with great color, flavor and taste</p>
<p>Enthusiasm and responsiveness of the employees</p>	<p>务员训练有素、热情周到 Well-trained, warm and thoughtful service</p>	<p>务员着傣族服装, 容可掬 Waitstaff wearing traditional Dai-ethnic costume, with a ready smile</p>

Appendix 3

Table 4 Service stimuli in Study 3

Hotel A	Hotel B
Intangible attributes <ul style="list-style-type: none"> • Not very efficient check-in system • Below average word-of-mouth • Not very prompt and responsive service 	<ul style="list-style-type: none"> • Fast and efficient check-in system • Very positive word-of-mouth • Very prompt and responsive service
Tangible attributes <ul style="list-style-type: none"> • Comfortable rooms with modern furniture • Well-equipped entertainment facilities • Neat and professional appearance of staff 	<ul style="list-style-type: none"> • Small rooms with out-of-date furniture • Limited entertainment facilities • Dowdy and casual appearance of staff
Investment Bank A Intangible attributes <ul style="list-style-type: none"> • Not very efficient money transfer business • Not very prompt and responsive service • Non-competitive interest rate Tangible attributes <ul style="list-style-type: none"> • Convenient location • Clean and modern facilities • Neat and professional looking staff 	Investment Bank B <ul style="list-style-type: none"> • Very efficient money transfer business • Very prompt and responsive service • Very competitive interest rate • Inconvenient location • Out-of-date facilities • Casual looking staff

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