

# Comprehending, Evaluating, and Recovering the Value of Service Experiences

by Yuliya Kolomoyets



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# Affidavit

I hereby affirm that this dissertation represents my own written work and that I have used no sources and aids other than those indicated. All passages quoted from publications or paraphrased from these sources are properly cited and attributed.

The dissertation was not submitted in the same or in a substantially similar version, not even partially, to another examination board.

**24.06.2021**

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Date



# Acknowledgments

*"Some things benefit from shocks; they thrive and grow when exposed to volatility, randomness, disorder, and stressors and love adventure, risk, and uncertainty... Let us call it antifragile".  
(Nassim N. Taleb „Antifragile“)*

The dissertation you are holding in your hands is a result of an exciting six-year journey. This journey was filled up with academic challenges and "Aha!" moments, continuous introspection, learning, and growth. It wended through and transcended each aspect of life: from academia and beyond. However, I was lucky enough to never wander alone. A number of invaluable people joined along the way, helped me to steer through the uncertainties, and gently pushed towards the light. And I would love to express my deepest gratitude to all of them.

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# **Publications and author's contribution**

Parts of Study 1 of this dissertation have been used in a manuscript titled "Mining value-in-use perceptions from hotel reviews "to the International Journal of Contemporary Hospitality Management. At the time of the submission of the dissertation, the manuscript received editors approval but was rejected by the reviewers.

Parts of Study 2 of this dissertation have been used in a manuscript titled "Understanding Value Perceptions and Propositions: A Machine Learning Approach "to the Journal of Business Research. At the time of the submission of the dissertation, the manuscript was under review.

Parts of Study 3 of this dissertation have been used in a manuscript with the title "Please Forgive me: Victims versus Observers Perspective on the Service Recovery Process. "to the International Journal of Contemporary Hospitality Management. At the time of the submission of the dissertation, the manuscript was under review.

Additionally, parts of the preamble and the studies included in the dissertation were used in abstracts and presented during the following conferences: IMRC 2019, TTRA 2020, Frontiers in Service 2020.

The author of this dissertation is the sole author of manuscripts based on Study 1 and Study 3. The manuscript based on Study 2 was prepared in co-authorship with the supervisor Prof. Astrid Dickinger, with the author of the dissertation taking the lead in the research and submitting the manuscript as the first author.



# Abstract

The preamble and the three studies of the dissertation are designed to answer two research questions. First, *"What is the anatomy of service experience value from customer and provider perspectives?"*, followed by *"How do contextual factors influence the service providers' capacity to recover value when services fail?"* The preamble introduces the concept of value, outlining its evolution, emphasizing the critical disparities among the dominant research perspectives, and justifying the urgency of the present research. The dissertation adopts the Grönroos-Voima value model to tap into value co-creation processes across three spheres: customers, service providers, and joint sphere. This is done by uncovering the structure of the customer value-in-use perceptions (Study 1), evaluating service providers' value proposition against those perceptions (Study 2), and assessing the impact of service recovery actions on customers forgiveness and service expectations in the context of varying prior service experiences and harm direction (Study 3). The dissertation identified the fifteen key attributes describing the value of the hotel experiences and uncovered the critical discrepancies between the value perceptions and value proposition narratives. It also determined the varying effect of prior service recovery experience and service recovery actions on forgiveness on victims and observers of service transgressions. Each study outlined the limitations of the empirical research along with the theoretical and managerial implications of the findings.

**Keywords:** value-in-use, value proposition, service failure, service recovery, experience



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# List of abbreviations

*Abbreviations mentioned in the dissertation in the alphabetical order*

- AVE** - average variance extracted,  
**CA** – Cronbach’s alpha,  
**CFA** – confirmatory factor analysis,  
**CFI** - comparative fit index,  
**CL** – customer logic,  
**CR** – composite reliability,  
**CTM** – correlated topic modeling,  
**DF** – decisional forgiveness,  
**EF** – emotional forgiveness,  
**GDL** - good-dominant logic,  
**LDA** – latent dirichlet allocation,  
**MGSEM** -multigroup structural equation modeling,  
**MSV** – maximum shared square variance,  
**pviu** – perceived value-in-use,  
**RMSEA** – root mean squared error,  
**SDL** – service-dominant logic,  
**SEM** – structural equation modeling,  
**SFE** – service failure expectations,  
**SFE\_post** – service failure expectations after the manipulated experience (posttest),  
**SFE\_pre** – service failure expectations before the manipulated experience (pretest),  
**SFR** – service failure and recovery,  
**SL** – service logic,  
**SRA** – service recovery actions,  
**SRE** – service recovery expectations,  
**SRE\_post** – service recovery expectations after the manipulated experience (posttest),  
**SRE\_pre** – service recovery expectations before the manipulated experience (pretest),

**SRMR** - Standardized Root Mean Square Residual,

**STM** – structural topic modeling,

**TLI** – Tucker-Lewis index,

**UGC** – user-generated content,

**vp** – value proposition.









# Preamble

## Introduction

The breakneck technological development set up at the end of the 20th century transformed the context of service interactions. On the one hand, new technology has supported the optimization of service design and delivery processes, culminating in abundant choice and often saturated markets. On the other hand, customers resorted to technology as a source of information to navigate in the crowded marketplace, avoiding choice paralysis. In this context, service providers' ability to facilitate value for the customers has become the key to winning them and sustaining competitive advantage (Woodruff, 1997). Consequently, value is identified as a pivotal construct in marketing, consumer behavior, and service literature (AMA, 2017; Gallarza *et al.*, 2017; Gummerus, 2013; Medberg and Grönroos, 2020; Ostrom *et al.*, 2015; Sánchez-Fernández and Iniesta-Bonillo, 2007), associated with satisfaction (Flint *et al.*, 2011), quality judgments (Macdonald *et al.*, 2011), and behavioral intentions (Chen & Chen, 2010; Petrick, 2004; Prebensen & Xie, 2017; Sweeney *et al.*, 1997). At the same time, value research is full of ambiguities concerning the definition, structure, and measurement of value (Medberg and Grönroos, 2020; Sánchez-Fernández and Iniesta-Bonillo, 2007). The ambiguities stem from the complex nature of the value that involves integrating resources and roles across spatio-temporal dimensions.

First, echoing the paradigmatic shift from Good-dominant (GDL) to Service-dominant (SDL) logic (Vargo and Lusch, 2004), the understanding of value evolved from production-related value-in-exchange (Anderson *et al.*, 1992; Bagozzi, 1975) to perceptual value – value-in-use (Grönroos and Voima, 2013; Vargo and Lusch, 2008). While the former is embedded in business operand resources and materializes at the point of exchange (i.e., purchase), the latter emerges in the collaborative consumption process through resource integration – value co-creation. Consequently, service

providers are deprived of a monopoly over the value creation process. Instead, value creation hinges upon perspectives of multiple actors in the value-creating system (Vargo and Lusch, 2008), or even wholly attributed to the customer (Grönroos, 2011; Heinonen *et al.*, 2010). Acknowledging a pivotal role of the customer, value-in-use can be defined as "the extent to which a customer feels better off (positive value) or worse off (negative value) through" (Grönroos and Voima, 2013) consumption experiences facilitated by the service provider. Thus, value judgments are manifestations of confirmed or disconfirmed subjective expectations of the service experiences, which depend on personal characteristics, prior experiences but also are shaped by communicated service offerings before, during and after consumption experiences themselves. This definition highlights the urge to decompose value from multiple perspectives, primarily those of a customer and other service beneficiaries (i.e., partners, suppliers, community) and service provider's. Overemphasizing either of the perspectives impedes the design of the relevant and valuable service experiences.

Second, the scope of the actors – service beneficiaries considered for value conceptualization depends on the desired level of aggregation. In the current literature, value is theorized from a macro- or micro-perspective (Storbacka *et al.*, 2016). The former is concerned with the firm-level analysis of value ecosystems to develop a holistic understanding of the value co-creation process across the value chain (Vargo *et al.*, 2014, 2015). Applied alone macro-perspective is often criticized for lacking explanatory power necessary for guiding the managerial decision. Moreover, the macro-level inquiry remains blind to the individual perception and contribution of the actors to the value co-creation in question (Grönroos, 2017). Hence, zooming into the micro-perspective is necessary for decomposing collective concepts and understanding the nature of value-in-use, goals of individual actors (i.e., service provider and customer) in the value system, along with the contribution of those actors to value co-creation (Storbacka *et al.*, 2016).

Finally, the extant literature lacks an agreement in regards to value measurements. The traditional uni-dimensional approach (Agarwal and Teas, 2001; Brady and Robertson, 1999; Cronin *et al.*, 2000; Zeithaml, 1988) is often criticized for being simplistic (Sánchez-Fernández and Iniesta-Bonillo, 2007) and limited (Mathwick *et al.*, 2001)

representation of value, deficient for informing value improvement measures. Hence, value evolved as a multidimensional construct, comprised of dimensions that express customer value perceptions (Gallarza *et al.*, 2017; Holbrook, 1999; Leroi-Werelds, 2019; Sheth *et al.*, 1991). Yet, the value structure varies with theoretical positions (Sánchez-Fernández & Iniesta-Bonillo, 2007) and across application contexts, prompting further research. In this context, the rise of information technology creates an opportunity to develop adaptive service evaluation solutions for leveraging the complex and dynamic nature of value (Augenstein *et al.*, 2018). These highlighted issues define the need for further value-research, feeding the motivation for the three studies included in the dissertation at hand.

## **Positioning of the dissertation within existing research**

Though "value" is not a novel concept, until the early 1990s, it received limited attention in the service literature (Eggert *et al.*, 2018). Discussions of value related to economic relations date back to the Aristotelian theory of value, outlined over two millennia ago (Gordon, 1964). Aristotle postulated that value emerges at the moment of exchange between customer and supplier, where both parties gain from each other. For example, customer "buys shoes for their use-value; the retailer sells them for exchange value" (Dooley, 2005, p.6). Such conceptualization was typical for philosophers across centuries. For example, Adam Smith, in his work *Wealth of Nations* (Smith, 1776), emphasized the difference between value attributed to the exchange of the good (service) - *value-in-exchange*, in contrast to perceptual value that indicates the utility of the obtained good (service) – *value-in-use*. While the weight of one value type over another depends on the object of exchange (i.e., water versus diamonds), value-in-use is completely disregarded in Smithsonian economic tradition. Instead it remain synonymous to value-in-exchange.

Though the utilitarian conceptualization of value inherited from economics remained prevalent, early marketing literature viewed value as a perceptive construct that reflected customers' cognitive evaluation of the exchange process (Alderson and Shapiro, 1957; Bagozzi, 1975; Kotler, 1972). "Value is completely subjective and exists in the eyes of the beholding market. Marketers must understand the market to be

effective in creating value." (Kotler, 1972, p. 50). Thus, value-in-exchange is defined as a perceived trade-off between (monetary) benefits and sacrifices related to the consumption process, often referred to as perceived value (Zeithaml, 1988). In other words, the value reflects psychological satisfaction or pleasure obtained from taking advantage of the financial terms of the price deal" (Grewal et al., 1998, p. 40). However, in the exchange view, the value is embedded in the product or service. This implies a central role of the service provider in designing and providing service offering - a *value proposition* for subsequent evaluation by the customer (Anderson et al., 1992; Flint et al., 1997).

Ensuing developments in psychology and the establishment of behavioral economics have challenged the assumption of the customer as a rational decision-maker. Kahneman et al. (1991), Thaler (1985), Tversky & Kahneman (1974), to name a few, demonstrated that customer decisions are inherently biased by emotions, heuristics, and situational factors. These developments set foundations for paradigmatic changes from Good-dominant logic (GDL) to Service-dominant logic (SDL) in marketing and service science (Vargo and Lusch, 2004), with subsequent evolution of value conceptualizations. SDL emancipates value from classical economics legacy, bringing customers to the center of the value system. Instead of being imposed on the customer, value is "determined by the customer on the basis of *value-in-use*" (Vargo & Lusch, 2004, p. 7), the perspective adopted in the current dissertation. Value-in-use is defined as the extent to which the customer feels better off (positive value-in-use) or worse-off (negative value-in-use) as a result of the service experience (Grönroos and Voima, 2013). Such perceptual evaluation goes beyond functional attributes of the service experience and reflects „individual motivation, specialized competencies, actions, processes, and performances“ (Ranjan & Read, 2016, p. 293).

Contrary to the exchange perspective, value-in-use is not embedded in the service offering per se but is co-created through resource integration by the service provider and customer along the customer journey. Phenomenologically defined value-in-use is dynamic, shaped by both internal customer characteristics (i.e., knowledge, personality traits, experience) and external factors (i.e., group membership, environment), etc. Value-in-use of perceived customer value is relative, contextual, and dynamic. In this

context, the role of the service provider is to first design and communicate the *value proposition* and then ensure its close conformity to the actual experience. Thus, the value proposition serves as an invitation to partake in the service experience (Chandler and Lusch, 2015).

Notably, the presented conceptualization of value is not a monolith. The complexity and dynamism of the value resulted in a multiplicity of conceptualizations and approaches to value research. Those can be grouped according to the level of value inquiry, perspective on, temporal aspects of value creation, and measurement approaches.

### **Level of value creation**

In the extant literature, value is studied on different levels of aggregation: macro- or societal level, meso- level when interaction happens in triads, and micro-level of dyadic interactions (Chandler and Vargo, 2011). Zooming out to macro-and meso-level opens a holistic perspective on value co-creation, which happens among a wide network of actors (i.e., employees, partners, government) within a marketing system (Eggert *et al.*, 2018). Each actor in the network acts as a "resource-integrating, service providing enterprise" (Vargo & Lusch, 2011, p. 181) in "simultaneous exchange processes" (Chandler & Vargo, 2011, p. 35). The interaction within the network is framed by institutions (i.e., rules, norms, and practices) and institutional arrangements (i.e., independent collection of institutions) (Vargo and Lusch, 2016). Macro- and meso-perspectives are helpful for studying service systems, the role of the individual actors, and the structure of their relations (Maglio and Spohrer, 2008; Vargo *et al.*, 2008). However, such an all-encompassing value is "difficult to observe empirically" (Storbacka *et al.*, 2016), which is problematic from the decision-making perspective. Also, given the perceptual nature of value, advancing understanding of value creation requires micro-foundations that could reveal the goals and perspectives of individual actors to underpin macro-constructs (Grönroos, 2017; Storbacka *et al.*, 2016).

Unsurprisingly, the micro-level is the more common approach to value research, which is also employed in this dissertation. It allows zooming into individual experiences and the dyadic interaction among individual actors in the value system (i.e., customer-supplier) (Chandler and Vargo, 2011). The "interactions are guided by specific

expectations for engagement and whether or not those expectations are met or exceeded greatly impacts the value created in a given interaction or exchange" (Akaka & Chandler, 2019, p. 142). Micro-level inferences include the definition of value structures and subjective value outcomes (Gummerus, 2013).

Importantly, the levels are not isolated but interconnected with a network of horizontal and vertical ties. Small changes in individual value perceptions at the micro-level are inevitably reflected throughout the value ecosystem on the meso- and macro-levels (Frow and Payne, 2019). Thus, an in-depth understanding of the value phenomenon requires constant zoom in and zoom out between levels of aggregation (Chandler and Vargo, 2011).

### **Perspectives on value creation**

According to Grönroos & Voima (2013), value is created in three spheres: a provider, a customer, and a joint sphere (Figure P. 1). The degree of equilibrium and the locus of value creation (in which of the spheres is the value created?) hinges upon a paradigmatic view of value. In the traditional exchange paradigm, where value is embedded in service offerings and provided by the company, value creation is concentrated in the provider sphere. The role of the customer is limited to personal judgments of the value consumption outcomes (Flint *et al.*, 2002) and happens during the exchange in the joint sphere. These judgments are primarily related to the perceived utilitarian characteristics of the service, technical interfaces, features of physical service environment, or employee interactions (i.e., price, accessibility, speed of service)(Bitner, 1992).

In the SDL paradigm, the locus shifted towards co-creation of value as a function of service providers operand resources (i.e., elements of the service offering) and customers operand resources (i.e., competencies, knowledge) (Normann and Ramirez, 1993; Prahalad and Ramaswamy, 2004; Vargo and Lusch, 2008). The service provider can not supply value, but they create an environment for the customers to engage in value co-creation. The latter is "uniquely and phenomenologically" defined as a result of resource integration and interpretation of the experience by stakeholders in the value system (Vargo and Lusch, 2008). Hence, value co-creation happens mainly in the

joint sphere, while some interpretations might continue in the customer sphere. The focus of this process falls beyond the utilitarian characteristics of the service but is linked to the holistic consumption experience (Baron and Harris, 2008). As mentioned above SDL perspective emphasizes the need for considering value creation at different abstraction levels. Hence, on the macro level, the customer sphere would be expanded to include a broader range of value system stakeholders – a value constellation (Normann and Ramirez, 1993).

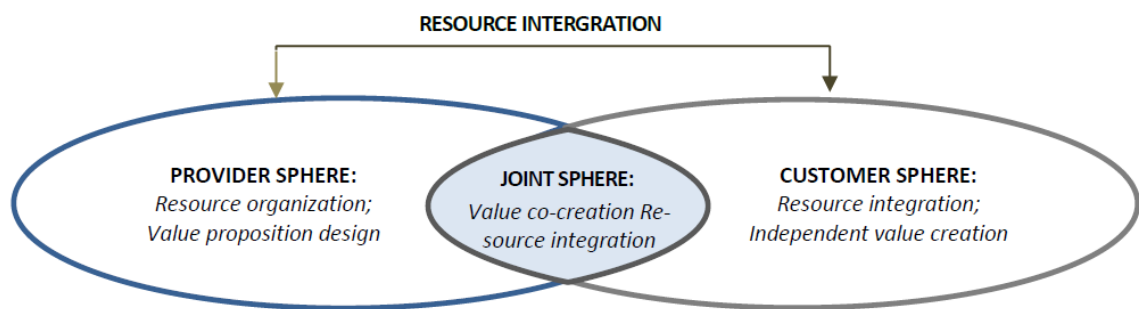


FIGURE P. 1 THE GRÖNROOS-VOIMA VALUE MODEL

In the more extreme views, Customer-Dominant (CDL) (Heinonen *et al.*, 2010) or Service logic (SL) (Grönroos, 2008), the locus of value creation deviates further towards the customer sphere. Value is not co-created, but it emerges upon customer integration of the resources provided by the company. The service provider designs the value proposition – a promise of the potential value in the closed provider sphere. The transformation of the potential into real value-in-use starts during the service experience and continues in the post-experience phase (Foglieni and Holmlid, 2017; Grönroos, 2008). From the SL perspective, the role of the service provider is restricted to value facilitation, while the real value is created independently by the customer in the closed customer sphere in the post-experience stage (Grönroos, 2017; Grönroos and Gummerus, 2014). However, value-in-use judgments do not happen in a vacuum but are contingent on the influences of the social environment (i.e., face-to-face interactions, online opinions, reviews). At the same time, Grönroos (2017) emphasizes that value-in-use is rooted in the co-creation process and hence emerges in the joint sphere. Such conceptualization often faces criticism from the SDL advocates, who

suggest that the SL view of value co-creation is akin to the micro-perspective of value creation in SDL (McColl-Kennedy and Cheung, 2018; Vargo and Lusch, 2017).

Approaching value creation from the micro-level perspective, this dissertation adopts a compromise view of value (co-)creation. The author recognizes the central role of customer judgment in final value determination – referred to as *value-in-use*; while acknowledging the capacity of the service provider to contribute to value co-creation across service experience stages as well as in the post-consumption realm. The latter is done by a) communicating relevant value proposition, b) providing service of an adequate quality, c) maintaining continuous communication and knowledge exchange with the customers through feedback loops across the customer journey, and d) integrating the knowledge back into the value proposition. The value co-creation process is not linear; any actor of the value system can initiate it. From this perspective, the critical question is "How does customer define value and how well are we (companies) providing it?" (Webster, 1994, p. 29). Hence, the business competitiveness is not encapsulated in a single sphere but requires the holistic knowledge of the service processes and stakeholder value determination.

### **Temporal aspects of value creation**

The preceding discussion demonstrated that value is experiential, socially constructed, and can be accumulated over time (Grönroos, 2017; Heinonen *et al.*, 2010; Helkkula *et al.*, 2012a). Value creation is contingent on the complexity of human nature and spatial, temporal, and other contextual settings (Grönroos and Voima, 2013). Contrary to traditional GDL, temporally value creation is not restricted to the moment of product or service exchange. Instead, value emerges along the service lifecycle: during service experience, before and after the experience (Heinonen *et al.*, 2010, 2013). This conforms to Kahneman's conceptualization of human-made evaluations as a function of derived utilities: *experienced, decision, predicted, and retrospective utility* (Kahneman *et al.*, 1997). Experienced and decisional utility reflect hedonic and rationally defined utilitarian value of the endured service experience. Predictive and retrospective indicate the expectation customer has prior to the experience and memories of those experiences (Berridge, 1999). This implies that value creation is a continuous process



between customer expectations and memory of service experiences, which is comprised of multiple moments with different weights (Kahneman & Riis, 2005).

The experience is evaluated "by the value of the representative moment, which can be the feeling associated with its end or a weighted average of the ending moment and the most intensive one," referred to as the peak-and-end rule (Kahneman & Riis, 2005, p. 286). Both moments reside within the actual service experience, creating the opportunity for service providers to steer the process towards improving or destroying value-in-use (Echeverri and Skålén, 2011; Leroi-Werelds, 2019). Given the intangible and phenomenological nature of service experiences, they are prone to failures that significantly impact service evaluations (Maxham and Netemeyer, 2002). A timely and adequate reaction to these can reestablish pre-failure service evaluations or even lead to higher evaluations, the so-called service recovery paradox (McCullough *et al.*, 2000). In the extant literature company's reaction to service failure incidents – service recovery is related to positive service outcomes, like restored justice, forgiveness, trust, satisfaction, or behavioral intentions (Kim *et al.*, 2009; Mattila *et al.*, 2009; Maxham and Netemeyer, 2002; Roschk and Gelbrich, 2014; Vázquez-Casielles *et al.*, 2010). These outcomes are also associated with value judgments, which justifies the assessment of service failure and recovery experiences (SFR) in the context of value creation.

Despite acknowledging the continuity of service experiences and value creation, most studies applied a transactional approach to service evaluation. Customer opinion of service experience and reaction to service provider's recovery attempts is mainly measured as a single-point-in-time event (Van Vaerenbergh *et al.*, 2019). Such an approach ignores the question of how the current experience fits into the continuum of value creation? In other words, how does the SFR experience influence predicted utility or expectations for forthcoming service experiences? The question which this dissertation seeks to address in Study 3.

## **Measurement approaches**

There two issues related to the measurement of value. The first is concerned with value conceptualization. In this context the literature is divided between two camps - advocates of the unidimensional versus multidimensional value conceptualization

(Sánchez-Fernández and Iniesta-Bonillo, 2007). Initially, the value was viewed as a unidimensional construct, reflecting overall customer perceptions of the utilitarian value of the exchange (Agarwal and Teas, 2001; Brady and Robertson, 1999; Woodruff, 1997; Zeithaml, 1988). It was measured with a single item or set of complementary items either in terms of perceived benefits versus sacrifices (Bolton and Drew, 1991; Dodds, 1991; Grewal *et al.*, 1998; Zeithaml, 1988).

The critics emphasize that the unidimensional conceptualization of value is too simplistic and does not reflect the complexity of customers' value perceptions, including utilitarian, emotional, and social aspects (Leroi-Werelds, 2019; Mathwick *et al.*, 2001; Sweeney and Soutar, 2001). The emerged multidimensional conceptualizations treat the value as a composite of "interrelated attributes or dimensions that form a holistic representation of a complex phenomenon" (Sánchez-Fernández & Iniesta-Bonillo, 2007, p. 431). Since value is an "interactive, relativistic preference experience" (Holbrook, 1994, p. 27), the dimensions account for affective and cognitive aspects of service evaluation. The scope and exact type of dimensions used for measuring value is a field for ongoing debates. The extant research can be divided into five research streams.

First, the *axiological theory of value* (Danaher and Mattsson, 1994; Hartman, 1967; Lemmink *et al.*, 1998) is rooted in Hartman's (1967) model of value. Axiology conceptualizes value as a triad composed of emotional, practical, and logical dimensions. According to Danaher & Mattsson (1994), emotional reactions to consumption experience are decisive for overall value judgments.

Second, the *customer value hierarchy* theory (Parasuraman, 1997; Woodruff, 1997; R. Woodruff & Gardial, 1996) views value as a layered construct composed of consumption goals, consequences, attributes, as well as a trade-off between predicted and actual experience (Woodruff, 1997). To reflect the multiplicity of goals and customer contexts, parallel measurements should be conducted to various customer segments, like first-time customers, short-term customers, long-term customers (Parasuraman, 1997).

Third, Babin *et al.* (1994) proposed to measure value in terms of *utilitarian and hedonic* outcomes of consumption (Babin *et al.*, 1994; Babin and Babin, 2001; Overby and Lee, 2006).

The fourth research stream evolves around the *Holbrook's typology of consumer value* (Gallarza *et al.*, 2017; Holbrook, 1994, 1999; Mathwick *et al.*, 2001; Oliver and Burke, 1999) is based on the axiological theory. Holbrook (1994) suggests value measurements based on three dichotomies: a) consumption drivers or motives – *intrinsic versus extrinsic*; b) orientations – *self- versus other-oriented*; c) involvement in the consumption – *active versus reactive*. Cross-combination of the six elements results in eight types of perceived value: efficiency, play, excellence, aesthetics, status, ethics, esteem, and spirituality (Holbrook, 1999). The recent study of Leroi-Werelds (2019) suggested expanding the existing typology by including adding fifteen new value types, like personalization, control, relational benefits, price, or privacy risks. Notably, ten of the introduced value types describe the negative value or the costs endured due to the experience (Leroi-Werelds, 2019).

Finally, the *consumption-values theory* (Sheth *et al.*, 1991; Smith & Colgate, 2007; Sweeney & Soutar, 2001; Williams & Soutar, 2009) views consumption as a function of multiple value types. In the original paper, Sheth *et al.* (1991) proposed a five-dimensional value structure: *functional, emotional, social, conditional, and epistemic*. The weight of each value type to the outcome value judgments is relative and framed by personality traits and context. Further approbation of the framework across industries and contexts resulted in adjustments to the initial value structure. In some instances, the conditional value was disregarded from the model as it did not appear in the value judgments for tourism products (Williams and Soutar, 2000) or durable consumer goods (Sweeney & Soutar, 2001). In other, the model was expanded to include additional value types, like sacrifices (Smith & Colgate, 2007). Smith & Colgate's (2007) adaptation of the consumption-values theory serves as a theoretical anchor for value inquiries in the current research.

Notably, there is a considerable overlap among the value dimensions across the presented conceptualization. Moreover, it is possible that in consumers minds this overlap extends to the affiliated concepts, like service quality (Medberg and Grönroos, 2020). While previous studies presented service quality as an antecedent of value perceptions (Cronin *et al.*, 2000; Macdonald *et al.*, 2011), Medberg & Grönroos (2020) found that the value-in-use dimensions reported by the bank customers closely

resemble those used in the established service quality scales. For example the identified value-in-use dimensions like *attitude* and *expertise* fit well with the definitions of *responsiveness* and *competence* in the SERVQUAL model (Parasuraman *et al.*, 1985). Hence it is possible that the ongoing theoretical debate is irrelevant from the customer perspective. Both concepts (service quality and value-in-use) can be used as proxies for explaining one another and customers perceptions of the experiences (Medberg and Grönroos, 2020).

Despite discrepancies in conceptualization, the described approaches are consistent in methodological approaches to collecting and analyzing value judgments. In most cases, customer opinions were collected using self-reported surveys. While well established, this method is resource-intensive and restrictive when the research objective is as complex and fluid as value (Gallarza *et al.*, 2017). This delineates the second issue related to value measurement.

Nowadays, especially in the business context, service evaluations require continuous monitoring to ensure a timely and effective reaction to customer aspirations or service failures. The increasing number of social science scholars advocate that the potential solution resides in the intersection of social science and information system (IS) research, aka computational social science (Dickinger *et al.*, 2017; Guo *et al.*, 2017; Kirilenko and Stepchenkova, 2018; Kwon *et al.*, 2020; Vu *et al.*, 2019). While the idea of using technology to assist social science research is not new, the emerging question fueling scientific debates pertains to the place of Big Data and data analytics in developing social science knowledge. On the one hand, the proliferation of voluminous unstructured online content, especially user-generated content, creates a fertile ground for employing data analytics (i.e., text mining) to exploring, predicting and explaining consumer (value) perceptions and behavior (Dickinger and Mazanec, 2015; Gretzel and Yoo, 2008; Gunter and Önder, 2016; Inversini *et al.*, 2010; Kirilenko *et al.*, 2017; Költringer and Dickinger, 2015; Korfiatis *et al.*, 2019; Mankad *et al.*, 2016; Park and Gretzel, 2007). On the other hand, blind importing of data mining methodologies from IS to social science context often lacks a theoretical foundation (see Mazanec, 2020). "Rather than testing a theory by analyzing relevant data, new data analytics seek to gain insights 'born from the data'" (Kitchin, 2014, p. 2). While such an approach can be fairly

informative for obtaining insightful knowledge at the given research momentum, detachment from the wider scientific debate may prove ineffective for long-term theory construction (Kitchin, 2014). The recent failures in the artificial intelligence (AI) systems of the market leaders like Amazon or Netflix caused by the irrationality of consumer decision-making in times of crisis proves the point (Heaven, 2020). Hence, rather than approaching data analytics as a theory-free empirical research design, a more sustainable approach is to treat it as "a reconfigured version of the traditional scientific method, providing a new way in which to build theory" (Kitchin, 2014, p. 6). The approach embraces the ambiguity of the data and allows for flexibility and contextualization to the theory construction. Importantly, the approach Elragal & Klischewski (2017) describe as "light theory-driven" data analytics needs to be implemented across the data analytics cycle, including data acquisition, pre-processing, data modeling, and interpretation – an approach attempted in the current dissertation.

## **Research philosophy**

The dissertation is designed within a critical realist philosophical paradigm. The choice fits the nature of socioeconomic inquiry and reflects the author's understanding of reality. Critical realism has emerged in the intersection of positivism, which accepts the existence of external objective reality; empiricism, where scientific inquiry is limited to observable reality; and interpretivism. The critical realist point of view emphasizes the relative and contextual nature of reality. Realist ontology implies that reality exists on three layers: empirical or observable, actual or beyond observable, and real or mechanisms causing the events in the upper layers. Probing into the observable phenomenon (i.e., individual behavior) allows drawing inferences about underlying processes and causal mechanisms that facilitate the former. For the objective of social science and business, research is a human, their behavior and interaction individually or within broader social and business structures (i.e., companies, societal groups.), the researched phenomena and the observed reality are a subject of continual change (Danermark et al., 2019). Understanding reality is limited by research context and the author's knowledge and theoretical framework. Such epistemological positioning conveys the versatility and complexity of social and business systems. The relevance of

the research philosophy to the research context and selected methodologies of the three studies is presented separately in the respective chapters.

## **Research questions and synopsis of the studies**

The three proposed studies are aimed at expanding the knowledge of service value formation processes by answering the two broad questions:

*RQ1. What is the anatomy of service experience value from customer and provider perspectives?*

*RQ2. How contextual factors influence the service provider's capacity to recover valuable service of failed?*

These questions are answered in three studies that, following the Grönroos-Voima value model (Grönroos & Voima, 2013), each tap into a different value co-creation sphere - customer (Study 1), provider (Study 2), or joint (Study 3). The flow of the research process and objectives of the individual studies are illustrated in Figure P.2.

*Study 1* employs topic modeling to delve into the composite structure of customers' value-in-use perceptions in the hotel settings and estimate the effect of travel party composition on the prevalence of the identified value-forming components. The analysis is based on online hotel reviews of the four five-star hotels from six European cities.

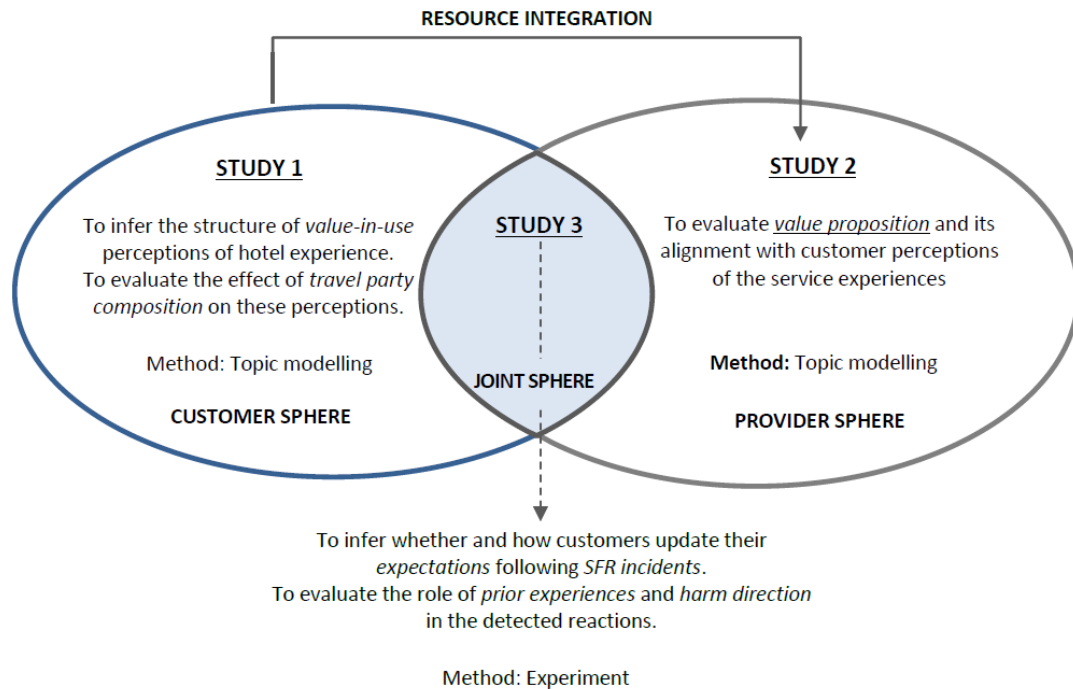


Figure P.2 Research Framework and Objectives Based on Grönroos & Voima (2013)

*Study 2* builds upon *Study 1* and uses a similar methodology to evaluate the appeal of the communicated value proposition of the hotel establishments in the sample. This is done by extending the dataset to include online hotel descriptions as a proxy for value proposition communication, inferring value-forming attributes from the composed dataset, and, finally, assessing the alignment of the identified attributes in value proposition communications versus value-in-use perceptions.

*Study 3* applies a service recovery journey perspective (Van Vaerenbergh et al., 2019) to assess the efficiency of company service recovery actions as a function of customers' prior experience with SFR incidents and harm direction. The study is designed as an online experiment where service prior SFR experience, recovery actions, and harm direction are manipulated to estimate forgiveness and future service failure and recovery expectations.

The three studies are described in detail in the following sections of the dissertation.



# Study 1. Mining Value-in-use Perceptions from Hotel Reviews

## Abstract

The purpose of this study is to infer drivers of value-in-use expressed in the online hotel reviews, identify the valence of the value-in-use attributes, and compare the distribution of the attributes across four travel party compositions. The study used a semi-automated data-based methodology to infer the structure of value-in-use in the hotel context, which opens the door for a better understanding of the evolving meaning of value-in-use in real-time. Specifically, structural topic modeling (STM) is administered to 17,372 online hotel reviews of the 1,390 European hotels from Booking.com to identify positive and negative value-in-use attributes of the hotel experience, as well as varying importance of those attributes for different travel party compositions. Theoretical theming is subsequently applied to interpret the inferred topics and to visualize them in a value map. The results demonstrate that hotel guests perceive value-in-use as a composite of 15 functional, experiential, and cost-sacrifice attributes describing positive and negative experiences with the core product, service interactions, environment, and ownership transfer. The type of travel party was found to have a marginal effect on the distribution of the identified value-in-use attributes. The study sheds light on the hotel guests' perception of the most important value-in-use. The approach can be used for assessing the existing services and setting service design priorities across customer segments.

**Keywords:** value-in-use, travel group composition, hotel attributes, online reviews, text mining.



## 1.1. Introduction

Value is a fundamental concept in marketing and service research (Cronin, 2016; Gallarza *et al.*, 2017; Leroi-Werelds, 2019; Ranjan and Read, 2016). The interest in value can be explained by its potential to affect behavioral (i.e., satisfaction, loyalty, repurchase intention) (Flint *et al.*, 2011; Macdonald *et al.*, 2011; O’Cass and Sok, 2015; Prebensen and Xie, 2017; Williams and Soutar, 2009) and economic outcomes (i.e., competitiveness, revenue) of service consumption (McDougall and Levesque, 2000; Parasuraman, 1997; Woodruff and Gardial, 1996). Amidst the paradigmatic shift from goods-dominant (GDL) to service-dominant logic (SDL) (Vargo and Lusch, 2008) or service logic (SL) (Grönroos, 2008), the literature recognized the growing role of the customer in the value creation process. Naturally, business-owned resources integrated into the service offering are necessary for facilitating value creation. However, they alone are not sufficient for defining the outcome value of the service experience. No matter how well-designed, the service offering can only convey *value proposition*, a so-called potential value promise, yet to be digested by the customers through their experiences into a perceived outcome value – *value-in-use* (Grönroos, 2008; Vargo and Lusch, 2008). Along with utilitarian judgments about the service (Zeithaml, 1988), value-in-use reflects whether customers feel better-off or worse-off after the service experience (Grönroos and Voima, 2013). Consequently, recognizing what constitutes value for a customer in a particular service context (i.e., hospitality, retail, banking) is crucial for the design of satisfying experiences (Sweeney and Soutar, 2001). Nonetheless, the empirical research on how customers experience value-in-use perceptions remains scarce (Medberg and Grönroos, 2020). Moreover, given the variety of service outcomes, these value-forming attributes can be positive and negative, which signifies the dual nature of value-in-use (Plewa *et al.*, 2015; Sweeney *et al.*, 2018). In the recent research, Medberg & Grönroos (2020) argue "there is a need for empirical studies of value-in-use in service contexts, which take into consideration the dual (positive and negative) as well as dynamic nature of the concept" (Medberg & Grönroos, 2020, p. 508).

Over the past two decades, a substantial number of scholars have investigated user-generated content (UGC) as a source to gather consumer behavior knowledge

(i.e., Filieri, 2016; Park and Nicolau, 2015; Xiang and Gretzel, 2010). While traditional qualitative and quantitative methodologies (e.g., narrative, semantic, or manual content analysis) are used, a growing number of researchers experiment with novel data mining (in particular, text mining) methodologies to harness the explanatory potential of the unstructured consumer feedback (Lu and Stepchenkova, 2015). Notably, except from the recent study by Kwon et al. (2020), UGC was not previously used to evaluate the composites of perceived value-in-use formation. The most recent advances in the field were either conceptual (Grönroos and Voima, 2013; Heinonen *et al.*, 2010; Payne and Holt, 2001) or followed qualitative (Macdonald *et al.*, 2011; Plewa *et al.*, 2015) and quantitative (Prebensen *et al.*, 2013) methodologies, using traditional research approaches (for e.g., in-depth interview with content analysis or survey with SEM). Whereas the listed methodologies are well-developed, they are prone to limitations that stem from (a) researchers' capacity to process data and delineate complex relationships in the larger datasets; (b) respondents behavioral biases (social desirability, etc.) and other (Fricker and Schonlau, 2002; Santiago-Delefosse *et al.*, 2016). In this regard, the growing pool of computational methods for text analysis, specifically topic modeling methodologies, holds great potential for transforming the vast amount of unstructured textual reviews into consumer behavior knowledge while overcoming the biases of the traditional methodologies. Abundance and convenience of readymade text mining packages across the programming environments ("gensim", "lda", "spaCy" in Python; "jLDADMM", "MALLET" in Java; "topicmodels", "OpenNLP", "text2vec" in R), make these techniques accessible to the wider range of social science scholars. In tourism and hospitality research, topic modeling is among the most popular tools to extract latent variables from the large-scale unstructured textual parts of online consumer reviews (Guo *et al.*, 2017; Kwon *et al.*, 2020; Mankad *et al.*, 2016). "Amplifying and augmenting" the traditional methodologies, topic modeling has been widely used to facilitate theoretical advances and inspiring new hypotheses for well-established theoretical concepts, like satisfaction (Guo *et al.*, 2017; Xu, 2018), service quality (Ding *et al.*, 2020; Stamolampros *et al.*, 2019), motivation (Banks *et al.*, 2018; Grimmer and Stewart, 2013). However, the method was not previously used for service value assessment. This opens an

opportunity for the development of adaptive service evaluation solutions addressing the complex and dynamic nature of value perceptions.

This study aims at addressing the identified gap in value research. Specifically, the purpose of the study is to (1) infer components of value-in-use perceptions during of the hotel experience, (2) identify the valence (positive or negative) of the value-forming attributes, and (3) compare the distribution of the attributes across four travel party composition contexts. The purpose is attained by applying text mining to the set of 17,000+ positive and negative reviews from Booking.com, that described customer experiences in 1390 hotels from six cities across Europe. The previous research applying text mining algorithms to inquire into the established service constructs, such as satisfaction or service quality (Guo *et al.*, 2017; Xu, 2018), overall yield plausible results. Therefore, it is expected that in the case of the current research as well, the identified structure of the value-in-use perceptions will reflect prior value and hotel attributes research (Dolnicar, 2003; Dubé and Renaghan, 2000).

The remainder of the study is structured as follows. The extant literature review of value-in-use conceptualization is followed by an introduction to topic modeling with a focus on the STM. After outlining philosophical position, the study proceeds with the step-by-step guide through the STM model set up and the implementation process applying the algorithm to identify value dimensions expressed in the online reviews. This is followed by the presentation of results and discussion of implications for value research as well as practice. The study concludes with potential implications, limitations of the STM methodology and suggested areas for future research.

## **1.2. Theoretical background**

### **1.2.1. Value-in-Use**

Value is one of the most heavily studied concepts in marketing and service literature. Back in 1994, Holbrook described value as a “fundamental basis for all marketing activity” (Holbrook, 1994), while Ostrom et al. (2015) listed value among the twelve service research priorities. Finally, American Marketing Association has reviewed its’ definition of marketing to reflect the importance of value (AMA, 2017). Such interest is easy to explain. Value is a cornerstone to differentiating a product, service, or brand;

creating competitive advantage (Parasuraman, 1997; Woodruff and Gardial, 1996); attracting new customers and promoting loyalty (Williams and Soutar, 2009); facilitating financial and overall business success (McDougall and Levesque, 2000). Broadly defined as a trade-off between benefits and losses, “value” was initially adopted to assess the value of the physical goods (i.e., monetary value) (Cronin *et al.*, 2000; Flint *et al.*, 1997; Zeithaml, 1988). Such utilitarian value is typically operationalized as a unidimensional construct, like value-for-money (Dodds, 1991) or perceived value (Zeithaml, 1988) measured with multiple items. Despite its convenience, this approach is restrictive and does not allow to apprehend of the holistic picture of customer value perceptions (Mathwick *et al.*, 2001).

To fit the needs of the growing service sector, value evolved as an experiential construct (Babin *et al.*, 1994; Gallarza and Gil, 2008; Grönroos, 2008; Holbrook, 1999; Mathwick *et al.*, 2001; Sánchez-Fernández and Iniesta-Bonillo, 2007; Sheth *et al.*, 1991; Smith and Colgate, 2007; Vargo *et al.*, 2008). Experiential value stems not from the products or separate elements of the service but emerges during their use (Grönroos and Ravald, 2011; Heinonen *et al.*, 2013; Leroi-Werelds, 2019). In other words, value is the result of the iterative co-creation between the service provider (i.e., hotel), customer, and other service stakeholders (i.e., booking engines, review platforms) (Vargo and Lusch, 2004). The role of the service provider is to design a *value proposition*, communicate it to a customer as a promise of the potential value, and support customers in attaining value proposition through the experience (Chandler and Lusch, 2015). The final value coincides with value-in-use. It reflects customers’ perception of “the extent to which a customer feels better off (positive value) or worse off (negative value) through experiences somehow related to consumption” (Grönroos & Voima, 2013, p. 136). The experiential approach to value-in-use implies it is subjective, contextual, and hence dynamic (Heinonen *et al.*, 2013; Vargo and Lusch, 2008). Additionally value-in-use can evolve both positively and negatively. As a result of the attempts to understand and capture the complex nature of value-in-use, the literature flourished with various multidimensional measurement approaches, like the *axiological theory of value* (Hartman, 1967), *customer value hierarchy* (Parasuraman, 1997), *Holbrook’s typology of consumer value* (Holbrook, 1999), or *consumption-values theory* (Sheth *et*

*al.*, 1991; Smith and Colgate, 2007). These scales are not contrasting but rather complementary and overlapping to a great extent. For example, economic, social, hedonic, and altruistic value aspects included in the Holbrook (1999) value typology are consonant with functional, emotional, social, conditional, and epistemic value types suggested by Sheth et al. (1991). Zooming out, the value types in both scales refer to either utilitarian or hedonic outcomes of consumption (Babin *et al.*, 1994). In the service in marketing literature, such overlap among theoretical concepts is not uncommon (Coombs *et al.*, 1970; Medberg and Grönroos, 2020). It may stem from the fact that each theoretical advancement happened separately across time, paradigmatic perspectives and application contexts.

In this study, Smith and Colgate's (2007) value framework is used to interpret customers' perceptions of value-in-use in the hotel context. The framework is based on Sheth et al. (1991) delineates the sources that facilitate perception of value-in-use (information, product, interactions, environment, ownership transfer) along with the four value types (functional, experiential, symbolic, and cost-sacrifice) (Smith & Colgate, 2007). In contrast to the initial framework (Sheth *et al.*, 1991), Smith & Colgate (2007) expanded the value typology by adding cost-sacrifice value, while at the same time collapsing emotional and social value types as experiential value.

Functional value refers to the quality and accuracy of the technical performance of the service elements, such as room facilities, location, F&B and security (Dolnicar, 2003; Flint *et al.*, 1997; Wind *et al.*, 1989).

Experiential value describes the emotions and feelings that arise during the experience (Schmitt, 1999). These feelings might be prompted by sensory experiences (i.e., delicious meal, signatory fragrance of the hotel bed linen, design), social contacts (i.e., interactions with employees and other guests) or other subjective factors (i.e., memories, associations) (Helkkula *et al.*, 2012b; Lin *et al.*, 2020; Tyan-Yu *et al.*, 2017; Yang and Mattila, 2016).

Symbolic value refers to the psychological meaning that customers might attach to the service or its elements (Smith and Colgate, 2007). At its extremes, symbolic value is associated with spirituality and conspicuous consumption. This means that people are using purchases to signal their social status, attitudes, or beliefs (Holbrook, 1999; Wu

and Yang, 2018). While particularly relevant to luxury consumption, the symbolic value was found less significant for evaluating mundane hotel experiences (Yang and Mattila, 2017).

Cost-sacrifice taps into the trade-off evaluation of the benefits versus sacrifices associated with experience in the pre-purchase, consumption, and post-consumption phases (Smith and Colgate, 2007). Customers may bear economic and psychological costs as a result of the service failures, inconsistent information and other risks associated with service experiences (Woodall, 2003). These costs may result in customers feeling worse off and lead to negative value-in-use perceptions (Grönroos and Voima, 2013; Heinonen *et al.*, 2013; Medberg and Grönroos, 2020).

Notably, the weight of the individual value types within the evaluation process is not equal across customers, customer journey stages, and application contexts.

#### **1.2.1.1. Positive versus negative value-in-use**

SDL's perspective on value implies that it cannot exist before consumption. Value is co-created through the ongoing interaction among the members of the value system – such as service provider and customer. The new logic prompts an outside-in approach to the service design, which emphasizes "how value emerges for customers and how through a sense-making process, customers construct their experience of value of a service provider's participation in their activities and tasks" (Heinonen *et al.*, 2010, p. 533). The advance of the above-stated approach is hindered by the phenomenological nature of value-in-use that originates from the service experience as its' emotional and cognitive evaluation in customers' minds (Vargo & Lusch, 2016). The baseline for such evaluations is expectations or goals customers hold before the service experience, contrasted with the perceived quality of service experience (Macdonald *et al.*, 2011; Woodruff, 1997). Confirmation of the expectations culminates in increased post-consumption well-being and positive perception of value-in-use, whereas disconfirmation may result in well-being deterioration and negative value-in-use perceptions (Sweeney *et al.*, 2018). While the former is a result of value co-creation the latter is a sign of co-destroyed value (Camilleri and Neuhofer, 2017; Dolan *et al.*, 2019; Plé and Cáceres, 2010).

The urge to treat value-in-use as a dual concept is also explained by the Prospect Theory (Kahneman & Tversky, 1979) which implies that, all things equal, people prefer avoiding losses to making the comparable gain. Multiple experiments demonstrate that the psychological pain of losing is about twice as intense as satisfaction from gaining (Kahneman and Tversky, 2013). As a result, the negative emotions for an unfulfilled service promise may be much more enduring than the emotions from a seemingly positive failure-free experiences. Since service experiences are prone to failures, both value-in-use outcomes are probable. For service providers, additional investment into a timely response to negative service experiences could be more lucrative compared to the similar acknowledgment of the positive appreciations. Yet the extant research value-in-use is predominantly treated as a positive by inference (Dolan *et al.*, 2019; Sweeney *et al.*, 2018). To the best of the author's knowledge, only a handful of studies explored value-in-use from both positive and negative stances (Baker and Kim, 2019; Čaić *et al.*, 2018; Camilleri and Neuhofer, 2017; Echeverri and Skålén, 2011; Grönroos and Voima, 2013; Leroi-Werelds, 2019; Medberg and Grönroos, 2020; Plé and Cáceres, 2010; Sweeney *et al.*, 2018). For example, Sweeney *et al.* (2018) found that in the context of financial planning services negative value-in-use primarily stemmed from the financial loss and emotional costs facilitated by the inefficient service processes. The destructive effect of the monetary and psychological costs (i.e., effort, performance risk, societal costs) was also confirmed by Leroi-Werelds (2019) and Medberg & Grönroos, (2020).

#### **1.2.1.2. Value-in-use in hospitality research**

Over the decades, numerous studies have focused on identifying the attributes that drive perceived value-in-use of the hospitality experiences (i.e., Callan, 1998; Dolnicar, 2003; Dubé and Renaghan, 2000; Wind *et al.*, 1989). Similar to the discussion in the preceding sections, the findings are inconclusive. The scope of the value attributes ranges between 8 and almost 200 (Dickinger and Mazanec, 2008). Meta-analysis of the studies published in the tourism, hospitality, and business literature between 1984 and 2000, Dolnicar (2003) identified 173 hotel attributes, illustrating ten broader categories (image, price/value, hotel, services, room, marketing, f&b, others, security, location). Location, service delivery, such as friendliness of staff, quality of service (i.e., transaction

processes), room and hotel amenities, food offering and value for money are the most frequently mentioned and the most influential attributes of the valuable hotel experience (Dolnicar, 2003; Dubé and Renaghan, 2000; Hu *et al.*, 2019; Mankad *et al.*, 2016). The weighting of attributes varies with the type and status of the hotel (i.e., star-rating), travel purpose (business versus leisure), culture, and depending on the co-travelers (Rhee and Yang, 2014; Xie *et al.*, 2014; Xu, 2018).

### **1.2.1.3. Role of travel party in value-in-use perceptions**

Travel party composition is an important factor in service evaluations. The absence or presence of co-travelers (i.e. couples, family members, friends) affects decision-making throughout the customer journey – from expectations (Liu *et al.*, 2013) to destination (Crompton, 1981) and accommodation choice (Grigolon *et al.*, 2013); expenditures (Rashidi and Koo, 2016); the perceived importance of service attributes (Rhee and Yang, 2015) and satisfaction with the experience (Radojevic *et al.*, 2015; Xu, 2018). This influence may be direct or indirect (Rashidi and Koo, 2016). The former is exercised by persuading a co-traveler. The latter is driven by the normative influence of the group members (Crompton, 1981). Travelers may adjust their initial expectations and goals to either fit in with the decision of the majority or to ensure the well-being of co-travelers. The need to compromise affects the decision-making flexibility and adaptive power of the group as well as individual travelers (Park & Fesenmaier, 2014), enhancing the possibility for unmet service expectations and deprived service value. Radojevic *et al.* (2015) found that on average solo travelers tend to rate hotel experiences higher compared to those traveling with families, friends, or as a couple. The attributes that form those ratings were also found to differ across the travel parties (Rhee and Yang, 2015; Xu, 2018), with the price being the most important for families and groups in contrast to sleep quality for solo travelers (Rhee & Yang, 2015). Considering the interconnectedness of value with the above-mentioned concepts, the presence or absence of other group members is expected to affect experience evaluations, hence, perception of value-in-use.



### 1.2.2. Topic modeling for value research

The recent avalanche of online UGC brought about by the ongoing technical revolution opened new horizons for consumer behavior inquiries. One avenue was found in leveraging the potential of *text mining* to summarize, organize, understand and visualize relevant information from the textual part of the UGC. *Text mining* is an umbrella term delineating collection of machine learning methodologies for automated extraction of meaning from the abundance of the UGC content (Blei, 2012; Fan *et al.*, 2006). The most frequently used text mining methodology - *topic modelling* is an unsupervised probabilistic approach to discover common themes, (aka *topics*) in the large unstructured collection of text documents (aka *corpus*). Essentially serving as an extension of the traditional content analysis, topic modeling, in particular LDA, gained popularity among social science researchers (Guo *et al.*, 2017; Mankad *et al.*, 2016).

Structural topic modelling (STM) (Roberts, Stewart, Tingley, *et al.*, 2014), showcased in this study, is a specific form of unsupervised probabilistic topic modelling that builds upon the established methods Latent Dirichlet Allocation (LDA) (Blei *et al.*, 2003) and Correlated Topic Modelling (CTM) (Blei and Lafferty, 2007) (Figure 1.1).

The underlying ideas behind topic modeling algorithms including STM stem from the distributional hypothesis in linguistics that the words co-occurring in the corpus tend to share meaning and are then assigned to a topic (Turney & Pantel, 2010). This makes the first assumption of the LDA-like topic modelling algorithms: each topic is a multinomial distribution over words in the corpus. For example, co-occurring words like *accommodation, rest, reception, book* and *bed* could be summoned under the topic *hotel*. In the context of different neighbors, a word may bare distinct meanings and thus, assigned to multiple topics at a time. For example, while in the *hotel* context the word *reception* co-occurs with words like *booking* and *check-in*, it may also appear along the words like *dance* and *party* to describe the *social event*. Statistically, this is represented with the word-topic matrix – the first output of the topic models like LDA or STM. Each row represents the word, column – suggested topic and respective cells indicated the probability of the estimated occurrence of the word *w* in a topic *t*. With the fixed vocabulary, what differentiate the topics is the probability-based word rank-order.

Words with the highest probabilities (common words) are then used for interpreting and labeling the topics (Blei, 2012; Blei *et al.*, 2009; Steyvers and Griffiths, 2007).

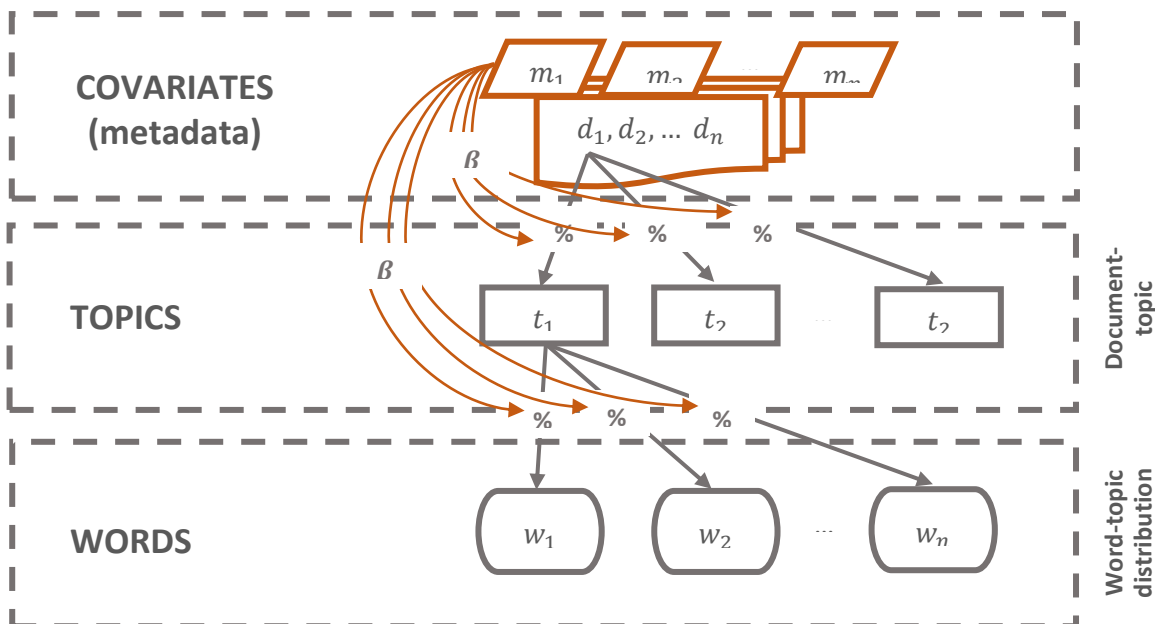


FIGURE 1.1. STRUCTURAL TOPIC MODELLING (ADAPTED FROM SCHMIEDEL, MÜLLER, & VOM BROCKE (2018))

Following the same relational approach, the documents are represented by a multinomial distribution over the set number of topics. Put simply, a document may contain multiple topics in different proportions, which makes the second assumption of the unsupervised topic models (Blei *et al.*, 2003). For example, a document  $d$  can consist for 20% of topic  $t_1$ , for 50% of topic  $t_2$  and for 30% of topic  $t_3$ . The results of the distribution are presented in the document-topic matrix with documents as rows and topics as columns. The mixed-membership approach on both word-topic and document-topic levels is the key advantage unsupervised topic model have compared to the traditional fixed-membership clustering algorithms.

While mainly following the logic and assumptions of its' predecessors, STM was brought into a spotlight for its capacity to incorporate metadata into the model (Roberts, Stewart, Tingley, *et al.*, 2014). Metadata are potential covariates and refer to any additional information besides textual corpus, like star rating, geographical location (country, city), country of traveler's origin, travel party composition or any other information related to the content of the topic and the research problem that might influence the topic prevalence. Topic prevalence is a proportion of the documents

associated with each topic, estimated as an aggregate of word frequency vectors for each document in the corpus (Banks *et al.*, 2018; Kuhn, 2018). STM modeling can be thus used not only to understand the underlying structure of the corpus (“what people talk about?”) but also the relationships between the meta information and the content (“how different groups talk about this?”) (Roberts, Stewart, Tingley, *et al.*, 2014). The latter explains the increasing interest in the STM model within the social science research community. Since the introduction by Roberts *et al.* (2014), the model has been used in the organizational (Schmiedel *et al.*, 2018), climate (Tvinnereim and Fløttum, 2015a), political (Lucas *et al.*, 2015), transportation research (Kuhn, 2018) as well as tourism and hospitality (Hu *et al.*, 2019; Korfiatis *et al.*, 2019; Kwon *et al.*, 2020; Park *et al.*, 2018). Notably, Kwon *et al.* (2020) applied structured topic modeling to identify fourteen value dimensions in the context of restaurant experience.

The following sections will elaborate on the STM procedures showcasing potential application to value-in-use inferences in the tourism and hospitality.

## **1.3. Methodology**

### **1.3.1. Research paradigm and research design**

The application of topic modeling in the domain of social science and political research is in its infancy. This naturally induces discussions about the method’s capacity to contribute to existing theories and the rigorousness and generalizability of the obtained results. The contrasting arguments are often grounded in scholars’ varying philosophical positions from positivism, empiricism to post-positivism (Ignatow and Mihalcea, 2017; Kitchin, 2014; Mazanec, 2020). As the other topic models, STM exploits Bayesian probability logic to infer underlying categories from the observed unstructured textual corpora. The distribution of these categories or topics is conditional on often subjective parameter settings, like topic number ( $K$ ) or covariates to be included in the model (Blei, 2012). Labeling and interpretation of the model output is heuristically driven and hinges upon the researcher's knowledge and believes of the research matter.

Such assumptions conform with critical realism's ontology and epistemological positions, which accept the existence of the external objective reality while emphasizing human limits to understanding the “opaque and confounding truth”

(Howell, 2012, p. 50). The researcher's task is to infer the underlying knowledge and mechanisms explaining actual reality from the observable information of the accessible empirical layer of the reality (Archer *et al.*, 2013). Hence, consumer perceptions of value-in-use are derived from the observable online textual data. The interpretations of the topics are only subjectively plausible, for they are framed by theoretical underpinnings, the author's experience, and heuristics (Danermark *et al.*, 2019). Hence, following topic modeling research design, the author accepts that the results of the study are not deterministic but rather indicative of the structural composition of value-in-use perceptions in the hotel context, viewed through the online review lenses. The subsequent sections will provide more details about the steps in the research process.

### **1.3.2. Data Acquisition**

The initial step of the research journey is to acquire the data fitting the previously mapped objectives. This involves the decisions regarding *suitable types of data, volume and retrieval process*. In this research, STM is administered on the textual part of online hotel reviews, published on the online data science community Kaggle.com under the creative commons license (Liu, 2018). The initial dataset for the analysis contained 515,738 reviews of the 1,493 high-end hotels from the six major European cities: Vienna, London, Amsterdam, Rome, Milan, and Barcelona scrapped from Booking.com between June 2015 – September 2017. To understand the structure of positive and negative value-in-use perceptions and to establish the variations in narratives among the tourists within different travel parties, the textual content of the reviews is observed along with numerical review rating, travel party composition, hotel location, and reviewer nationality. The latter two variables are used for the descriptive purpose only.

### **1.3.3. Data Preparation**

Prior to the analysis, an unstructured dataset needs to be into the final organized one so that it reflects the objectives of the study and fulfills the requirements posed by the selected modeling algorithm (García, Salvador, Luengo, Julián, Herrera, 2016). The selected dataset is screened for missing cases (with `is.na` function), duplicates (with `duplicated` function), and cases in languages other than English (with `textcat` function),

which are subsequently removed. Additionally, the reviews shorter than 30 words are discarded from the analysis, increasing the average review length from 36 to 65 words. Booking.com uses a 10-point scale that to measure the travelers' experience perception. Therefore, reviews with 1 to 4 points are defined as negative, 5 to 7 points as average or neutral, 8 to 10 points as positive manifestations of perceived value-in-use. Such a decision is supported by previous studies confirming that the reviews on the opposite ends of the rating scale reflect the extreme opinion groups (Preacher *et al.*, 2005). Specifically, the reviews on the lower side of the rating scale (1-2 stars) are associated with negative emotions, while the highest (4-5 stars) are indicative of positive emotions (Babić Rosario *et al.*, 2016; Chevalier and Mayzlin, 2006). The remaining average reviews are not neutral per se (Kirilenko *et al.*, 2021) but are associated with a so-called dual-valence, almost equally describing positive and negative experiences (Fong *et al.*, 2016). Coding average reviews under either valence category may decrease the statistical power of the analysis and compromise the quality of the results (Preacher *et al.*, 2005). Hence 45,393 average-rated reviews were excluded from the analysis.

Out of the remaining 155,492 reviews, 94% (147,109 reviews) and 6% (8,372 reviews) were positive and negative, respectively. Since the observed imbalance of the data classes is fraught with a higher misclassification rate for the minority class (negative reviews), this study adheres to under-sampling (RandUnderClassif function from DMwR package), which yielded a balanced dataset of 17,372 reviews, including 8,372 negative and 9,000 positive reviews (Table 1.1).

Finally, the textual data were cleaned and transformed into the format required by the topic modeling algorithm. Commonly referred to as pre-processed the textual part of the reviews, this process involved tokenization and lowercasing, removing of punctuation, numbers, special characters (for e.g., #, ü etc.), common English stopwords (e.g., the, is, at, etc.) as well as sparse terms, occurring less than in 10% of the reviews. The words for subsequently stemmed – reduced to their roots (e.g. run, running, runner are changed to run). All pre-processing manipulations were performed with the in-built functions from stm package.

TABLE 1.1 SAMPLE SUMMARY STATISTICS

	Frequency	Percentage
<b>Total</b>	17,372	100%
Positive reviews	9,000	51.8%
Negative reviews	8,372	48.2%
<b>Travel party composition</b>		
Solo Traveler	3,784	21.7%
Couple	8,060	46.1%
Family with children	3,321	19.1%
Group	2,296	13.1%

### 1.3.4. Model Setup

Reflecting the aim of the research, the topics describing value-in-use perceptions along with their prevalence (*viu\_attributes*) were estimated with the *stm* function from the *stm* package in R. The model included two document-level covariates: value-in-use valence (*valence*) and travel party composition (*TravelParty*) to examine potential changes in the value-in-use topic prevalence. Prevalence of perceived value-in-use dimensions of the hotel experience is specified as a function of the *valence* and *Travel party* (Equation 1.1.<sup>1</sup>):

$$Prevalence_{d,k} = \beta_0 + \beta_1 \times valence_d + \beta_2 \times TravelParty_d + \varepsilon_d,$$

where  $Prevalence_{d,k}$  denotes the proportion of the  $k$ th topic in the  $d$ th review.  $valence_d$  is a measure of extremity of the review  $d$ . Reviews rated 1 to 4 points are coded as 0 marking negative value-in-use expressions, those with 8 points and more are coded as 1, indicate positive value-in-use expression.  $TravelParty_d$  denotes four configurations of travel parties.  $\beta_0$ ,  $\beta_1$  and  $\beta_2$  are the intercept and respective coefficients.  $\varepsilon_d$  is summary of unobserved residuals or standard error term.

Using the standard R notation the formula can be illustrated as follows (Equation 1.2):

```
R> viu_attributes<- stm(documents = dataset$documents, vocab = dataset$vocab,
  K = 15, prevalence = ~valence+Travel.party+ valence*Travel.party,
  max.em.its = 75, data = dataset$meta, init.type = "Spectral"),
```

<sup>1</sup> Adopted from Schmiedel *et al.* (2018)

*documents* are the individual reviews from the full *dataset*. STM represents them as a list of word indices and their counts that are associated with the words from the character vector – *vocab*. *Data* refers to the covariates used in the model. *K* is the number of topics. The selection of this coefficient is elaborated upon in the following section. The estimation is done with a maximum of 75 iterations using *Spectral* initialization, which means that the results of the modeling will not vary depending on the seed value selected (Alvarez, 2016).

The effect of the covariates (*covariates\_effect*) is estimated with the `estimateEffect` function and illustrated in Equation 1.2:

```
R> covariates_effect <- estimateEffect( ~value+Travel.party + stmobj = viu_attributes,  
                                     metadata = dataset$meta, uncertainty = "Global").
```

It is important to mention that R automatically treats all the categorical variables as factors, which allows skipping the conversation of such variables into numerical values.

### 1.3.5. Model selection and Topic Labelling

Before the topic model can be eventually run, it is important to determine the appropriate number of topics. A number of topics is a cornerstone user-set parameter that influences the granularity and interpretability of the topics (Grimmer and Stewart, 2013). Therefore, the choice of the optimal parameter should be driven by characteristics of the textual corpus (nature of the textual corpus, size, and structure of the documents) and by the research goals alike. Though not an easy task, an adequate number of topics can be defined by the sequence of data-driven measurements and expert judgments. Several statistical approaches are proposed to inform the researcher's decision: 1) held-out likelihood or perplexity (Wallach *et al.*, 2009); 2) semantic coherence, and 3) exclusivity of topics (Mimno *et al.*, 2011). As suggested by Roberts (2014), we first used *searchK* function of the *stm* package to evaluate held-out likelihood, semantic coherence, and exclusivity of the models with 3 to 30 topics (Figure 1.2). Models within this range are commonly used in the literature to explain the latent characteristics and attribute inherent in online hotel reviews (Guo *et al.*, 2017; Hu *et al.*, 2019; Mankad *et al.*, 2016). The held-out likelihood curve follows a predominantly upward trend with values maximized for models between 14 and 17 topics and after a

slight drop for 20 to 22 topics (Figure 1.2(a)). Similar to held-out likelihood, exclusivity values improve with the increase in the number of topics. In contrast, semantic coherence descends as the number of topics increases (Figure 1.2(b)).

Though Figure 1.2 does not indicate one clearly dominating model, models with 12, 14, 15, and 17 topics stand out from the sample and thus are shortlisted for further expert evaluation. Upon the independent review of the most common words associated with the topics in the selected models, the 15-topic model was identified as the most semantically meaningful for the purpose of the current research (Table 1.2). Subsequently, the topics were assigned labels that summarize the collective meaning of the allocated words. Interestingly, the labeling process was indicative of the emotionally contrasting perception guest have regarding varying aspects of the hotel experience,

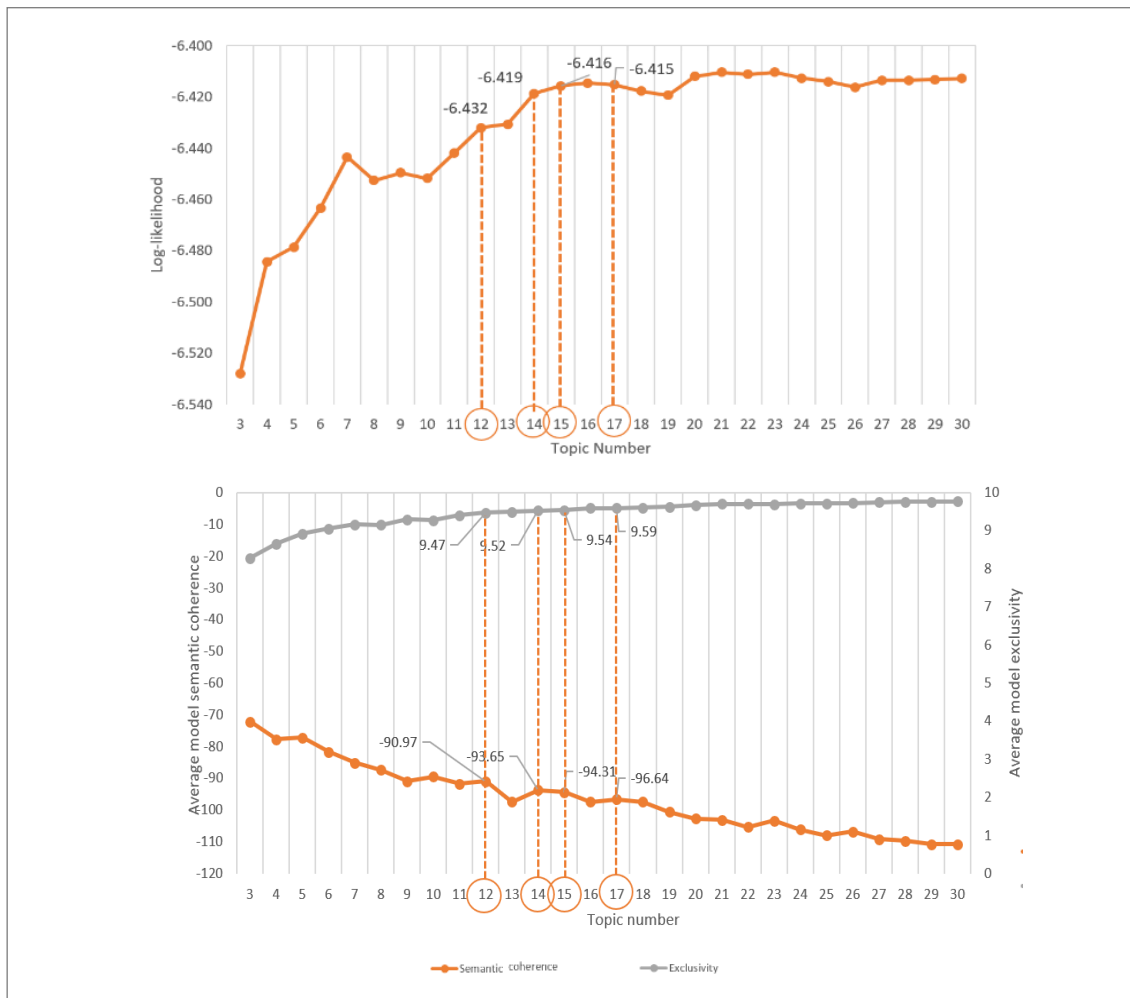


FIGURE 1. 2 TOPIC NUMBER SELECTION AMONG THE MODELS WITH 3 TO 30 TOPICS. A) HELD-OUT LIKELIHOOD; B) SEMANTIC COHERENCE AND EXCLUSIVITY SCORES which the further section will elaborate on in detail.



TABLE 1. 2 TOPIC LABELLING

Topic Label	Topic Prev.	Top Words (FREX criterion)	Examples of references
Staff (Praise)	12.8%	amaz, love, fantast, brilliant, superb, welcom, wonder	(Callan, 1998; Dolnicar, 2003; Dubé and Renaghan, 2000; Hu <i>et al.</i> , 2019)
Surrounding	9.3%	centr, tram, shop, nearbi, cafe, metro, transport	(Dolnicar, 2003; Hu <i>et al.</i> , 2019)
Transactions	9.3%	card, credit, check, payment, deposit, cash, account	(Dolnicar, 2003; Dubé and Renaghan, 2000; Hu <i>et al.</i> , 2019; Wind <i>et al.</i> , 1989; Xu, 2018)
Value for money	8.6%	star, old, bad, furnitur, rate, worth, poor	(Callan, 1998; Dolnicar, 2003; Mankad <i>et al.</i> , 2016)
Room comfort	8.3%	bite, size, comfort, modern, design, quit, space	(Dolnicar, 2003; Hu <i>et al.</i> , 2019; Wind <i>et al.</i> , 1989)
Cleanliness	7.5%	smell, cigarette, smoke, basement, filthi, window, damp	(Dolnicar, 2003; Hu <i>et al.</i> , 2019; Wind <i>et al.</i> , 1989)
F&B	6.9%	egg, cook, bread, toast, bacon, serv, menu	(Dolnicar, 2003; Hu <i>et al.</i> , 2019; Wind <i>et al.</i> , 1989)
Staff (Criticism)	6.2%	rude, alarm, unhelp, speak, guy, member, knock	(Callan, 1998; Hu <i>et al.</i> , 2019)
Booking	6.1%	com, book, websit, cancel, picture, descript, reserv	(Dolnicar, 2003; Dubé and Renaghan, 2000; Hu <i>et al.</i> , 2019; Wind <i>et al.</i> , 1989; Xu, 2018)
Maintenance	5.5%	internet, wifi, fix, condit, electr, work, signal	(Dolnicar, 2003; Dubé and Renaghan, 2000; Hu <i>et al.</i> , 2019; Wind <i>et al.</i> , 1989; Xu, 2018)
Sleep comfort	5.5%	pillow, duvet, mattress, singl, togeth, sofa, uncomfort	(Dolnicar, 2003; Dubé and Renaghan, 2000; Wind <i>et al.</i> , 1989)
Accessibility	5.3%	tube, paddington, underground, theatr, station, shuttle, train	(Dolnicar, 2003; Hu <i>et al.</i> , 2019)
Executive service	3.5%	execut, loung, junior, slipper, lift, suit, robe	(Dolnicar, 2003; Dubé and Renaghan, 2000)
Noise	2.8%	construct, build, drill, renov, contin, current, recent	(Dolnicar, 2003; Xu, 2018)
Supplementary service	2.4%	babi, everyday, cot, people, tooth, housekeep, provid	(Dolnicar, 2003; Dubé and Renaghan, 2000)

## 1.4. Results

### 1.4.1. Value-forming attributes

The outcomes of the STM analysis are presented in Table 1.2. The table includes assigned labels, the estimated proportion of the consumer stories dedicated to the topic, and the most common words for each topic according to the FREX (frequency-exclusivity) criterion. As can be observed in the second column, staff (praise) is the most prevalent topic, mentioned in 12.8% of hotel reviews. It is followed by impressions of surrounding (9.3%); transactions (9.3%), and value for money (8.6%). Supplementary

service, noise, and executive service are the least mentioned by the hotel guests (2.4%, 2.8%, 3.5%, respectively). The 15 identified value-forming attributes of hotel guest experience (topics) are consistent with the extant research of hotel attributes using both traditional methodologies (Dolnicar, 2003; Wind *et al.*, 1989) as well as the variety of topic modeling techniques (Guo *et al.*, 2017; Hu *et al.*, 2019; Mankad *et al.*, 2016). These findings affirm the effectiveness and support validity of STM as a methodology to extracting meaning from the unstructured online UGC. A noteworthy difference established by the algorithm is the duality of the two topics. Namely, hotel guests had completely antipodal experiences and thus evaluations of staff interactions and room facilities, which were both praised and criticized by the guests in their stories.

#### **1.4.2. Mapping value-in-use structure**

Emotional and cognitive evaluation of the experiences with the service attributes throughout the service journey culminates with the formation of the perceived value-in-use of the experience (Vargo and Lusch, 2017). As outlined earlier in the literature review, value-in-use is a complex and dynamic phenomenon. Conceptualizing value-in-use from different standpoints is thus instrumental for developing a coherent analytical framework. Drawing on the Smith & Colgate (2007) framework, the inferred topics were assigned to the respective perceived value-in-use dimensions. The findings are presented in the form of a structured diagram inspired by the journey map method (Figure 1.3).

#### **1.4.3. Types of value-in-use**

Building on the extant value research, the identified value-forming attributes can be characterized by the type of value-in-use: functional (11 topics), experiential (2 topics) and cost-sacrifice (2 topics) value-in-use (Figure 1.3).

Disproportionately emphasized, functional value-in-use is mentioned in nearly 57% of guest reviews. The value-forming attributes associated with it represent reflections on the utility and functional performance of the hotel resources, like surrounding (“centr”, “tram” “shop”) and accessibility (“tube”, “station” “shuttle”) of the hotel, room and sleep comfort (“size”, “comfort”, “modern” and “pillow”, “duvet”, “mattress”), F&B services (“egg”, “cook”, “bread”), the ability to sort out maintenance problems

("internet", "condit", "fix"). Cumulatively these attributes reflect guests' evaluation of the hotel's ability to perform as expected and satisfy utilitarian needs, i.e. need for sleep or easy access to sightseeing landmarks. The less prominent experiential value-in-use refers to the emotional evaluation of the stay. Conveyed through the praise ("amaz", "love", "welcom") or critique ("rude", "unhelp", "speak") of interactions with staff, it is mentioned in slightly less than 19% of reviews.

Finally, nearly 24% of the stories reflect on the finesse of the transactions ("card", "credit", "check") or booking ("com", "book", "website") processes as well the overall value for money assessment ("star", "old", "bad") that describes with the cost-sacrifice value-in-use. In line with Smith & Colgate (2007), the costs associated with hotel transactions exceed the monetary loss to include time loss and emotional costs due to the late hotel check-in when the hotel reception operates under limited working hours.

#### **1.4.4. Sources of value-in-use**

Value-in-use does not emerge at once but rather through the continuous interaction of the customer with the service value chain. Hence, another approach to conceptualizing value-in-use is by defining the value-facilitating element of the value chain or sources of value. Following Smith & Colgate's (2007) value framework, the 15 identified value-forming attributes are assigned with four value sources– product (8 attributes), interactions (2 attributes), environment (3 attributes), and ownership (2 attributes) (Figure 1.3). Given the uneven distribution, the sources differ in their importance for the overall experience evaluations. Specifically, based on the aggregated score, product-related characteristics are the most mentioned in hotel guests' evaluations – 48.2%. At the same time, on the attribute-by-attribute level interaction-related topic – Staff (Praise) outweighs all the other value-forming attributes – 12.8%.

#### **1.4.5. Valence of value-in-use**

Including customer positive and negative rating as a covariate into the STM model allowed estimating the valence of the identified value-forming attributes. This was done by estimating the difference in likelihood with which each of the attributes contributes to positive and negative value-in-use. The results are summarized in the bottom section of Figure 1.3.

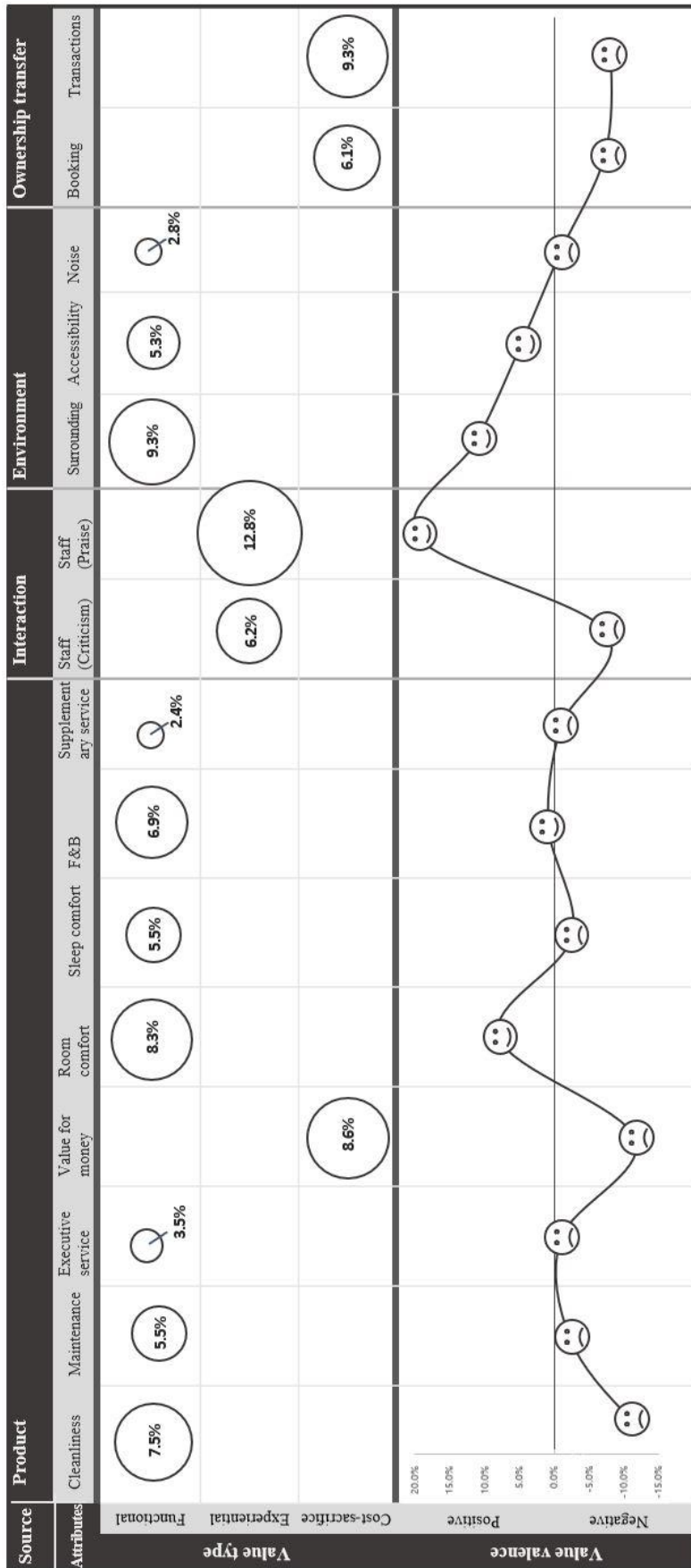


FIGURE 1.3 HOTEL SERVICE EXPERIENCE PERCEIVED VALUE MAP

For example, in the case of Staff (Praise), the estimated proportion of positive reviews is 20% higher than negative reviews, which is indicative of the positive value-in-use assigned to this attribute. Similar logic is applied to the classification of the rest of the value-forming attributes. As already mentioned, the positive value-in-use narrative is dominated by the positive staff evaluations, followed by impressions of the hotel surrounding, maintenance problems resolutions, and accessibility. The rest of the nine attributes refer to negative value-in-use. Cleanliness is the most negatively assessed attribute, followed by suit facilities and transaction problems like check-in and booking.

#### **1.4.6. Comparing the importance of value-forming attributes across travel party compositions**

The prevalence of the inferred dimensions was also evaluated in regard to the composition of the travel party. Figure 1.4 (a)-(f) illustrates the results of pairwise comparison of the expected change in attribute prevalence among four different travel party compositions: solo travelers, couples, families with children (further “family”), and groups. For example, Figure 2(a) marks a variation in the estimated proportion of each value-forming attribute for couples minus the estimated proportion of the respective attributes for solo travelers. Positive numbers indicate that couples are more likely to reflect on a certain value attribute than solo travelers: couples are more likely to reflect on the positive interaction with the hotel employees or food and beverage offering. Negative numbers indicate the opposite: solo travelers are more likely to review the unacceptable behavior of the hotel employees or maintenance problems. The horizontal bars indicate 95% confidence intervals of these estimates.

Among other significant differences, families, in contrast to solo travelers (Figure 1.4 (b)) and couples (Figure 1.4(d)), are more likely to voice their opinions about hotel surrounding and supplementary services. Couples and groups more often recognize positive staff attitudes in contrast to solo travelers. Finally, all of the travel parties are more sensitive to external noise than the groups.

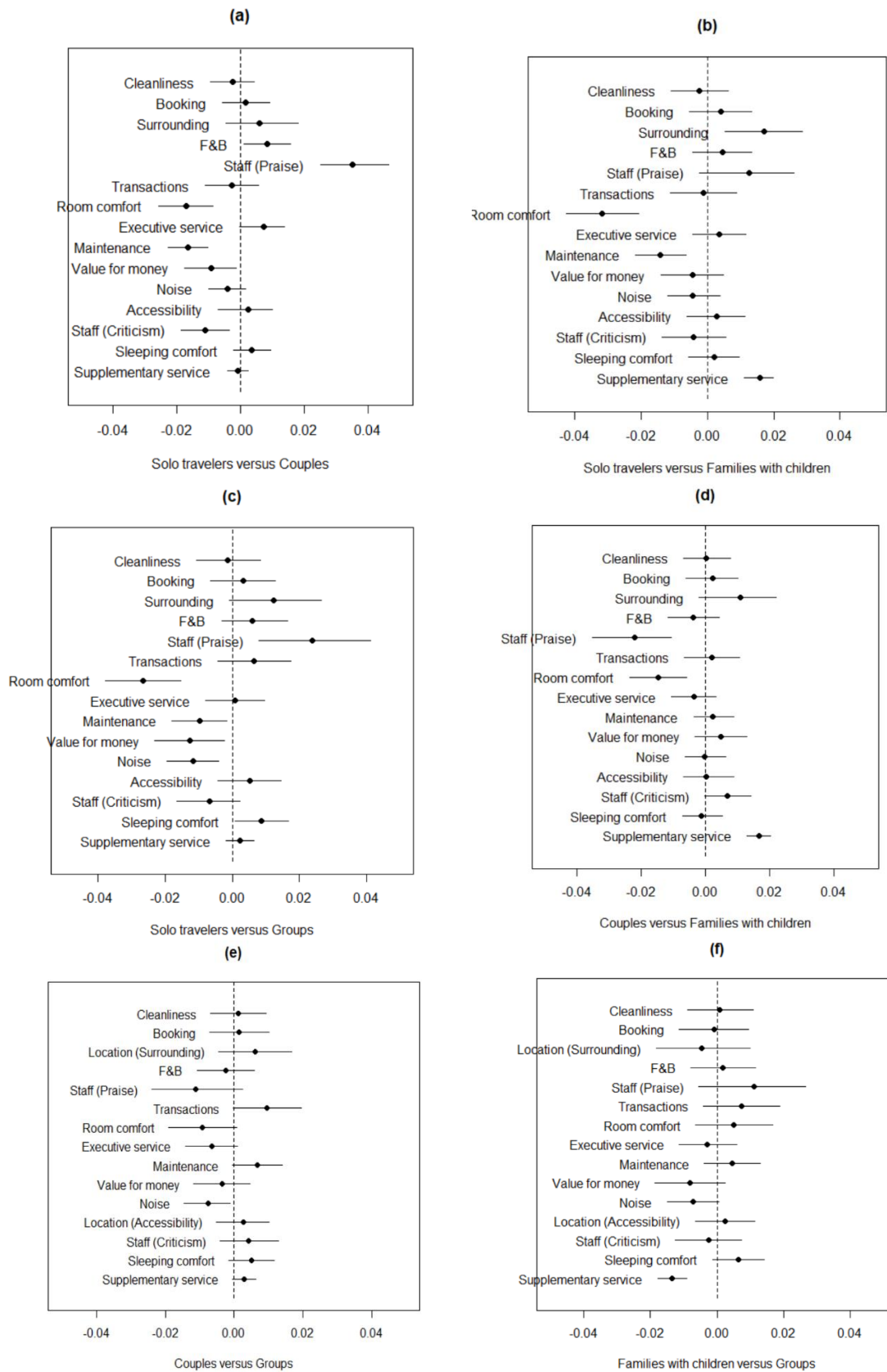


FIGURE 1.4 EFFECTS OF TRAVEL PARTY COMPOSITION ON TOPIC PROPORTIONS: DIFFERENCES BETWEEN (A) SOLO TRAVELERS AND COUPLES; (B) SOLO TRAVELERS AND FAMILIES WITH CHILDREN; (C) SOLO TRAVELERS AND GROUPS; (D) COUPLES AND FAMILIES WITH CHILDREN; (E) COUPLES AND FAMILIES

## 1.5. Discussion and conclusions

### 1.5.1. Discussion

Value-in-use is a complex phenomenon, which, while rooted in the business-owned resources, is largely shaped through the prism of individual characteristics. Losing control over value creation, businesses are confronted with the need to advance their understanding of the consumers and their experience evaluation processes (Grönroos, 2017). This entails for researchers to pursue the development of evidence-based approaches to measuring the perceived value of service experiences. This study applied a novel STM methodology to explore the composition of the value-in-use of the hotel experience and evaluate the moderating effect of the travel party composition on the proportion of the identified value-forming attributes.

Administered to the collection of online reviews of the middle-class hotels in six major European cities, STM results revealed that hotel guests attain the value of the hotel experience through 15 value-forming attributes, all of which were previously identified as important for evaluating hotel experiences (Guo et al., 2017; Hu et al., 2019; Wind et al., 1989). According to Dolnicar (2003) in tourism literature, 173 attributes are commonly used for evaluating the hotel experience.

Due to the imposed degree of model precision, some attributes, like parking, breakfast were not outlined as separate attributes but integrated into the more general categories, like accessibility or food & beverage, respectively. By contrast, the results of this study suggest while that the hotel guests' evaluations are more likely to be triggered as the result of interaction with staff. Both praise and critique of staff comprise around 20% of the evaluation narrative. Based on the discussion, the following propositions are developed:

*Proposition 1. Value-in-use is multifaced and could best be measured through fifteen value-forming attributes.*

Hotel experience evaluations tend to be complex, pertaining to the core product, environment, interactions, and ownership-transfer experience (Smith and Colgate, 2007).

Collectively the bundle of functional value attributes related to the core product components, like cleanliness, room facilities or general hotel state, tend to prevail in the examined narratives, particularly in those with negative valence (Yang and Mattila, 2012). However, per attribute frequency of these evaluations is significantly lower compared to experiential value-in-use attributes describing interaction with staff. Hotel guests tend to consider interaction with staff treatment as primary, followed by hotel surrounding, quality of transactions, value for money, and room comfort, respectively. These findings confirm Yang & Mattila (2016), which reported the prevailing role of experiential or hedonic value for evaluating hospitality experiences. Moreover, significant attention was paid to the cost-sacrifice dimension, which signifies the perception of the quality of the ownership transfer processes like booking, transactions, like payments for the hotel. As per the role of the symbolic value of the hospitality experience, the respective attributes were not identified in the online hotel evaluations. These results are in line with the findings of Yang & Mattila (2016) who also did not establish the importance of the symbolic value for hospitality experience evaluations, yet contrast with Chen & Peng (2014) establishing the significant role of symbolic value in particular in the context of the luxury hotel experiences of the Chinese guests. Hence the current findings do not imply redundancy of the symbolic value. Instead, the context, i.e., the level of the hotel establishments, hotel guests' origin, as well as the nature of the online reviews as a source of customer evaluations, could affect the prevalence of the respective attributes. Since the goal of online review platforms is to provide a concise evaluation of service experiences, reviews tend to be short and detail-focused, hence overemphasizing functional over other types of values. Moreover, as humans, we are often reluctant to share our deep emotions and psychological states in public. These findings imply the following propositions:

*Proposition 2. Hotel guests evaluate their experiences in terms of functional, expressive, and cost-sacrifice value-in-use.*

*Proposition 2a. Attributes of the functional value-in-use are the most plentiful hotel guests' service evaluations.*



In order to effectively integrate the findings into the experience design process, it is important to treat value-in-use emergence as a continuous, systematic activity. This implies that evaluations happen iteratively throughout the value chain interactions. The obtained results indicate that hotel experience evaluation occurs at four stages that mark sources of value-in-use: product, interactions, environment, and ownership transfer. While product characteristics remain essential to the initial experience evaluations, hotel guests remain more sensitive to the external components surrounding the actual overnight experience (interactions, environment, etc.). This research goes beyond previous literature by inquiring into both positive and negative value-in-use and revealing a comprehensive structure of emotional orientation (valence) of the value-forming attributes. The results demonstrated that in their post-experience evaluations hotel guests tend to overemphasize the negative service experience moments over positive. Given the detrimental effect of negative evaluations, awareness of such a complex value-in-use structure is instrumental for sustainable business performance. Summarized in the value map, the findings promote the more structured approach to the experience design process, allowing to identify of the thriving and enduring elements of the value chain. Hence the following propositions are suggested:

*Proposition 3. Value-in-use emerges through the multiple stages of the value chain process.*

*Proposition 4. Value-in-use is disproportionately represented by negative over the positive narrative.*

*Proposition 4a. Negative value-in-use is strongly facilitated by the internal service-related processes*

Finally, in contrast to the prior research that linked travel party composition to changes in tourists planning and behavior (Rhee and Yang, 2015; Wu *et al.*, 2011; Xu, 2018), the current analysis revealed a rather marginal effect travel party composition on the structure of value-in-use perceptions. To a large extent, solo travelers, couples, families with children, and groups exhibit similar behavior. Among the other travel party configurations, couples and groups differ the least, with couples being more sensitive only to noise. In contrast solo travelers are the most distinct in their evaluations of hotel experiences. It was found that

solo travelers are the most critical to the staff actions, in comparison to other travel parties, solo travelers seldom praise hotel employees for their service. Solo travelers may receive less attention from the side of hotel employees, resulting in fewer interactions beyond the formal value chain. For they tend to weigh functional characteristics of the hotel experience - the quality of room facilities and general state of the hotel, as more significant in their evaluations. For families with children, the latter significantly influences travel behavior through adults' consideration of child's welfare (Crompton, 1981). Hence families, more than others value surrounding area of the hotel that ensures proximity to the travel objects as well as other tourist infrastructure. Based on these results, the following propositions with some having an impact on the design of the facility can be assumed:

*Proposition 5. Travel party composition has a marginal effect on value-in-use perceptions in the hotel context.*

*Proposition 5a. Solo travelers are more prone to staff criticism compared to other travel parties.*

*Proposition 5b. Functional characteristics of the hotel experience are more critical to solo travelers than those accompanied by more people.*

*Proposition 5c. Families value the quality of the hotel surrounding higher than the other travel party groups.*

### **1.5.2. Theoretical implications**

The present study contributes to the growing stream of value research in two aspects. First, by inferring the critical dimensions of customers' positive and negative evaluations of hotel experience. Second, by showcasing a dynamic STM approach to value-in-use assessments as a viable alternative for traditional survey-based research. Additionally, the study provides insights into how travel party composition might affect the evaluations manifested in online reviews. Largely supporting the findings of the extant research, the study hence confirmed structural topic modeling as a valid approach to inferring structure and continuous monitoring of value-in-use perceptions in the hospitality context.

### **1.5.3. Managerial implications**

The results of the study have significant implications for management in the hospitality sector and beyond. First, UGC serves as a valuable source of first-hand customer-related information that can shed light on hidden customer perceptions of the valuable experience as well as the underlying drivers of customer behavior. Second, harnessing the potential of topic modeling opens the door to an ongoing audit of customer reactions across time and contexts. Managers can use to ensure timely reactions and interventions to the service design process across customer segments. Partial automation of these processes frees time and financial resources, which could be used for service improvements.

### **1.5.4. Limitations and future research**

The study is not free from limitations, which offer fruitful avenues for further research. First, since online reviewers belong to a specific segment of the population – those with internet access and willing to share their opinions with others through the online platforms, the results of are not generalizable to the global population. Additionally, online opinions may be subject to response bias and hence prone to manipulations from the side of other online community members (Li and Hitt, 2008). Future studies may expand the sample towards other online platforms or complement the findings with the results of the traditional methodologies. Second, while the exploration of value perceptions is important for understanding the customers and their consumption goals, evaluation of the service processes and service design requires another perspective – that of a service provider (Foglieni *et al.*, 2018). The finding of the current study may serve as a benchmark for evaluating the alignment between the company's and the customer's view of service value.



# Study 2. Understanding Value Perceptions and Propositions: a Machine Learning Approach

## Abstract

Value as a concept has received attention from both academia and practice over the years. More recently, the concept of value proposition giving companies a competitive edge and the resulting perceived value-in-use has been debated. Companies communicate their value propositions online, and customers, in turn, are vocal about value-in-use through online reviews. These are persuasive, credible, and highly influential information sources. Therefore, it is imperative for companies to find a cost and time-efficient approach to monitor value propositions and value-in-use. This study shows how structural topic modeling offers insights into the narrative on value from both a company's as well as customer perspective. The analysis of 18,762 documents shows that intangible value-forming attributes are prevalent in reviews while companies focus on tangible service offers. The chosen approach also sheds light on key-value-forming elements along the service value chain.

**Keywords:** structural topic modeling, value proposition, value-in-use, machine learning

## 2.1. Introduction

With fierce global competition and substitutes just a click away, the service industry must deliver value to more educated and better-informed customers. The concept of value has received academic attention since the 1980s. The focus was on defining the concept

(Hirschman and Holbrook, 1982), understanding value perceptions, the measurement (Zeithaml, 1988), and operationalization thereof (Sánchez-Fernández and Iniesta-Bonillo, 2007). Recently the concept of value gained increased attention in the service literature as the "most important organizing principle" (Webster, 2002, p. 61) for unlocking business success. While the term "value proposition" is not new, research is lacking consensus on what constitutes a value proposition (Ballantyne *et al.*, 2011; Skålén *et al.*, 2014) and how it should be managed to sustain a competitive market position and facilitate service innovations (Michel *et al.*, 2008; Payne *et al.*, 2017)

There are two issues related to value proposition conceptualization. First is the nature of the value proposition itself. Early studies refer to value proposition as a value promise built around key points of difference, developed and communicated by the service provider to the customer (Anderson *et al.*, 2006; Lanning *et al.*, 2000). Such unidirectional goods-dominant logic contradicts the foundational premises of service-dominant logic (Vargo and Lusch, 2004). Second, a reconceptualization of the value proposition is linked to the changing role of customers in the value system. Given the reciprocity of the value co-creation process, customers evolve from passive consumers to the eventual judges of the service value (Vargo and Lusch, 2004). In other words, outcome value is phenomenologically defined by customers in the process of experience or use of the value proposition – value-in-use. In fact, in the recent service literature, value-in-use is often used interchangeably with the outcome or total value of service experience (Grönroos and Voima, 2013). Customers increasingly communicate the value-in-use and their experiences with a service firm in online reviews and evaluation pages of online retailers or booking platforms, rendering highly influential sources of information (Ho-Dac, 2020; Mankad *et al.*, 2016; Xu and Li, 2016). The sheer abundance of these data has called for automated text analyses to take advantage of the information offered by firms (value proposition) and the evaluation of customers (value-in-use).

Notably, the development of the relevant value proposition hinges upon service providers' ability to understand what constitutes valuable service experiences and to integrate these insights into the respective value proposition. The degree of alignment between customers'

aspirations and communicated value proposition defines the competitiveness of the service offering (Baumann *et al.*, 2017).

Evaluations of interaction between the customers' and business' perspectives remain rare in the service literature (Foglieni and Holmlid, 2017). Therefore, the study at hand aims to synthesize the perspectives and draws on both customer value-in-use reports and company value propositions, providing an understanding of i) the underlying structure of the communicated value proposition and value-in-use in the hotel context; ii) the degree of alignment of identified dimensions of the communicated value propositions and the respective dimensions of value-in-use.

An evidence-based approach to assessing and monitoring value-forming processes can support the design and improvement of services to match customers' requirements (Foglieni *et al.*, 2018). It is relevant for companies to understand which value-forming elements are perceived positively or negatively and which elements of hotel experiences induce them.

Hotel reviews' persuasiveness, credibility, and trust positively influence information seekers (Mauri and Minazzi, 2013; Vermeulen and Seegers, 2009). Furthermore, traveler's accommodation booking intentions are dependent on the valence, volume, and variation of reviews (Blal and Sturman, 2014; Chevalier and Mayzlin, 2006). Consequently, hotel reviews profoundly impact customers' perceptions of a hotel and, in turn, future sales (Xie *et al.*, 2014). The research at hand focuses on the most positive and negative reviews to gain an understanding of the themes contributing to value formation.

In addition to the valence, the impact of a review also depends on the stage in the product life cycle. Zhu and Zhang (2010) showed that reviews are less influential in the early stage of a product life cycle. Moreover, the attributes reflected upon in the reviews stem from various touchpoints along the customer journey (Mankad *et al.*, 2016). Smith & Colgate's (2007) value framework proposes that product, interactions, environment, and ownership are integral to evaluating and monitoring value creation along the service chain. We employ this approach in the current research.

Accordingly, this study further investigates iii) the prevalence of positive vs. negative valence in value-forming service elements and iv) demonstrates the potential of applying scalable text-mining techniques to assess value propositions and value-in-use along the service value chain.

By drawing on data from four and five star hotels from six European cities, the study shows how online hotel descriptions and online reviews are used for communicating value proposition and value-in-use, respectively.

Approaching such dynamic concepts with traditional research methodologies is resourceful and hardly manageable. Therefore, data-driven methodologies, like machine learning, emerge as a valuable alternative (Augenstein *et al.*, 2018). In the service literature, various machine learning methodologies are applied to access customer knowledge encompassed in the online user-generated content, particularly online reviews (see Dickinger & Mazanec, 2015; Filieri, 2016; Guo *et al.*, 2017; Mankad *et al.*, 2016). Following the recent development of the text mining stream of data analytics, service, and marketing scholars increasingly turn to topic modeling techniques, like Latent Dirichlet allocation (LDA), Correlated topic modeling (CTM) (Blei, 2012), or Structural topic modeling (STM) (Roberts, Stewart, Tingley, *et al.*, 2014), to discover and interpret customer perceptions (Hu *et al.*, 2019; Mankad *et al.*, 2016). In this study, the STM approach (Roberts, Stewart, Tingley, *et al.*, 2014) is proposed to evaluate value propositions against customer perceptions of the service experience.

The remainder of the paper is organized as follows. First, the central theoretical concepts are presented in the literature review. This is followed by a chapter on methodology detailing the research design, data acquisition, pre-processing, and model setup. Finally, results and a discussion thereof follow. The paper concludes with limitations and implications.

## 2.2. Theoretical Background

### 2.2.1. Understanding Value

There are considerable variations in existing conceptualizations related to the perspective, level of granularity, the paradigmatic, or philosophical position regarding value (Grönroos and Voima, 2013; Payne *et al.*, 2017; Zeithaml *et al.*, 2020). Grönroos & Voima (2013) emphasize that the total value of a service experience is co-created across three spheres: a provider, a customer, and a joint sphere. It is a composite of the designed and communicated business offering – value proposition, and subjective customer evaluation of the consumption experience – value-in-use, that emerge through the systemic interaction of service stakeholders, i.e., provider and consumer - value co-creation (Saarijärvi *et al.*, 2013; Vargo *et al.*, 2008). The total value is contingent upon individual perceptions of "the extent to which a customer feels better off (positive value) or worse off (negative value) through experiences related to consumption" (Grönroos and Voima, 2013). These perceptions are assessed with a variety of unidimensional (Prebensen *et al.*, 2013; Sweeney and Soutar, 2001; Zeithaml, 1988) and multidimensional scales (Babin *et al.*, 1994; Holbrook, 1994; Sheth *et al.*, 1991). For example, consumption-values theory (Sheth *et al.*, 1991) conceptualizes value along five dimensions - functional, emotional, social, conditional, and epistemic. The weight of each value type to the outcome value judgments is relative, framed by personality traits and context. There are industry-specific adaptations, such as the conditional value was disregarded from the model as it did not appear in the value judgments for tourism products (Williams & Soutar, 2000) or durable consumer goods (Sweeney and Soutar, 2001). The model was also expanded to include other value types, like sacrifices (Smith and Colgate, 2007). The fluid nature of value creates endless possibilities for adaptations of the existing measurement scales. To ensure the contextual relevance of the measurement scales, researchers adopt abductive logic – moving back and forth between customer insights and value theories (Plewa *et al.*, 2015; Zeithaml *et al.*, 2020).



Customers play an active role in determining the value of the service experience and their evaluations depend on the interactions with the service provider. In particular, to what extent the communicated value proposition resonates with customer value expectations (Helkkula *et al.*, 2012a; Zeithaml *et al.*, 2020). Research interprets value proposition from two main perspectives, depending on the customer's role in the value proposition design process: supplier-oriented (Anderson *et al.*, 2006; Lanning *et al.*, 2000) or collaborative (Bettencourt *et al.*, 2014; Chandler and Lusch, 2015; Skålén *et al.*, 2014).

Initially, value proposition referred to the company's promise of delivering tangible and intangible benefits like service quality, performance, customization, convenience, and optimal price, to the customer (Bower and Garda, 1985; Lanning and Michaels, 1988). Lanning & Michaels (1988) posit that the choice and subsequent communication of the value proposition should reflect the competitive advantage and resonate with customer needs. Companies may choose to present all benefits at once, highlight the favorable points of difference or emphasize selective features most resonant with customer needs (Anderson *et al.*, 2006). Either strategy implies a value proposition to be delivered to the customers (Lanning *et al.*, 2000), leaving them with a secondary role of a passive consumer (Skålén *et al.*, 2014).

Conceptualizing the value proposition as a promise is misleading since the service provider cannot assure the declared consequences of the service experience (Grönroos and Gummerus, 2014). The more appropriate would be to treat value proposition as an "invitation from actors to one another engage in service...in order to attain value, whether it is economic, social, or some combination of those" (Chandler & Lusch, 2015, p .3). The invitation should not only be conveyed at the service design stage but repeatedly emphasized across multiple touchpoints along the service experience journey (Bettencourt *et al.*, 2014; Skålén *et al.*, 2014).

The appeal of the value proposition depends on how customers perceive it and may vary across individual customers or target segments (Chandler and Lusch, 2015; Zeithaml *et al.*, 2020). Research shows varying degrees of incongruity between the communicated and perceived value of service experiences (Baumann *et al.*, 2017; Martelo-Landroguez *et al.*,

2015). Service providers tend to underestimate the relational component of value (Baumann *et al.*, 2017). Sustaining competitiveness requires service providers to look out for such value discrepancies across experience touchpoints. The obtained information can be used to evaluate and update their value propositions, aligning those to customers' vision of valuable service.

Against this backdrop, our study adopts a service-dominant logic perspective which acknowledges value proposition design as a co-creative process that a) depends on an in-depth understanding of outcomes and, more importantly, the anatomy of stakeholders' perceptions and priorities; b) is dynamic and needs to be revisited multiple times. This calls for a systematic evaluation of experience performance as a tradeoff between value proposition and customer value perceptions (Foglieni *et al.*, 2018). Notably, companies across industries increasingly draw on consumer reviews or user-generated content, i.e., value-in-use descriptions, to improve their offer (Ho-Dac, 2020; Ray *et al.*, 2021). This avenue is taken for the research at hand.

### **2.2.2. Data-Driven Value Research**

The idea of using technology to assist social science research is not new. The emerging question fueling scientific debates pertains to Big Data and data analytics in developing social science knowledge. The proliferation of voluminous unstructured online content creates a fertile ground for employing data analytics, in particular text mining, to explore, predict and explain consumer (value) perceptions and behavior (see Gretzel & Yoo, 2008; Kirilenko *et al.*, 2018; Költringer & Dickinger, 2015; Mankad *et al.*, 2016; Xu, 2020). For instance, Mankad *et al.* (2016) propose a 'sentiment-topic' model approach for mining the information from unstructured textual corpora containing online hotel reviews. They also investigate the correlation between valence, the topical composition of the review, and the assigned rating.

In this study, structural topic modeling (STM) is used to discover common themes (aka topics) in the collection of the unstructured text documents (aka corpus), namely hotel reviews and hotel descriptions (Roberts, Stewart, Tingley, *et al.*, 2014). STM is an extension

of the unsupervised probabilistic topic modeling techniques that build upon the established methods Latent Dirichlet Allocation (LDA) and Correlated Topic Modelling (CTM) (Blei, 2012). STM was brought into the spotlight for its capacity to incorporate additional information (metadata), like star rating, geographical location (country, city), country of traveler's origin, travel party composition, etc., to estimate topic or content prevalence in tourism (Roberts, Stewart, Tingley, *et al.*, 2014). Such modeling can be employed to understand the underlying structure of the corpus ("what people talk about?") but also the relationships between the meta information and the content ("how different groups talk about this?"). STM has been implemented across social science research (Kuhn, 2018; Schmiedel *et al.*, 2018; Tvinnereim and Fløttum, 2015b). In tourism and hospitality, it is employed to extract the most prevalent service attributes (Park *et al.*, 2018), complaint behavior (Hu *et al.*, 2019), dimensions of service quality (Ding *et al.*, 2020), and satisfaction (Park *et al.*, 2020). To the best of the authors' knowledge, no studies have used STM for analyzing value propositions and value-in-use perceptions in the hospitality sector.

This project follows a so-called "light theory-driven" approach (Elragal and Klischewski, 2017), with data acquisition, pre-processing, data modeling, and interpretation guided by the selected theoretical framework. To reflect the social constructivist reality of value co-creation in the current study Smith & Colgate's (2007) consumption-values theory is (1) applied across value creation contexts (value proposition, value-in-use) (2) used as theoretical guidance for the semi-automated text analysis; (3) complemented by the value valence dimensions described in Sweeney *et al.* (2018) as data miming should not happen at the cost of theoretical foundations for the research (see Mazanec, 2020).

### **2.2.3. Value Assessment in Tourism**

There are decades of research on identifying relevant hotel attributes and their importance in customers' selection processes. A famous example is provided by Wind, Green, Shifflet & Scarborough (1989) who employ hybrid conjoint analysis to develop "Courtyard by Marriott". They included seven product attribute groups (external factors, rooms, food-related services, lounge facilities, services, facilities for leisure-time activities, and security)

with 200 facets and combined them with the actual needs of customer segments. Similarly, Callan (1998) finds location and image, price, competence, access, security, additional services, tangibles, service provider's understanding of the customer to be the most important value forming attributes. While the mentioned studies focus on the value proposition, i.e., identifying the most value-generating attributes from a service provider's perspective, recent studies employ text mining to provide further insights into value-in-use dimensions in user-generated content.

Value dimensions most frequently detected in the online reviews include location, amenities, service, food, value for money, and additional services (i.e. parking or spa) (Hu *et al.*, 2019; Mankad *et al.*, 2016; Yuan *et al.*, 2016). The majority of the reviews reflect on both tangible (i.e. dirty room) and intangible (i.e. unfriendly staff) dimensions of the hotel experience (Sparks and Browning, 2011).

Altogether the described dimensions are integral to customer satisfaction or dissatisfaction, service quality, value perceptions, and also impact hotel performance (Xie *et al.*, 2014). F. Hu & Trivedi (2020) demonstrate how these attributes extracted from online reviews can be used to benchmark hotels' efficiency compared to competitors. However, it is important to consider that the impact of the individual attributes is not constant but varies along the customer journey stages (Mankad *et al.*, 2016), among customers and across hotel types (Xie *et al.*, 2014; Xu, 2020). Xu (2018) found that guests of the one-two star hotels put much more weight on the value for money component of their stays than those staying in four- or five-star hotels. The opposite is true for the quality of room amenities (i.e., nice room), which is more decisive for guests of the four- or five-star hotels. While location or value for money are more salient before arrival and after departure, the quality of the amenities is the most relevant during the stay (Mankad *et al.*, 2016).

## 2.3. Methodology

### 2.3.1. Research Design

The study is conducted from a critical realist standpoint, combining "ontological realism, epistemological relativism and judgmental rationality" (Archer *et al.*, 2013). The ontological assumption of critical realism implies that reality is stratified into empirical (can be experienced directly or indirectly), actual (occurs independently from experience) and real (causal mechanisms that generate events in the actual and empirical level) domains (Danermark *et al.*, 2019). The causal mechanisms of the real domain cannot be apprehended directly, but they can be inferred through empirical investigation and theory construction (McEvoy and Richards, 2006). The resulting knowledge is contextual, mediated by theoretical preconceptions, experiences and perceptions. The SDL view of value as a perceptual construct implies its relativist nature. Value is not rigid but is phenomenologically determined by the beneficiary (i.e., customer) (Vargo & Lusch, 2008).

Structural topic modelling (STM) is employed to analyze value proposition communication and customer value-in-use in the hotel sector. The method has been applied across industries and research contexts to extract information and underlying patterns in large sets of documents, such as online reviews (Kirilenko *et al.*, 2018), Twitter posts (Junqué De Fortuny *et al.*, 2012), news entries (Lim & Maglio, 2018b), academic publication databases (Kuhn, 2018), or business reports (Babić Rosario *et al.*, 2016; Chevalier & Mayzlin, 2006; Ho-Dac *et al.*, 2013). STM is a part of a broader pool of topic modeling algorithms that, at their core, are computational versions of a thematic analysis used for automated coding of large collections of unstructured text (aka *corpus*) and identifying hidden themes (aka *topics*) (Ignatow & Mihalcea, 2017). STM is built around a relativist assumption that first, each topic reflects a distribution of words frequently co-occurring in the corpus; second, a document is the mixture of those words scattered across the topics (Roberts, Stewart, Tingley, *et al.*, 2014).

Assignment to the topics is done in an unsupervised manner that entails no assumptions regarding the thematic structure of the corpus (Ignatow & Mihalcea, 2017). The optimal number of topics ( $k$ ) is found through statistical procedures and heuristics, explained in the following section. In contrast to the more established LDA model, STM bears a significant improvement. It allows enriching the model with document-level metadata, affecting the distribution (*prevalence*) of the identified topics or the topical content (Roberts, Stewart, Tingley, *et al.*, 2014). Hence, STM supports knowledge creation across multiple contexts. For this study, STM facilitates the evaluation of alignment between value proposition communication and customer value-in-use evaluations. Further, we account for the valence of value sentiment (positive vs negative value-in-use). Finally, topics were aggregated into themes reflecting theoretical value structures (Smith & Colgate, 2007) and visualized in a value map to facilitate the identification of areas where interventions might be necessary (Figure 2.1.).

Accordingly, this study employs a systemic service evaluation strategy to assess value dimensions of the hotel experience from both providers' and customers' perspectives.

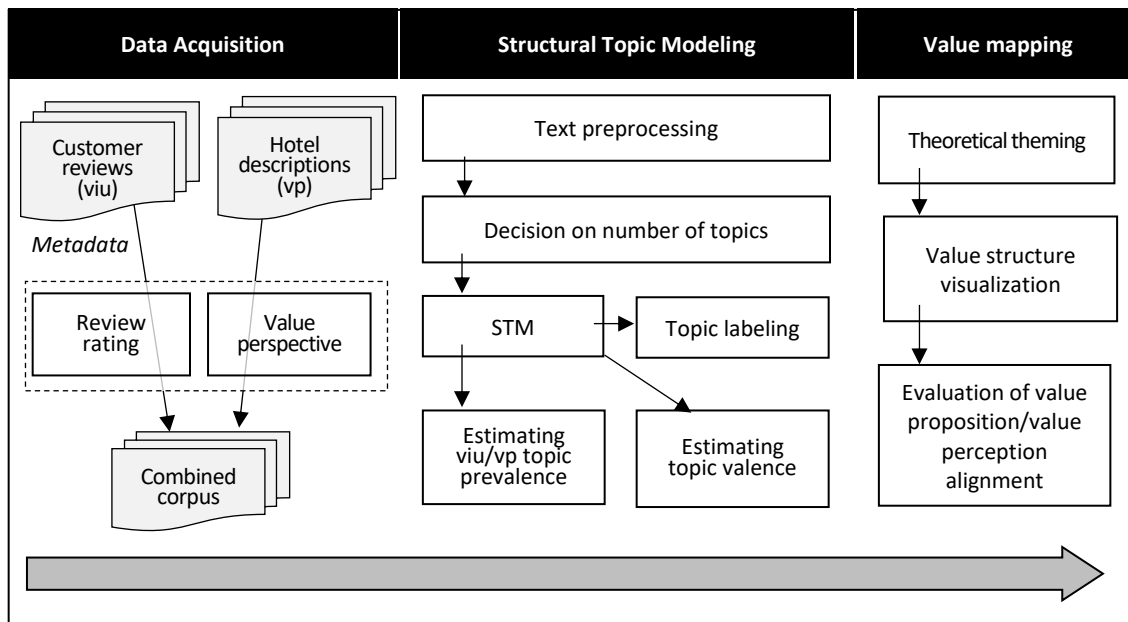


FIGURE 2.1 RESEARCH DESIGN

### **2.3.2. Data acquisition and pre-processing**

In line with the reviewed literature, value-in-use and value proposition are analyzed. Hence, two types of textual data are collected: official hotel descriptions for value proposition communication and online hotel reviews as an account of value-in-use perceptions. The dataset of online hotel reviews consists of 515,738 reviews of 1,493 four and five-star hotels in six European cities (Vienna, London, Amsterdam, Rome, Milan, Barcelona). Data are provided by the data science community Kaggle.com (Liu, 2018), where the file containing the reviews from the online travel agent Booking.com was hosted under commons license. The reviewer-level items include reviewer ID, the textual body of the reviews, numerical review ratings, hotel name, address, and reviewer nationality. Upon pre-processing, further explained in the following subchapter, the effective dataset consists of 17,372 reviews of 1,390 hotels from the mentioned cities. The texts for hotel descriptions were manually scrapped from the official websites of the 1,390 hotels from the customer review database. The descriptions are retrieved either from the starting page or in the "about" section of the hotel website when the start page contained visuals only. Since both customer reviews and hotel descriptions characterize the same experience, it can be argued that the core vocabulary used in both is comparable and can be used as constituents of one value evaluation dataset. Hence, the two datasets are collapsed into one dataset of 18,762 documents.

Given the unstructured nature of the obtained text documents, document preparation and pre-processing are essential. First, non-English documents and duplicates as well as reviews with less than 30 words are removed from the dataset. Then to explore the positive or negative sentiment (valence) of customer value-in-use perceptions, the 10-point review rating scale used by Booking.com is divided into three groups signaling of positive (8 to 10 points), negative (1 to 4 points), or average (5 to 7 points) sentiments of the customers. The latter are discarded from the analysis to reduce the dimensionality of the analysis and facilitate detection of the valence polarity (Fong *et al.*, 2016; Kotsiantis *et al.*, 2006;

Preacher *et al.*, 2005). Similarly, a study on Amazon.com shows that most reviews are either positive or negative rather than neutral (Hu *et al.*, 2006) and the average product rating is rarely indicative of the actual evaluation. The structure of the remaining dataset was significantly skewed towards reviews with positive sentiment. Hence, to prevent dataset imbalance (Kotsiantis *et al.*, 2006), the prevailing positive reviews are randomly under-sampled, which yields a balanced dataset of 17,372 reviews, including 8,372 negative and 9,000 positive ones.

Finally, text pre-processing, which includes normalization by lowercasing the text; removal of special characters (i.e., punctuation signs), numbers, stop words (i.e., *a*, *the*, *at*), sparse terms (words occurring in less than 10% of the documents) and stemming (reducing the words to the root forms, i.e., *run*, *running*, *runner* is reduced to *run*) are performed. Data preparation, pre-processing as well as subsequent STM analyses are all conducted in the R statistical environment (<https://www.R-project.org/>) using packages such as "quanteda", "textcat", "stm" and "stminsights".

### **2.3.3. Model Setup**

Decision on the number of topics for the model plays an essential role regarding the performance of the STM model and subsequent interpretation of the results. Whereas there is no truly objective way to determine the number of topics, several statistical techniques are used to identify the candidate models (Roberts, Stewart, Tingley, *et al.*, 2014). In this study, the optimal number of topics is identified as a tradeoff between semantic coherence and exclusivity. Both semantic coherence and exclusivity are maximization parameters. The former measures the frequency with which words occur and the pairs of words co-occurring in the corpus. The latter indicates the probability of words in one topic appearing in another topic. Upon running the test for models counting between 3 and 30 topics, the 15 topics model proves most promising (see Figure 2.2).



This parameter (k=15) is further used to run the model to estimate the underlying structure of value proposition versus value-in-use. The model is specified as follows (Equation 2.1<sup>2</sup>):

$$Prevalence_{d,k} = \beta_0 + \beta_1 \times source_d + \beta_2 \times valence_d + \varepsilon_d,$$

where  $Prevalence_{d,k}$  denotes the proportion of the  $k$ th topic in the  $d$ th review.  $Source_d$  indicates whether the text is a hotel description (value proposition) or customer review (value-in-use).  $valence_d$  is a measure of value-in-use valence expressed in customer review  $d$ . Reviews rated 1 to 4 points are coded as 0, marking negative value-in-use; those with 8 points and more are coded as 1, indicating positive value-in-use.  $\beta_0$ ,  $\beta_1$ ,  $\beta_2$  are the intercepts of the respective coefficients.  $\varepsilon_d$  is a summary of unobserved residuals or standard error terms. Using the standard R notation the topic model model can be illustrated as follows (Equation 2.2):

```
Prevalenced,k <- stm(documents = dataset$documents, vocab = dataset $vocab,
                    K = 15, prevalence= ~source, max.em.its = 75, data = dataset$meta,
                    init.type = "Spectral"),
```

where  $Prevalence_{d,k}$  denotes the proportion of the  $k$ th topic in the  $d$ th review. *Documents* are the individual reviews or hotel descriptions included in the analysis. The estimation of the topics prevalence of the topics accounts for the *source* of value attributes - a hotel description (value proposition) or customer review (value-in-use). The model is set to maximum of 75 iterations run with a Spectral initialization, recommended for structural topic modeling procedures (Roberts, Stewart, Dustin, *et al.*, 2014).

The effect of the source and the valence of value are estimated in two rounds using estimateEffect function from the stm package. We first estimated the effect of the source of value (Equation 2.3):

```
Source_effect <- estimateEffect(~source, stmobj = Prevalenced,k, metadata = dataset$meta,
                              uncertainty = "Global")
```

We ran the same procedure to estimate the value valence (*valence*):

```
Valence_effect <- estimateEffect(~valence, stmobj = Prevalenced,k, metadata =
                              dataset$meta, uncertainty = "Global")
```

---

<sup>2</sup> Adopted from Schmiedel *et al.* (2018)

*Valence* is a measure of value-in-use valence expressed in customer reviews. Reviews rated 1 to 4 points are coded as 0, marking negative value-in-use; those with 8 points and more are coded as 1, indicating positive value-in-use.

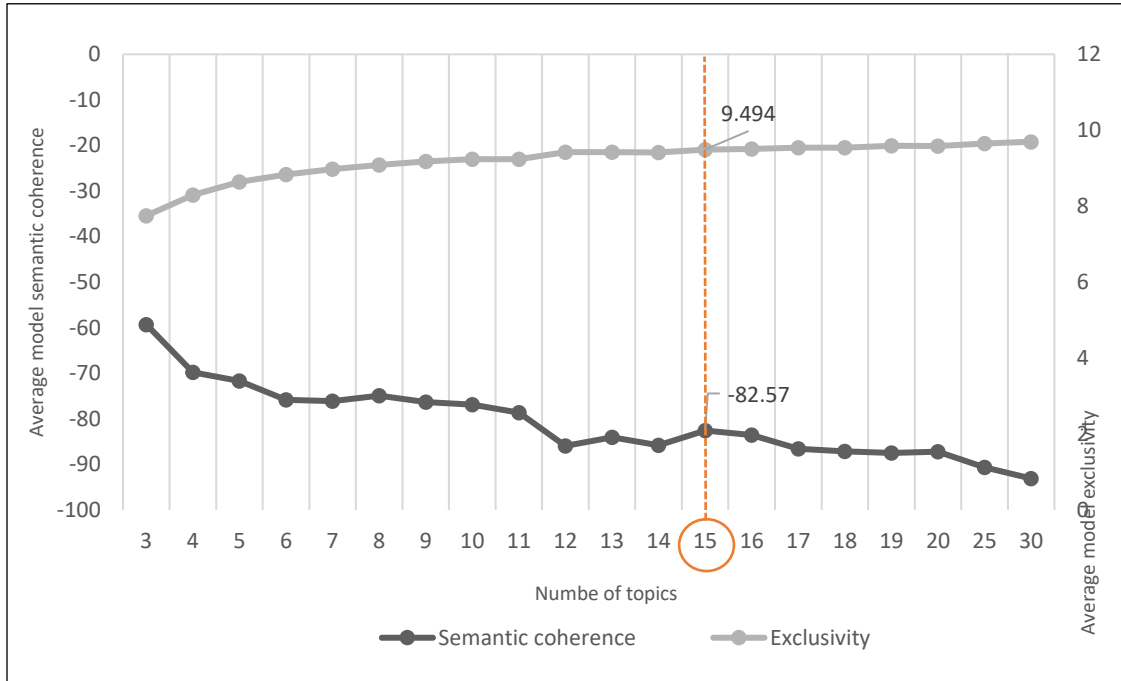


FIGURE 2.2 STATISTICS FOR OPTIMAL NUMBER OF TOPICS

## 2.4. Results

### 2.4.1. Dimensions of Hotel Value

Following the procedures described in sections 3.2 and 3.3., we identify 15 meaningful topics in our data. We then assign the labels based on the FREX (frequency-exclusivity) statistics, which weighs words regarding their frequency and exclusivity to the given topic (Roberts, Stewart, Tingley, *et al.*, 2014). The results with references to the extant literature, summarized in Table 2.1., convey that *Staff (praise)* (12.1%) and *Payment* (11.2%) are the most prevalent themes in the text corpus; followed by *Problem solving potential* (8.8%), *value for money judgments* (8.4%), *Location* (8.4%), *Comfort* (7.1%) and *Staff (criticism)* (7.0%). *Room facilities* (3.8%), *Check-in/Check-out problems* (3.3%), and

*Maintenance problems* (2.9%) are the least common in either value-in-use reflections or value proposition communications.

TABLE 2. 1 TOPIC SUMMARY AND LABELING

TOPIC LABEL	TOPIC PREV.	TOP 10 WORDS (FREX CRITERION)	REFERENCES
<b>Staff (praise)</b>	12.1%	staff, great, friend, help, love, stay, locat, excel, perfect, everyth	(Callan, 1998; Hu <i>et al.</i> , 2019)
<b>Payment</b>	11.2%	get, day, ask, pay, time, say, tell, take, come, leav	(Callan, 1998; Hu <i>et al.</i> , 2019; Wind <i>et al.</i> , 1989; Xu, 2018)
<b>Problem-solving</b>	8.8%	room, small, bed, clean, floor, move, chang, get, tini, put	(Callan, 1998; Hu <i>et al.</i> , 2019)
<b>Value for money</b>	8.4%	good, locat, realli, price, much, clean, quit	(Callan, 1998; Mankad <i>et al.</i> , 2016)
<b>Location</b>	8.4%	walk, station, locat, close, minut, park, citi, near, metro, central	(Hu <i>et al.</i> , 2019; Mankad <i>et al.</i> , 2016; Xu, 2018)
<b>Comfort</b>	7.1%	bed, nice, comfort, room, bathroom, shower, bite, area, lang, quiet	(Callan, 1998; Hu <i>et al.</i> , 2019; Xu, 2018)
<b>Staff (criticism)</b>	7.0%	staff, bad, receipt, sservic, stay, never, noth, experi, rude, ever	(Callan, 1998; Xu, 2018)
<b>Cleanliness</b>	6.3%	star, like, old, bathroom, poor, dirti, shower, look, room, place	(Callan, 1998; Hu <i>et al.</i> , 2019; Wind <i>et al.</i> , 1989; Xu, 2018)
<b>Executive service</b>	6.0%	room, offer, suit, guest, service, meet, enjoy, citi, view, can	(Hu <i>et al.</i> , 2019; Wind <i>et al.</i> , 1989)
<b>Noise</b>	5.4%	night, air, window, door, sleep, open, next, nois, morn	(Hu <i>et al.</i> , 2019; Xu, 2018)
<b>Booking</b>	4.7%	book, room, doubl, com, night, two, request, reserve, avail, rate	(Callan, 1998; Hu <i>et al.</i> , 2019; Wind <i>et al.</i> , 1989; Xu, 2018)
<b>F&amp;B</b>	4.6%	breakfast, restaur, food, include, choic, excel, eat, buffet, fresh, serv	(Callan, 1998; Hu <i>et al.</i> , 2019; Wind <i>et al.</i> , 1989; Xu, 2018)
<b>Room facilities</b>	3.8%	bar, free, facil, coffee, drink, tea, room, make, use, provid	(Hu <i>et al.</i> , 2019; Mankad <i>et al.</i> , 2016; Wind <i>et al.</i> , 1989)
<b>Check-in/ check-out</b>	3.3%	check, people, front, hour, desk, late, earli, inform, see, room	(Callan, 1998; Wind <i>et al.</i> , 1989; Xu, 2018)
<b>Maintenance problems</b>	2.9%	work, room, wifi, condit, water, hot, cold, internet, connect, warm	(Callan, 1998; Hu <i>et al.</i> , 2019; Wind <i>et al.</i> , 1989)

The identified hotel attributes reflect the three types of value as per Smith & Colgate (2007): functional, experiential, and cost-sacrifice. Functional value dimensions are reflected by eight topics (*Executive service, Comfort, Maintenance, F&B, Cleanliness, Room facilities, Problem solving* or *Location*) and comprise 47.9% of the overall value narrative

followed by the cost-sacrifice value consisting of six topics (*Payment, Booking, Noise, Check-in/Check-out or Staff (criticism)*) making up 40% of the narrative. Finally, experiential value (*Staff (praise)*) accounting for 12.1% of volume.

### 2.4.1.1. Value-in-use vs Value Proposition Prevalence

In the following, we compare value-in-use and value propositions by regressing topics proportions over the source of the textual data – online reviews versus hotel descriptions. Figure 3(a) shows topics that are more likely to appear in customer reviews compared to hotel websites. Dots mark the mean values of the estimated differences; the horizontal lines indicate the 95% confidence intervals of the topics to be represented in value-in-use versus value proposition narratives. The themes *Staff (praise)* or *Payment* is 8.6% and 8.7%, respectively, higher for value-in-use reflections compared to value propositions. Hence hotel guests are more likely to reflect on the positive interactions with hotel employees and their problem-solving skills and report on issues pertinent to payment as well as value for money.

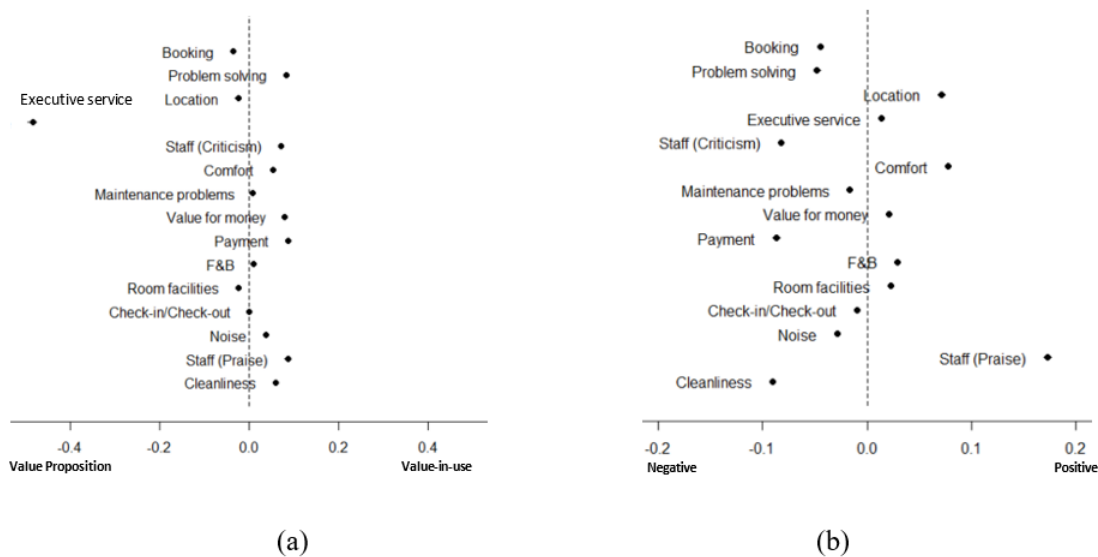


FIGURE 2.3 PREVALENCE OF VALUE DIMENSIONS: (A) VALUE-IN-USE VERSUS VALUE PROPOSITION NARRATIVES; (B) POSITIVE VERSUS NEGATIVE VALUE SENTIMENT

As per Figure 2.3(a), only four value dimensions: *Executive service*, *Booking*, *Location*, and *Room facilities* are more likely to appear in the value proposition narratives compared to value-in-use reflections. *Check-in/Check-out experience* was equally mentioned by both hotels and their guests.

#### **2.4.1.2. Valence of Value**

Next, we evaluate whether the value dimensions are more likely to be mentioned with positive or negative valence (Figure 3(b)), following the same approach as above. For *Staff (praise)*, the estimated proportion of positive reviews is almost 19% higher than negative reviews. Hence, it is more likely that *Staff (praise)* conveys positive value sentiment. On the other hand, *Payment* is 8.7% more likely to be associated with a negative value narrative.

Out of the 15 value dimensions, six are more likely to be mentioned with positive sentiment. These are *Staff (praise)*, *Comfort*, *Location*, *Executive service*, *Comfort*, *F&B*, *Room facilities*, and *Value for money*. The remaining nine dimensions (*Cleanliness*, *Payment*, *Staff (criticism)*, *Problem solving*, *Booking*, *Noise*, *Maintenance problems* and *Check-in/Check-out*). The distribution between positive and negative value narratives is also evident in the correlation plot (Figure 2.4), which indicates the strength of the relations among the identified value dimensions.

#### **2.4.1.3. Sources of Value**

Finally, another lens to understand the value forming process is looking at the elements of the hotel experience value chain, where the evaluated attributes stem from. Using Smith & Colgate's (2007) value framework, we grouped the identified value dimensions based on their source within the value chain. According to the data analyzed, the value of the hotel experience stems from either– the hotel product itself, interactions with the employees, environment and the process of ownership transfer, that include six, three, two and four value dimensions respectively. The results indicate that six out of 15 attributes are associated with the product itself: *Room facilities*, *Executive service*, *Comfort*, *Maintenance*, *Cleanliness* and *F&B*. These topics comprises 66% of the value proposition narrative in contrast to 28.8% of the value-in-use reflections. The opposite is observed for interactions

(with attributes *Staff (praise), Problem-solving*) amounting to 28.8% of the value-in-use and only 4.6% in value propositions narratives. The distribution of attributes describing the environment (*Location, Noise*) or ownership transfer (*Booking, Value for money, Payment, Check-in/Check-out*) was similar across the value domains.

Figure 2.5 summarizes the presented findings and illustrates the complex structure of the hotel experience value from both customer and business perspectives.

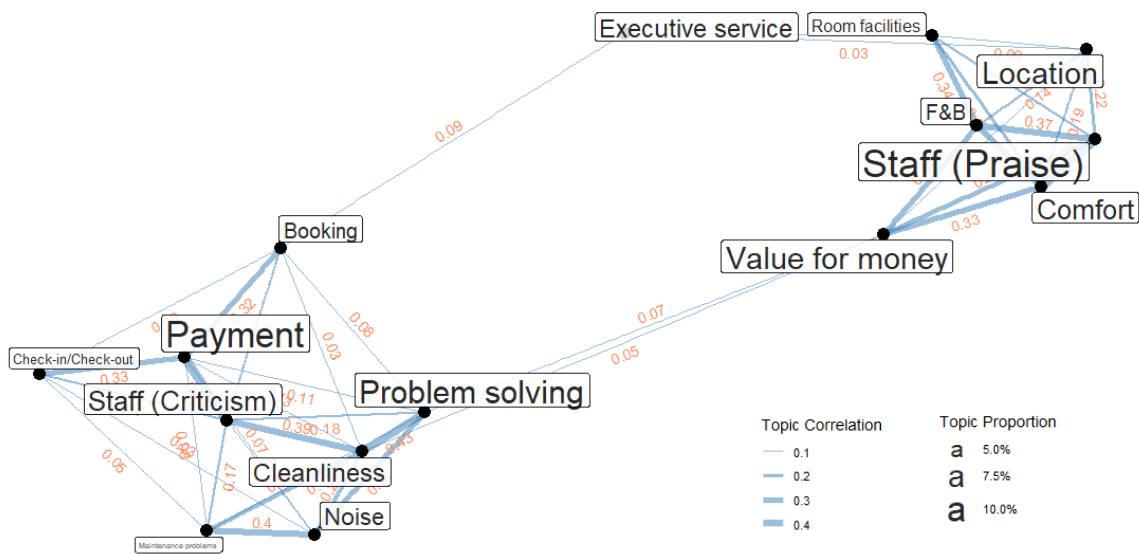


FIGURE 2. 4 CORRELATION PLOT

## 2.5. Discussion and Implications

The structure of the value-forming elements presented in this study is in line with prior research. All of the topics were previously reported in literature employing either traditional methodologies (Dolnicar, 2003; Wind *et al.*, 1989) or text-mining (N. Hu *et al.*, 2019; Mankad *et al.*, 2016; Xu, 2018). This supports the validity of STM for discovering content in unstructured online corpora. However, the importance and valence of service elements vary. Previous literature found the location, problem solving (Hu *et al.*, 2019), check-in and check-out experiences (Guo *et al.*, 2017), and staff friendliness (Dolnicar, 2003) to be the most prominent in value-in-use reports of hotel guests.

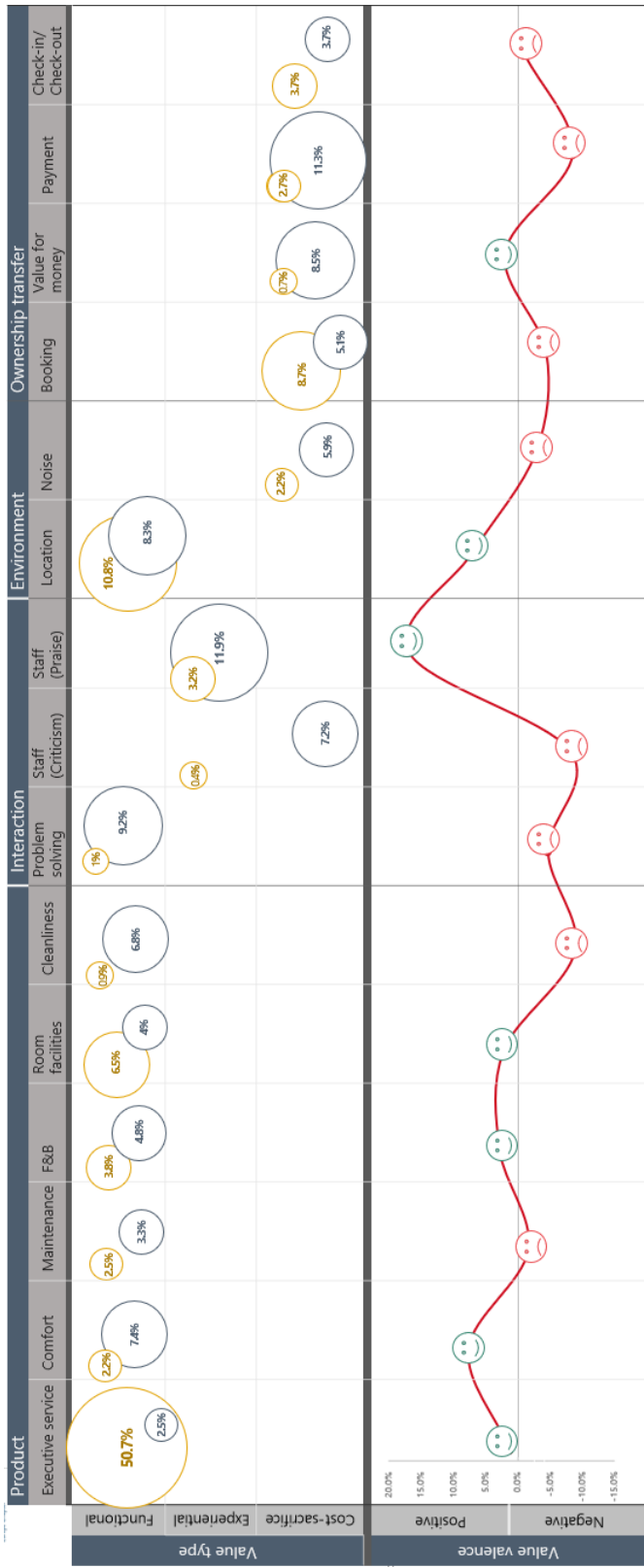


FIGURE 2.5 HOTEL EXPERIENCE VALUE MAP

In contrast, we discovered positive interactions with hotel employees (*Staff (praise)*), the payment experience, and problem-solving to dominate the overall narrative, as well as value-in-use perceptions. In comparison, value propositions were developed around the quality of the executive service offering, location, and the convenience of the booking process.

Our findings on the overall valence of hotel attributes are in line with previous research. However, the prevalence of topics differed. While N. Hu et al.(2019), Xu (2020) found the location to be the most common positive service attribute, our results indicate that *Staff (praise)* is the most common topic associated with positive hotel evaluations, this is in line with Büschken & Allenby (2016). Research advocates a strong association between the experiential value and positive service evaluations, like satisfaction (Xu, 2018) or behavioral intentions (Wu *et al.*, 2018). This is reflected by the dominance of the *Staff (praise)* attribute also in the value-in-use perceptions. However, the studied value propositions fail to communicate the promise of potential experiential value, focusing instead on the functional component of the offering. This represents the most significant gap between the value-in-use and value proposition narratives.

Applying a value-chain lens, we can see that interactions and ownership transfer are the elements of the experience most prone to negative evaluations. Unlike the environment (i.e., location, noise), the quality of these elements is under the full control of the service provider (Guo *et al.*, 2017). Hence it is up to the management of the hotel to ensure a flawless ownership transfer experience (*Booking, Payment, Check-in/Check-out*) or introducing the procedures to encourage proactive recovery of the occurring service failures. Such an approach has proven to be effective in mitigating negative outcomes (Browning *et al.*, 2013). A similar approach could be applied to the issues that pertain to the uncontrolled elements like external noise (*Noise*) or accessibility (*Location*) of the hotel; the management should think of preventive measures, i.e., informing hotel guests of potential disruptions or inconveniences.



## 2.6. Conclusions and Limitations

The proposed study suggests and implements a systematic semi-automated framework for value proposition evaluation. The study investigates the structure of value from both business and customer perspectives. The identified value-forming elements reflect functional, experiential, symbolic, and cost-sacrifice types of value related to the hotel product itself, the environment, interactions, ownership transfer, and experience as a whole (Smith and Colgate, 2007). Building on current theoretical developments, this study contributes to the theory in various ways. First, the results enhance an understanding of the composite and prevalent structure of value from multiple perspectives. Second, the study validates STM as a methodological approach to service evaluations and systematic value monitoring. Evaluating the alignment of value-forming elements across the two perspectives generates insights into the coherency of the value proposition narrative with the perceptual understanding of valuable hotel experiences of customers.


From a managerial standpoint, the proposed service evaluation approach is helpful for assessing strengths and weaknesses in the value proposition communication, revealing the areas for service redesign interventions. The nature of the data used and the semi-automated approach to analysis can be an incentive for implementation of an ongoing learning-design-change cycle – a so-called value monitoring system to a) assess business performance, b) predict customer reaction to service value redesign, c) facilitate proactive reaction on potential service failures, and once again d) evaluate the effectiveness of measures.

Consistent with previous research (Dolnicar, 2003; Hu et al., 2019; Wind et al., 1989) investigating hotel experiences, customers pay attention to a range of functional, experiential, and cost-sacrifice attributes related to the experience with the core product, service interactions, environment, and ownership transfer. The findings reveal the existing gap between the perception and communication of the hotel's value proposition. For example, while hotels tend to emphasize executive service and the location as the unique selling point (approx. 50.8% and 10.8% of hotel discourse), customer evaluations are more

influenced by the quality of employee interactions (approx. 19% of customer discourse). Overseen in value proposition communication, the latter is pivotal for facilitating both positive and negative value-in-use perceptions.

Despite the merits of the study, there are also some limitations. First, these are related to the data collection procedure and the nature of the data in the final sample. Value proposition and value-in-use analyses are based on a dataset of textual hotel descriptions and online reviews. Furthermore, other forms of data, i.e., visual content and other sources of data, i.e., online advertising, press releases, or customer reviews from other platforms, are not considered. This could lead to oversight of significant value-related insights and limit the generalizability of the findings. Additionally, for performing value proposition evaluations, this study relies on the mean-difference approach. Future studies might investigate the performance of the suggested approach against other, i.e. Jason-Shanon divergence, etc.

Second, the extant literature emphasizes that online reviews, used for assessing customer perceived value, are subject to self-selection (Li, Hitt, 2008, Hu, Pavlou, Hang 2017) and response bias. Customer online evaluations of the service experiences could be framed by personality traits, i.e., technological efficacy or propensity to complain, and influenced by situational factors (Choi, 2016; Aral, 2013), i.e., peer-pressure or time of review. However, these limitations offer avenues for future research.



# **Study 3. Please Forgive me: Victims versus Observers Perspective on the Service Recovery Process.**

## **Abstract**

This study delves into the customers' reactions to the service failures and recovery (SFR) experiences in the hotel context. The study is designed as a 2x2x3 scenario-based experiment. The prior service failure experiences, harm direction, and service recovery actions are manipulated to test the role of prior service failure and recovery experiences as well as service recovery actions on forgiveness. Furthermore, the link between forgiveness and service failure and recovery expectations among victims and observers of failure and recovery incidents is assessed. The results suggest that negative SFR experiences boost customers' failure expectations before the experience, which in turn compromises decisional forgiveness of service failure incidents. While the reported effect is stronger for the observers, only victims of the service transgressions significantly update these expectations upon manipulated SFR. Moreover, service recovery actions disproportionately affect emotional and decisional forgiveness among victims and observers. While apology and compensation were the most effective strategies among both groups, the effect was higher for observers than victims. Surprisingly, only observers reported increased emotional forgiveness associated with service recovery, precisely a combination of apology and excuse. Hence, the study confirms the spillover effect of both tangible and psychological service recovery actions on customers not directly affected by the service transgression. Given the capacity of the psychological recoveries, such as an apology and

excuse to facilitate emotional forgiveness among observers, service providers should pay special attention to the training of the frontline staff, as well as creating welcoming and friendly climate throughout the customer journey.

**Keywords:** service recovery, forgiveness, expectations, service failures

### 3.1. Introduction

Services are prone to failures. Whether dining out, staying in a hotel, checking in for a flight, or going for routine grocery shopping, customers often suffer from poor service themselves or witness other customers being mistreated (Shin *et al.*, 2018). While mistakes are sometimes unavoidable, ensuring effective service recoveries is a feasible strategy for a good service provider (Babin *et al.*, 2021). Unsurprisingly, service and marketing scholars have been concerned with customers' reactions to companies' service recovery efforts following service failures and factors promoting or inhibiting these reactions (Schoefer & Diamantopoulos, 2008; Sparks & Fredline, 2007).

The effectiveness of service recovery actions (SRA) is mainly studied in terms of perceived justice, satisfaction, or behavioral outcomes, such as negative word-of-mouth or repurchase intentions (Mattila, 2001a; Mccoll-Kennedy & Sparks, 2003; Sparks & McColl-Kennedy, 2001; Tax *et al.*, 1998; Wirtz & Mattila, 2004). At the same time, a growing number of research recognize forgiveness as a valuable outcome of service failure and recovery (SFR) experiences (Babin *et al.*, 2021; Tsarenko *et al.*, 2019; Tsarenko and Tojib, 2012).

Forgiveness is described as a coping strategy aimed at transforming negative emotional, cognitive, and behavioral reactions to service failure and recovery (SFR) incidents into positive ones (McCullough *et al.*, 1998; Tsarenko *et al.*, 2019). Hence, it is instrumental for encouraging positive evaluations and reestablishing trustful relationships with a service provider (Fedorikhin *et al.*, 2008; Forster *et al.*, 2020; Tsarenko *et al.*, 2019; Xie and Peng, 2009). Early findings suggest that companies can facilitate forgiveness by employing psychological (i.e., apology, explanation) and tangible (i.e., compensation) recovery

strategies. However, the effect of the strategies varies. For example, customers were more forgiving after hearing a sincere apology for the transgression than when receiving monetary compensation (Harrison-Walker, 2019; Wei *et al.*, 2020; Xie and Peng, 2009). Additionally, Ohtsubo *et al.* (2018) found that a combination of several recovery actions resonates with customers more than any of those alone. However, this area remains largely understudied.

While forgiveness describes the reaction to current service interactions, those are not isolated from the previous service experiences. Instead, emotions and knowledge from past interactions translate into service expectations that are incorporated in the evaluation and decision processes (Boulding *et al.*, 1993; Holak *et al.*, 1987; Jacobson and Obermiller, 1990). Service expectations describe the anticipated future service, together with associated benefits (service recovery expectations) and regrets (service failure expectations) (Lemon *et al.*, 2002; Zeithaml *et al.*, 1993). As such, every new experience contributes to updating expectations, resulting in a service experience continuum (Boulding *et al.*, 1993; Lemon *et al.*, 2002; Oliver, 2014; Weun *et al.*, 2004). Typically, negative experiences result in a higher increase compared to positive ones (Kahneman & Tversky, 2013; Rozin & Royzman, 2001). “Experience” in this context is referred to as a collection of moments or events along the customer journey. Considerable research focuses on the salience of these moments in remembering and forming expectations for the experiences (see Ariely & Carmon, 2003; Ariely & Garmon, 2000; Heath & Heath, 2017; Kahneman, 2011; Pearce, 2020; Stienmetz *et al.*, 2021). However, this issue falls beyond the scope of the current study. Nevertheless, accounting for the temporal dimension during service failure and recovery (SFR) research may provide valuable insights into the service failure consequences and how SFR experience interrelates with the regular customer journey and vice versa (Van Vaerenbergh *et al.*, 2019).

Finally, SFR experiences are commonly investigated through the optics of those directly involved, e.g., victims and employees accountable for the problem and/or recovery actions (Gelbrich and Roschk, 2011; Lewis and McCann, 2004; Roschk and Gelbrich, 2014; Van Vaerenbergh and Orsingher, 2016; Wirtz and Mattila, 2004) For those services that are

delivered publicly, the obvious question is whether the observed consequences of SFR experiences extend to other actors, such as fellow customers, employees, or random by-passers (aka *social-servicescape*). While several studies have previously integrated other customers into the service experience frameworks, the focus was mainly on the impact presence of others has on focal customers' behavior (Belk, 1975; Grove and Fisk, 1997; Huang and Wang, 2014). Only a handful of studies explored spillover effects of the SFR processes on the experiences of witnesses or passive *observers*. For example, observing injustice towards a fellow customer was found to negatively impact one's mood (Mattila et al., 2014), service evaluations (van Vaerenbergh *et al.*, 2013), and behavior, such as negative word-of-mouth intentions (Casidy and Shin, 2015). At the same time, witnessing the effort by the service provider to recover from the failure may have a soothing effect (Sharifi *et al.*, 2017). Unfortunately, the degree to which these affect evaluations and behavior and the possible moderators are yet to be discovered. Given the scope of those passively observing SFR experiences compared to actual victims, the potential negative impact of service failures may be immense.

Against this backdrop, the purpose of this research is fourfold. First of all, it aims to further the existing knowledge by examining the i) relative effect of SRA on customer forgiveness. Further, the focus is shifted to the ii) role of prior experiences in setting service failure and recovery expectations of the hotel experiences and iii) to what extent do customers update their expectations upon failed and recovered hotel experiences. Moreover, this study investigates whether the harm direction during the service failure incident (victim vs. observer) moderates iv) the effect of SRA in terms of forgiveness.

The remainder of the study is structured as follows. The main theoretical concepts are presented in the literature review. The following part describes the research design, methodological approach to data collection, and analysis. Then the study proceeds with the research results, discussion, and conclusions. Finally, limitations, suggestions as to managerial implications, and future research are conferred.

## 3.2. Theoretical Background and hypotheses development

### 3.2.1. Organizational responses to service failures

No one is perfect. Hence failures are pretty common across the service sector. Service recovery actions undertaken by a service provider in response to dissatisfaction with service or its elements aim at mitigating damaging effects of service failure experience and restoring favorable attitudes towards the company (Koc, 2019; Miller *et al.*, 2000). It is service recovery that facilitates forgiveness and contributes to customers' expectations.

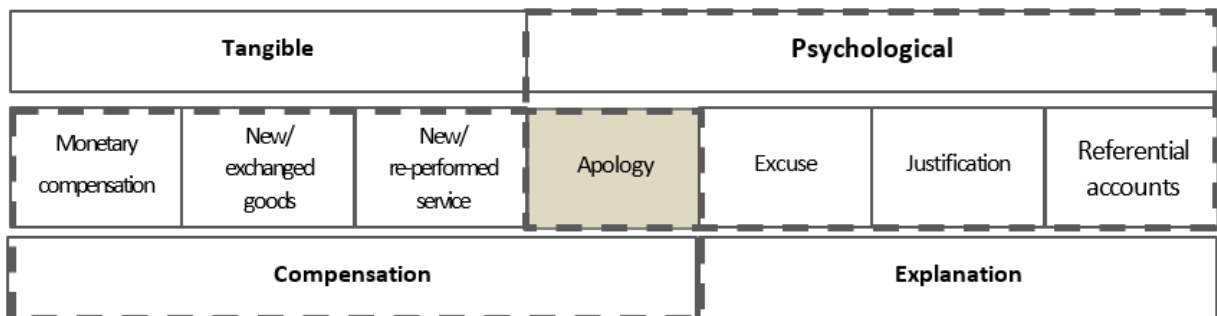


FIGURE 3. 1 TYPOLOGY OF ORGANIZATIONAL RESPONSES TO SERVICE FAILURES  
(BASED ON FOLGER & CROPANZANO, 1998; ROSCHK & GELBRICH, 2014)

Organizational responses to service failures take two forms: tangible and psychological (Miller *et al.*, 2000) (Figure 3. 1). *Tangible* service recovery strategies include providing economic and financial benefits as restitution for the failed service experiences. Companies may offer monetary compensation in the form of a voucher, credit for future service experiences, discounts, or reimbursement (Roschk and Gelbrich, 2014). Alternatively, the damaged goods can be exchanged for the new one or the service re-performed. *Psychological* recovery refers to an affective reaction to a customer's distress (Liao, 2007; Miller *et al.*, 2000), expressed through apology, excuse, justification, or by providing a referential account. *Apology*, the most common psychological recovery strategy, is a form of psychological compensation describing "a regretful acknowledgment of service failure" ("Apology | Meaning of Apology by Lexico", n.d.). In its basic understanding, an apology is a minimum requirement for the customer-centric service (Dasu and Rao, 1999). It signals

to the customer that the service provider accepts the responsibility for service transgression and intends to recover the situation (Hareli and Eisikovits, 2006; Kim *et al.*, 2004). Hence, customers who received apologies are more inclined to forgive the oppressor (Riek and DeWit, 2018). *Excuse* refers to the service provider's attempts to shift the responsibility for the service failure to the external cause. (Sparks & Bradley, 2017). Unlike excuse, justification entails acceptance of the responsibility, which is followed by the reasons condoning dissatisfactory service experience outcome (Folger & Cropanzano, 1998; Sparks & Bradley, 2017). Finally, the referential account is a strategy to minimize the perceived gravity of service failure by invoking downward comparison (Bradley & Sparks, 2012, p. 41). For example, a service provider might inform the affected customer that their situation is better than that of other customers (Wang *et al.*, 2009).

Apologies and monetary compensations remain the most widely studied service recovery strategies (Casidy and Shin, 2015; Grewal *et al.*, 2008; Mattila, 2001a; Wirtz and Mattila, 2004). While overall found to be effective for mitigating the effect of service failure, the effectiveness depends on the magnitude of the service failure incident (Sparks & Fredline, 2007; Weun *et al.*, 2004), type of service (Sparks & Bradley, 2017), history of prior relationship (Ha and Jang, 2009; Holloway *et al.*, 2005), and whether the customer was affected or observed the service incident (Sharifi *et al.*, 2017). For example, Sharifi *et al.* (2017) emphasized that apologies and low compensations are compelling only for those directly involved in the failure incidents, not for observers. These differences are elaborated more in the following sections of this study.

When it comes to other strategies, research remains fragmented, and results are often inconsistent. For example, some studies report that excuses outperform justifications or referential accounts in their capacity to elicit favorable service evaluations (Bradley and Sparks, 2012; Shaw *et al.*, 2003), while other researchers argue the contrary (Conlon and Ross, 1997). Hence in this study, an excuse is used as an example of a psychological recovery strategy.

Notably, several studies demonstrate the superiority of combined or hybrid strategies over single tangible or psychological recovery actions (Bitner, 1990; Mattila, 2001b; McDougall



and Levesque, 2000; Wirtz and Mattila, 2004). For example, Bitner (1990) emphasized that despite general efficiency, offered alone compensation may be perceived as a service provider's attempt to buy itself out from the transgression. Hence, such a strategy alone may fail to evoke positive evaluations. Additionally, Mattila (2001) and McDougall & Levesque (2000) found that a combination of apology and compensation is more effective for restoring customer satisfaction than apology alone. Similar effects were found by Casidy & Shin (2015), indicating that hybrid recovery strategies are more effective in inhibiting negative word-of-mouth and facilitating forgiveness (Casidy and Shin, 2015). Notably, no studies examined the effectiveness of hybrid psychological strategies (i.e., apology and explanation) compared to the individual strategies or hybrid strategies with tangible elements. The gap is addressed by the current study.

### **3.2.2. Customer service failure and recovery expectations**

Research suggests that the success of service recovery is associated with expectations customers have before commencing their experience journeys (Kelley and Davis, 1994; Wallin Andreassen, 2000). What is more, Oliver (1997, p. 68) suggested that “the expectations, not the needs” push consumers’ to engage with the service and guide their emotional and behavioral reactions, including post-failure responses during the experience (Choi and Mattila, 2008). Unsurprisingly, service expectations are listed among the main predictors of consumer behavior. Service expectations describe customers' anticipations of how the service *should* and *will* perform (Boulding *et al.*, 1993). Should expectations relate to the normative service standards and are often explained with the gap-based service-quality model (Parasuraman, A. Zeithaml and Berry, 1994). Will-expectations reflect the subjective predictions of the performance based on the disconfirmation logic (Oliver, 1980). These predictions pertain to the overall service outcomes (i.e., *service expectations*), but also describe the anticipated risk or potential regrets associated with the service process – *service failure expectations* (Murray and Schlacter, 1990); along with the expected quality of subsequent company's reaction to eliminate the associated harm – *service recovery expectations* (Lemon *et al.*, 2002; McCollough *et al.*, 2000). From the will perspective, recovery expectations are used to benchmark the acceptability of the offered

failure recovery (McCollough *et al.*, 2000). Should-expectations describe the norm - a service quality standard. Hence they are relatively stable.

In contrast, will-expectations mirror living experiences and are updated upon each service encounter in a post-service stage or even during the experience (Oliver 1997, Yi & La, 2004). Will and should expectations are contingent upon service-related components, such as communicated value proposition, and subjective factors, such as personal needs or prior experience with the service or relationships with the service provider as well as situational factors (Kelley & Davis, 1994; McDougall & Levesque, 2000). The process of revising service failure and recovery expectations is ongoing and bridges subsequent experiences with one another. Hence this study looks into the role of prior experiences in expectation formation, as detailed in section 3.3.2.5.

### **3.2.3. Forgiveness**

Customers' judgments of the effectiveness of service recovery efforts reflect their ability to process negative emotions elicited by service failure incidents. Forgiveness is the internal coping strategy that develops as a reaction to the discrepancy between expectations and experience (Joireman *et al.*, 2016). Forgiveness describes the process of letting go of "vengeful thoughts and feelings towards (service) providers in the aftermath of service transgression" (Tsarenko *et al.*, 2019, p. 1). Processing of the negative feelings brought up by service failures happens on two forgiveness levels: emotional and decisional forgiveness (Worthington & Scherer, 2004). *Emotional forgiveness* "is the replacement of negative unforgiving emotions with positive other-oriented emotions" (Worthington *et al.*, 2007, p. 291), while *decisional forgiveness* "is a behavioral intention statement that one will seek to behave toward the transgressor like one did prior to a transgression" (Worthington & Scherer, 2004, p. 386). Notably, one's decision to forgive does not necessarily coincide with the ability to let go of the emotional grudge. A victim may first consciously choose to forgive, which would help cope with the stress, obtain greater perceived control over the transgression situation, and lead to emotional forgiveness (VanOyen Witvliet *et al.*, 2001;

Worthington et al., 2007). In contrast, a person may first feel emotional relief and change their behavior thereof (Worthington et al., 2007; Worthington and Scherer, 2004).

Due to the experiential nature of services, emotions are often found to be central to evaluations of service as a whole as well as recovery efforts that facilitate behavioral intentions (Bonifield and Cole, 2007; Gelbrich, 2010; Romani *et al.*, 2012; Su *et al.*, 2018). For example, the anger erupting at the transgression moments indicates a lack of forgiveness (Worthington and Scherer, 2004) and instead facilitates confrontative coping (Frijda, 1987; Gelbrich, 2010). As such, angry or frustrated consumers are more likely to evaluate the service experience negatively and resort to vindictive behavior such as complaining (Su *et al.*, 2018) or negative WOM (Bonifield and Cole, 2007; Gelbrich, 2010).

The concept of forgiveness is well-established in philosophy (Hughes, 1995; North, 1987) and psychology (Berry *et al.*, 2005; McCullough *et al.*, 1998) but is still relatively new to services and marketing research (i.e., Babin et al., 2021b; Casidy & Shin, 2015; Hur & Jang, 2019; Suri et al., 2019; Tsarenko & Tojib, 2015). Early results indicate the capacity of forgiveness to promote satisfaction, service patronage intentions (Harrison-Walker, 2019), reestablish trust (Xie and Peng, 2009) while discouraging customers from engaging in negative publicity (Harrison-Walker, 2019; Strizhakova *et al.*, 2012) or revenge behavior (Johnson *et al.*, 2011; Joireman *et al.*, 2013; McColl-Kennedy *et al.*, 2015). However, while activating forgiveness appears to be instrumental for successfully restoring the customer-company relationships upon service transgressions, the literature on the effectiveness of the various recovery strategies for reinforcing forgiveness remains scarce (Casidy and Shin, 2015; Shin *et al.*, 2018; Wei *et al.*, 2020).

#### **3.2.4. Customer role during service failure and recovery experience: victim versus observer**

The literature elaborates on the far-reaching consequences of SFR for both affected customers (further *victims*) and the companies. Failed experiences cause customers distress, which they express through dissatisfaction, complaining, negative word of mouth, or quitting service altogether. Companies may soothe such reactions by offering an

adequate recovery to the hurt consumer (i.e., Bougie et al., 2003; Grewal et al., 2008; J. Ha & Jang, 2009; Joireman et al., 2013; Mattila, 2001; Wirtz & Mattila, 2004). Since service often happens in public settings, multiple customers and simple by-passers have the opportunity to observe the delivery process and witness SFR incidents. While not as strong as for direct victims (Casidy and Shin, 2015; Sharifi *et al.*, 2017), the effect of SFR processes may be far more outreaching. However, the research of the reactions and consequences SFR incidents have on those indirectly involved in the service process (further in this study as *observers*) remains scarce. Indeed, even fewer studies have examined victims' reactions and those of observers (Sharifi *et al.*, 2017; van Vaerenbergh *et al.*, 2013).

The extant literature finds that observed SFR experiences lead to negative observers' reactions who instinctively view injustice with the victim's eyes (Galinsky *et al.*, 2008). Such reactions are well-explained by the principle of deontic justice – an inherent commitment to fairness and renunciation of injustice (Cropanzano, Goldman and Folger, 2003). In support of this claim, Van Vaerenbergh et al. (2013) found that witnessing unfair service recovery by a front desk employee resulted in lower service evaluations (satisfaction and service quality) and willingness to return to the hotel. Similar findings were confirmed by Mattila et al.(2014), who registered an increase in negative emotions and lower fairness perceptions among observers of SFR experiences. Finally, Melián-González & Bulchand-Gidumal (2017), Wan & Wyer (2019) confirm that the detrimental effects hold both when observed personally or in the virtual environment, e.g., by reading a negative review. Limited knowledge in this area indicates that while victims tend to be more hurt by the service failure, they are also more forgiving and tend to recognize recovery efforts by the company.

Meanwhile, observers remain more critical of the provider's attempt to restore the failed service experience (Sharifi *et al.*, 2017). At the same time, van Vaerenbergh et al. (2013) report that observers are more prone to forgive service failures. Furthermore, observing fair recovery towards others in some cases facilitates positive emotions and evaluations (Mattila *et al.*, 2014), while in other cases, it has no such effect (van Vaerenbergh *et al.*, 2013). Such mixed conclusions indicate the need to investigate further the observer versus

victim perspective on SFR effectiveness, subsequent forgiveness, and expectation development.

### **3.2.5. Hypotheses development**

Weun et al. (2004) suggest that customers increase their expectations regardless of whether the prior experiences were positive or negative. The nature and magnitude of the increase vary. Service failure upon negative prior SFR experiences leads to a double deviation, boosting the current failure's effect (Tax and Brown, 2000). Such a dissatisfactory experience generates a feeling of cognitive dissonance (Festinger, 1962). To compensate for it, customers tend to increase their expectations for future experiences. This allows to ensure sufficient evaluation-expectation spread and justify negative emotions associated with the current experience (Clow *et al.*, 1998). Consequently, service failure expectations are inversely related to service evaluations (Hess Jr. *et al.*, 2003).

A similar upward update of service recovery expectations takes place upon positive prior SFR experience. Upon acknowledging service providers' efforts in recovering failed services, customers are likely to increase their overall experience rating. This phenomenon is known as the service recovery paradox (McCollough *et al.*, 2000). Such a situation stimulates upward assimilation of service recovery expectations (Maxham and Netemeyer, 2002; Oliver and Burke, 1999).

Extant research in psychology (i.e., Richard et al., 1995) suggests that negative emotions associated with prior information or experience have a significantly higher impact on expectations than less negative ones. These findings line with the inherent negativity bias, which implies the saliency of negative emotions over positive ones (Kahneman and Tversky, 1979; Rozin and Royzman, 2001). Hence SFE and SRE may differ based on the quality of the prior SFR experience in such a way that:

*H1. Customers with negative prior SFR experience have higher a) SFE and b) SRE than customers with positive SFR experience.*

In line with the expectation confirmation theory (Oliver, 1980), expectations (both SFE and SRE) serve as a reference point for satisfaction, judgments about service quality, the

severity of service transgressions, companies' attempts to recover those, and forgiveness. Tsarenko & Tojib (2011) emphasize the role of expectations or anticipated levels of uncertainty in defining customer forgiveness. Customers with high service failure and recovery expectations may rate service provider's recovery attempts lower than those with more modest expectations; hence the likelihood of forgiveness will be lower. Supporting these claims, Suri et al. (2019) found that failure expectations mediate the effect of attribution on forgiveness.

With all eyes on the victims of the service failure incidents, understanding the described consequences for the observers remains fragmented. Nevertheless, the extant literature agrees that following the deontic principle of justice (Cropanzano, Goldman and Folger, 2003), both active (victim) and passive (observer) participation in service failure incidents triggers negative emotions and behavioral reactions (i.e., Babin et al., 2021; Casidy & Shin, 2015; Mattila et al., 2014). Yet, the effects are often found stronger for victims than observers. This may be explained by the inherent self-centeredness (Dambrun and Ricard, 2011), which implies that personal condition is the most important to the individual. Consequently, experiencing service failure will activate self-defense mechanisms and result in stronger reactions than simply observing the incident happening to a stranger. Hence, when comparing the effect of the SFE and SRE on emotional and decisional forgiveness, it is hypothesized that:

*H2. a) Service failure and b) service recovery expectations negatively affect c) emotional and d) decisional forgiveness; such effect is stronger for victims than observers of the service failure incidents.*

SFR constitutes an extraordinary experience with the potential to disrupt the regular customer journey (Van Vaerenbergh et al., 2019). Hence, service moments or touchpoints surrounding SFR processes are compelling for defining experience evaluations and expectations for future service encounters (Boulding et al., 1993; Oliver and Burke, 1999). Dasu & Rao (1999) suggest that SFR experience prompts updates of service recovery expectations and expectations in general. Other research found that satisfaction (Ha and Janda, 2016) or excellent service quality (Kelley and Davis, 1994) lead to increased service

recovery expectations. Yet, not much is known about the role of forgiveness in the formulation of either service failure or recovery expectations. For example, Wolter et al. (2019) did not find significant relationships between forgiveness and service recovery expectations. However, the lack of research and affinity of forgiveness with more explored service outcome constructs, such as satisfaction, bring up the following hypothesis:

*H3. a) Emotional and d) decisional forgiveness positively affects c) future service failure and d) service recovery expectations such as the effect is stronger for victims than for observers of the service incidents.*

*H4. a) Emotional and b) decisional forgiveness mediate the effect of c) prior service failure and d) service recovery expectations on e) future service failure and f) service recovery expectations such as the effect is stronger for victims than for observers of the service incidents.*

Maxham & Netemeyer (2002) examined the evolution of service expectations across service interactions. They concluded that while all customers continuously updated their expectations, the increase was higher among more satisfied customers. The importance of such adjusted expectations can guide service evaluations and behavior in the next service interactions (Yi and La, 2004). The research at hand emphasizes the dynamic nature of expectations that are updated upon every service encounter, and hence hypothesis five is:

*H5. Both victims and observers of service failure incidents significantly update their service, a) failure and b) recovery expectations after lived service experiences; such update will be higher for victims than observers.*

Following the deontic justice principle, individuals are wired to detect and react to injustice towards themselves or the surrounding (Cropanzano, Goldman and Folger, 2003). Subsequently, a timely recovery is essential for both victims and observers to restore justice perceptions and reduce negative reactions (i.e., negative emotions) that hinder forgiveness (McCullough & VanOyen Witvliet, 2002; Worthington, 2007).

However, while emphasizing with the others, individuals' motivations, decisions, and behavior remain self-centered (Dambrun and Ricard, 2011). At the moments of failures,

customers go through loss, which they expect to be compensated for. Timely satisfaction of the expectations may generate positive emotions about the recovery (Sharifi et al., 2017).

Victims' reactions to recovery are emotionally laden. The stress related to the failed experience is coupled with social pressure (Grace, 2009; Risen and Gilovich, 2007). Bennett & Dewberry (1994) suggest that people are viewed more favorably when they accept an apology. Hence, to minimize the cognitive burden and adhere to the social norms, customers may choose to accept the recovery (McCollough et al., 2000; Sharifi et al., 2017). Meanwhile, observers remain more critical of the provider's attempt to restore the failed service experience (Sharifi et al., 2017). Remaining less invested in the experience allows evaluating the correspondence between the failure and the recovery efforts (Risen and Gilovich, 2007). Hence, it is expected that victims will be more forgiving after service recovery than observers. The following hypothesis is proposed:

*H6. The effect of SRA on a) emotional and b) decisional forgiveness will be stronger for victims than observers of service failure incidents.*

*H7. Prior experience will moderate the effects hypothesized in H6.*

An apology is cited as the most common and the most desirable option for customers when service fails (Dasu and Rao, 1999; Johnston and Fern, 1998). Among others, it is associated with enhanced service evaluations (Smith *et al.*, 1999) and forgiveness (Harrison-Walker, 2019). However, when measured in terms of behavioral intentions or loyalty, apology underperforms compared to monetary compensations (Miller *et al.*, 2000). The discrepancy is often linked to the severity of the service failures: psychological compensations and explanations are more effective for minor transgressions but less for major ones (Harrison-Walker, 2019; Sparks *et al.*, 2007). Another explanation could be that apologizing in contrast to compensation or other measures is considered a matter of politeness. Apology signals the service provider's "admission of the mistake and becomes a basis for litigation" (Dasu & Rao, 1999, p. 38). Hence apology prompts follow-up measures. While the literature generally suggests the superiority of the apology-



compensation hybrid strategies over the individual ones (Casidy and Shin, 2015; Wirtz and Mattila, 2004), the findings remain inconclusive. For example, Casidy & Shin (2015) had previously disproved the effect of such hybrid SRA on observers' behavioral intention. While Wirtz & Mattila (2004) found that complementing apology with compensation did not lend significant added value to the victims if offered immediately after the failure incident. At the same time, the effectiveness of the hybrid strategies combining apologies with explanations (i.e., excuses or justifications) remains unexplored. Given the overall underperformance of psychological measures, such as excuse, justification, or referential accounts, compared to tangible recovery strategies, such as compensation, coupons, etc., the final hypothesis for this study is:

*H8. For both a) victims and b) observers, a combination of apology and compensation will have a significantly stronger effect on c) emotional and d) decisional forgiveness than apology or apology and excuse combined.*

While hypothesizing the model it is important to stay aware of the possible confounding variables that may affect the identified relationships. According to the extant service failure and recovery research, customers' reactions to service recovery efforts may be influenced by their propensity to complain (Bearden and Mason, 1984; Gyung Kim *et al.*, 2010). At the same time, Mattila (2001) and Wirtz and Mattila (2004) found that customers' attitude to complaining does not significantly affect the judgements about the fairness of the post-failure response or the overall satisfaction with that response. Though the effect of pronensity to complaint on the core variables is not hypothesized implicitly, the construct is used as a control variable in the model.

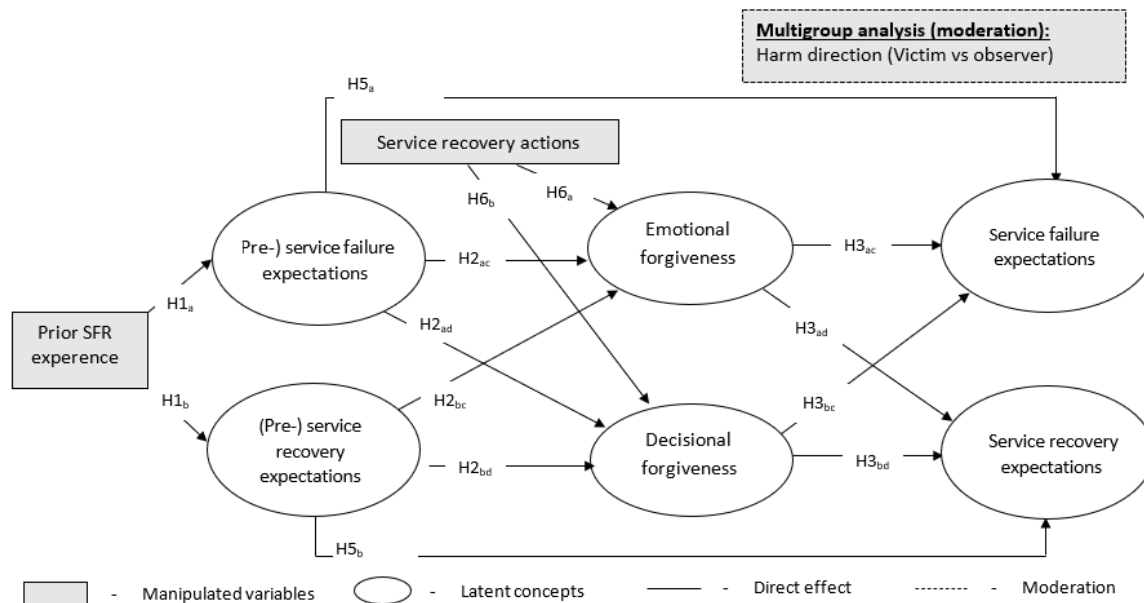
The hypothesized relationships are illustrated in the Figure 3.2.

### **3.1. Methodology**

#### **3.1.1. Research paradigm and research design**

In service and marketing literature, experiments are frequently used to inquire into determinants and reactions to service failure/recovery experiences (Mok *et al.*, 2008; Smith

and Bolton, 1998; Sparks and Fredline, 2007). A "gold standard" of scientific inquiry, the unique selling proposition of experimental research design is in the capacity to identify causal relationships among variables by manipulating them in the control environment. The cornerstone issue is the generalizability of the conclusions. While attainable in natural sciences, the quest for universal infallible causes in consumer research, in particular, is jeopardized by the heterogeneity and complexity of social systems. Apart from the defined treatment, human behavior is subject to contextual factors, such as subjective experiences, personality traits, situational factors (i.e., weather, group membership), etc.



**Mediations:**

- H4<sub>ace</sub> (Pre-) service failure expectations → Emotional forgiveness → Service failure expectations
- H4<sub>bce</sub> (Pre-) service failure expectations → Decisional forgiveness → Service failure expectations
- H4<sub>adf</sub> (Pre-) service recovery expectations → Emotional forgiveness → Service recovery expectations
- H4<sub>bdf</sub> (Pre-) service recovery expectations → Decisional forgiveness → Service recovery expectations

**Moderation:**

- H7<sub>a</sub> Prior SFR experience x (service recovery actions → emotional forgiveness)
- H7<sub>b</sub> Prior SFR experience x (service recovery actions → decisional forgiveness)

**Relative effects of service recovery actions:**

- H8<sub>a</sub> Relative effect of service recovery actions → emotional forgiveness
- H8<sub>b</sub> Relative effect of service recovery actions → decisional forgiveness

FIGURE 3.2 RESEARCH FRAMEWORK

From a critical realist perspective, the outcome of experimental manipulation does not imply universal regularities but indicates the existence of underlying causal structures (mechanisms) "that may well give rise to differences or contrasts that are relatively enduring across time, space and context" (Jones, 2010). In other words, the observed outcomes are the function of mechanisms that exist outside of human perception and actual context that may be partially considered. Therefore, the results of the experiments are conditional and never are a perfect reflection of reality (Danermark et al., 2001).

This study employs a 2x2x3 between-subject scenario-based experimental design (Figure 2), 1) to assess the impact of SRA on hotel guests' forgiveness and future service expectations, but also 2) to estimate how this impact varies depending on the harm direction of the service failure/recovery process (victim or observer); and 3) across guests with distinct prior experience histories. Additionally, 4) the evolution of the SRE and SFE is assessed. Hence three independent variables will be manipulated:

- 1) *Prior service failure/recovery (SFR) experience*: no experience vs. positive SFR experience vs. negative SFR experience);
- 2) *Harm direction*: victim or observer of the service failure;
- 3) *Hotel's SRA*: apology, apology and excuse, apology and compensation.

Harm direction and SRA situations were manipulated by exposing the respondents to the pre-defined scenarios; prior experience – by prompting them to recall the recent positive or negative SFR experiences. Scenario-based experiments are particularly favored among consumer behavior researchers as a tool for operationalization of difficult and expensive manipulations by controlling over otherwise unmanageable variables (Bitner, 1990). Using scenarios helps avoid ethical considerations associated with imposing or observing service failures in the real-life context. Moreover, it allows controlling for response bias due to memory lapses and post-consumption rationalizations, common for recall-based studies (Smith and Bolton, 1998). These issues are particularly relevant for the current research since the goal is to measure the changes in service expectations throughout SFR experiences attributed to pre-defined conditions (e.g., presence and quality of prior experience). The key drawback of the scenario-based experiment is the inability of

participants to imagine and/or fully empathize with the presented scenarios and thus, provide actual reactions. The scenarios for the study were selected and refined through a multi-stage iterative process. The set of potential service failure situations was compiled based on the findings of the previous studies conducted within the scope of the dissertation. The scenarios were subsequently pre-tested for realism and credibility with a group of Master students and fellow researchers at Modul University Vienna. The resulting 18 scenarios plot SFR experience triggered by a hotel overbooking adjusted for the manipulation conditions (Appendix A).

### 3.1.2. Sample and Field Phase

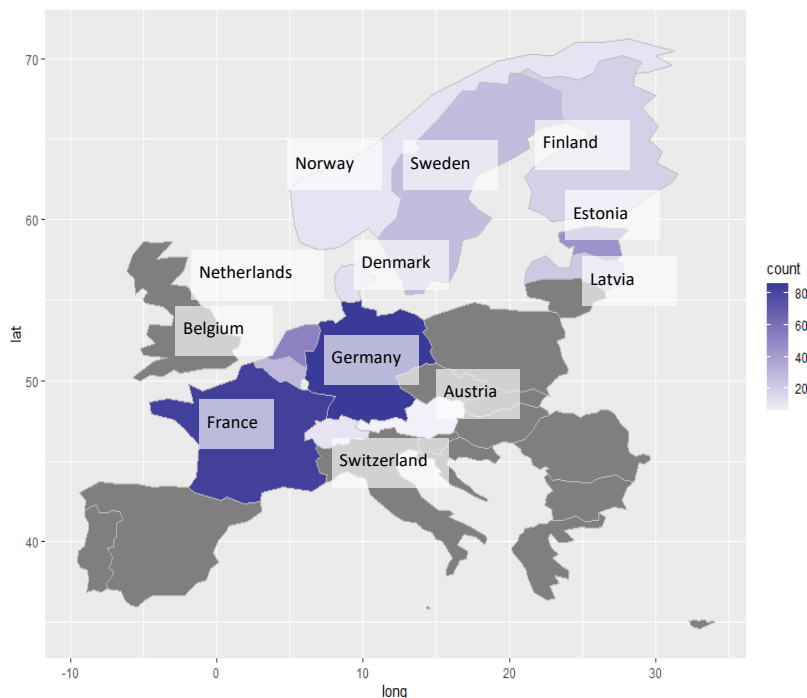


FIGURE 3.3 RESPONDENTS BY THEIR COUNTRY OF RESIDENCE

The participants for the study were recruited via the online panel service Prolific ([www.prolific.co](http://www.prolific.co)) and subsequently randomly assigned to one of the 12 scenarios. The recruitment was narrowed down to residents of the countries from the geographic area of Northern and Western Europe (“UNSD — Methodology”, n.d.). Altogether 600 responses were collected. Each respondent could only participate in a single experiment. The list and

frequency of represented countries are illustrated in Figure 3.3. Most of the respondents currently reside in the Netherlands (86), followed by Germany (52) and Ireland (50). Each participant was first presented with the instructions, explanation of the objectives of the study, as well as assured of anonymity and voluntary nature of the survey. Finally, the participants were instructed to imagine themselves in the role of hotel guest. The experiment started with the general introduction to the experience context – a traveler visiting Vienna for a long weekend; arrives to check in to the hotel with subsequent manipulation of the prior SFR experience. At this stage, the participants were asked to evaluate the quality of the remembered SFR experience and their service and service recovery expectations. Upon completion of the pretest questionnaire, the participants proceeded to one of six versions of SFR situations with a differing perspective on the situation (victim, observer). The experiment concluded with the posttest opinion measurement of the relevant variables.

The collected 600 responses were then scanned for irregularities in the answering patterns and the effectiveness of the experimental manipulations. Those respondents who reported no hotel experience in the previous year were removed from the sample. Next, the responses with a standard deviation of 0 were automatically removed. Those close to zero were reexamined and partially kept in the final sample. The remaining sample was manually checked for inconsistencies in manipulation check answers. For example, when the respondents exposed to the compensation scenario failed to report so. This way, 129 cases were deleted, leaving the study with the final sample of 471 cases. The average number of cases per experimental treatment is 39.25 (Table 3.1). Demographic characteristics of the final sample are summarized in (Table 3.2).

TABLE 3.1 FREQUENCIES PER EXPERIMENTAL MANIPULATION

	<i>Victim - Positive prior experience</i>	<i>Victim - Negative prior experience</i>	<i>Observer - Positive prior experience</i>	<i>Observer - Negative prior experience</i>
<i>Apology</i>	35	44	33	32
<i>Apology and excuse</i>	50	44	32	35
<i>Apology and compensation</i>	46	48	35	37
<i>Total sample:</i>	471			

### 3.1.1. Measurement Instrument

All measures for the constructs used in this study were drawn from the extant literature and adapted to the research context.

*Independent variables.* Given the research design, three factors were manipulated in this study: prior SFR experience, harm direction, and SRA (Appendix A). *Prior SFR experience* was manipulated by prompting respondents to recall recent positive or negative hotel experiences. Those imagining negative experiences were also asked to rate the severity of the service failure and quality of service recovery (see Section 3.1.2 for description). To manipulate *harm direction*, the participants were asked to imagine that the failure happened to them (victim) or that they observed the SFR experience of a customer ahead in line (observer). Finally, to manipulate *service recovery actions*, the receptionist either briefly apologized for the inconvenience and presented the overbooking information (apology), apologized and provided an excuse for the occurred situation (apology with excuse); or alongside with brief apology provided a voucher for a spa visit and a discount for the future hotel stays (apology with compensation).

TABLE 3. 2 RESPONDENTS' PROFILE

<i>Gender:</i>		<i>Highest completed education level:</i>	
<i>Male</i>	62.6%	<i>High school</i>	28.5%
<i>Female</i>	37.2%	<i>Bachelor's degree</i>	36.3%
<i>Other</i>	0.2%	<i>Technical/Vocational training</i>	7.9%
		<i>Master's degree or higher</i>	27.4%
<i>Age:</i>		<i>Employment status:</i>	
<i>Average</i>	28.39	<i>Full-time</i>	41.6%
<i>Minimum</i>	18	<i>Part-time</i>	17.6%
<i>Maximum</i>	61	<i>Not is a paid job (e.g., homemaker, retired or disabled)</i>	7%
<i>Percentile 25</i>	22.00		
<i>Percentile 50</i>	26.50		
<i>Percentile 75</i>	32.00	<i>Unemployed</i>	19.3%
		<i>Other</i>	11%
		<i>No data</i>	1.5%

All items were measured on a 5-point Likert scale with anchors *from 1= strongly disagree to 5- strongly agree*. Appendix B summarizes the measurement items used in the current study together with the original source for the items and Cronbach's alpha.

The dependent variables *service failure expectations (SFE)* and *service recovery expectations (SRE)* were measured with three items each adapted from Hess Jr., Ganesan, & Klein (2003) (i.e., "In general, I will not be surprised if I encounter some kind of problem during my hotel stay" for SFE or „I expect the hotel to do everything in its' power to solve a problem“ for SRE ). Mediating variables – *emotional (EF)* and *decisional forgiveness (DF)* were measured with four items each (i.e., " I will let go of my negative emotions I felt towards the hotel" for EF or „I will continue my relationships with the hotel“ for DF) (Shin *et al.*, 2018; Tsarenko and Tojib, 2015).

*Control variables.* One of the factors that can potentially affect the strength of the estimated relations is customers' attitude to complaining (Blodgett *et al.*, 1997). Hence to enhance causal interpretability of results and to exclude alternative explanations of the observed relationships, models included propensity to complain as a control variable. The scale for measuring *propensity to complain* was adapted from Gursoy *et al.* (2007), contained three items, such as "If I have a bad experience at a hotel, I am likely to tell other people about it."

### **3.1.2. Manipulation Checks**

Four manipulation checks were performed at various experiment stages to make sure the designed treatment worked as intended. Respondents were presented with three items assessing the extent to which they found the scenarios realistic (i.e., "*Presented scenario is believable.*") (Miller *et al.*, 2000). To ensure that the respondents' experiences are comparable, the perceived severity of service failure was evaluated thereof (i.e., "Having in mind the described experience, how do you rate the described check-in problem?" (Hess Jr. *et al.*, 2003). Third, the awareness of the presented SRA actions was verified with four self-constructed questions (i.e., "The hotel staff apologized to me for what had happened and provided an extra compensation (such as a coupon, cash award, gift certificate or

discount).”). Additionally, respondents' perception of their role in the described hotel check-in experience and exercised service recovery actions were measured with a self-constructed scale (three items for each variable) (i.e., "In the described scenario, I have observed a service failure incident that happened to another customer").

ANOVA was used to test whether the experimental manipulations used in the study worked as intended (Table 3.3). The results of these tests indicate that respondents across groups evaluated the presented scenarios as realistic ( $M_{victim} = 3.83$ ;  $M_{observer} = 3.91$ ) and rated the situation as a mild service failure ( $M_{victim} = 3.64$ ;  $M_{observer} = 3.75$ ). Mean scores for both parameters did not differ between the harm direction conditions ( $p > .05$ ). The means for the harm direction are significantly higher for the victims of the service failure incident compared to observers' condition ( $M_{victim} = 3.14$ ;  $M_{observer} = 2.94$ ;  $p < .01$ ). Specifically, respondents presented a victim scenario scored significantly higher on the questions such as "In the described scenario, I am a victim of the service failure incident at the hotel" and "While arriving at the hotel, I had problems checking in" ( $M_{victim} = 3.94$ ;  $M_{observer} = 2.37$ ;  $p < .001$ ;  $M_{victim} = 4.02$ ;  $M_{observer} = 2.00$ ;  $p < .001$ ). In contrast, those exposed to the observer's scenario scored significantly higher when asked, "In the described scenario, I have observed service failure incident that happened to another customer" ( $M_{victim} = 1.47$ ;  $M_{observer} = 4.44$ ;  $p < .001$ ). The respondents were able to identify the type of service recovery actions provided by the hotel in the presented scenarios. Hence there was a significant difference in the answers to the questions about service recovery actions across the experimental groups ( $M_{apology} = 2.87$ ;  $M_{apology+explanation} = 3.07$ ;  $M_{apology+compensation} = 3.23$ ;  $p < .001$ ). Specifically, those exposed to the compensation scenario scored higher on the statement, "The hotel staff apologized to me for what had happened and provided extra compensation" ( $M_{apology} = 1.70$ ;  $M_{apology+explanation} = 1.60$ ;  $M_{apology+compensation} = 4.37$ ;  $p < .001$ ). The results of the manipulation check suggest that the respondents' perceived manipulations as intended, and the sample can be used in further analysis.



TABLE 3. 3 MANIPULATION CHECKS

		<b>Number of cases per group</b>	<b>Mean</b>	<b>F statistics</b>
<b>Scenario realism</b>	<i>Victim</i>	267	3.83	7.704 <sup>n.s.</sup>
	<i>Observer</i>	204	3.91	
<b>Perceived severity of service failure</b>	<i>Victim</i>	267	3.64	2.494 <sup>n.s.</sup>
	<i>Observer</i>	204	3.75	
<b>Harm direction</b>	<i>Victim</i>	267	3.14	60.129**
	<i>Observer</i>	204	2.94	
<b>Service recovery actions</b>	<i>Apology</i>	144	2.87	12.609 ***
	<i>Apology and excuse</i>	161	3.07	
	<i>Apology and compensation</i>	166	3.23	

### 3.1.3. Data analysis

The data analysis process for this study consisted of three steps: (1) estimation and testing the measurement model; (2) estimating the structural path model; (3) testing the effect of experimental manipulations on theoretical constructs.

Steps (1) and (2) describe the common two-step approach to structural equation modeling (Anderson and Gerbing, 1988). Structural equation modeling is a hybrid factor and path analytical approach for evaluating causal relationships among observed or latent variables (Gana and Broc Guillaume, 2019). It belongs to the second generation of statistical methods, building upon the canonical statistical methods and procedures such as factor analysis, correlation analysis, regression, or analysis of variance, but has the following advantages (Bagozzi and Yi, 2012; Hulland *et al.*, 1996):

- (1) Modelling of latent or unobserved constructs.
- (2) Inclusion of measurement errors that may confound the results, especially in the case of latent variable modeling.
- (3) Modelling of the path of direct and indirect relations, which allows for complex testing of theories (Fornell and Larcker, 1981).
- (4) Combination of data and theory that could lead to the identification of new hypotheses and theory development.

The beauty of SEM is in its ability to simultaneously estimate factor and path models. Hence, the two-step approach introduced earlier needs to be viewed with a grain of salt. While convenient to guide the analysis process, it does not fully reflect the complex iterative reality of SEM analysis.

These characteristics make SEM especially appealing for experimental research interested in evaluating the contextual factors that might affect inter-group differences (Bagozzi *et al.*, 1991). SEM was initially developed as a covariance-based modeling approach (Jöreskog, 1971). For covariance matrix of the observed variables is used to estimate the respective matrix for the latent (unobserved) theoretical constructs (Reinartz *et al.*, 2009).

SEM is widely applied to study human behavior across the research fields (i.e., Baumgartner & Homburg, 1996; Cronin *et al.*, 2000; Dickinger & Kleijnen, 2008; Jani & Han, 2011; Mazanec, 2006), including consumers' reactions in the context of failed services (Babin *et al.*, 2021; Gelbrich, 2010; Hur and Jang, 2019; Wen and Geng-qing Chi, 2013).

In the first step, confirmatory factor analysis was performed to evaluate whether the measurement tool designed to assess the latent constructs (i.e., emotional forgiveness) is reliable and exhibits convergent and discriminant validity (Gana and Broc Guillaume, 2019). Cronbach's alpha (CA; Cronbach (1951) and Composite reliability (CR; Jöreskog, 1971) are used to judge the reliability of the measurement model. Convergent validity was evaluated with Average Variance Extracted (AVE), as well as AVE's contrast to CR (Fornell and Larcker, 1981; Hair *et al.*, 2010). Discriminant validity is judged based on the relative value of Mean Squared Variance (MSV) against AVE.

When the validity of the measurement model is confirmed, the next step is to estimate the path model and evaluate the model fit. In this study, the overall goodness-of-fit of the model was assessed by evaluating absolute ( $\chi^2$ , SRMR), incremental (CFI, TLI) and parsimonious (RMSEA) fit indices (Gana and Broc Guillaume, 2019; Marsh and Balla, 1994). The judgments about the degree of model fit are based on Hu & Bentler (1999) and summarized in Table 3.4. Chi-square ( $\chi^2$ ) reflects the difference between the observed and proposed covariance matrices.  $\chi^2$  is relative to the complexity of the model. This was

accounted for by calculating the Yuan-Bentler scaling correction factor (Bentler and Yuan, 1999; Gana and Broc Guillaume, 2019), which for good model fit should be between 1 and 3.

TABLE 3. 4 MEASUREMENT MODEL: VALIDITY AND RELIABILITY CRITERIA

Index name	Acceptance criteria
<i>Reliability</i>	
Cronbach's alpha (CA)	CA $\geq$ 0.70
Composite reliability (CR)	CR $\geq$ 0.70
<i>Convergent validity</i>	
Average Variance Extracted (AVE)	AVE $\geq$ 0.50 CR > AVE
<i>Discriminant validity</i>	
Maximum Shared Square Variance (MSV)	AVE > MSV
<i>Goodness-of-fit</i>	
$\chi^2$ /df	>1 & <3
Comparative fit index(CFI)	>0.95
Tucker-Lewis Index(TLI)	>0.95
SRMR	<0.08
RMSEA	<0.06

The standardized root means residual value should not exceed 0.08. The comparative fit index (CFI; Bentler, 1990) and the Tucker-Lewis Index (TLI; Bentler & Bonett, 1980) assess the estimated model by comparing it to the null model where all variables are assumed to be uncorrelated. CFI and TLI indices for a well-fitted model should fall between 0.95 and 1. The threshold for the Root mean squared error (RMSE) is <0.06. All of the fit criteria are satisfied for the suggested model and will be presented further in the study.

Confirmatory factor analysis and path modeling were conducted with "lavaan" package in the R environment (Rosseel *et al.*, 2021). Finally, the differences in the effect of the experimental manipulations were assessed using multivariate analysis of variance (MANOVA) and covariance (MANCOVA). The degree to which customers update their expectations was examined with nonparametric related samples Wilcoxon test (Field, 2013). This part of the analysis is performed in IBM SPSS (IBM, 2021).

## 3.2. Results

### 3.2.1. Measurement model validation

All measurement items used in the study were adapted from the literature to fit the current research context. Necessary rewording and further contextualization of the measurement items may impact the construct validity and reliability of the measurement. One of the goals of the study is to investigate the continuity of SFE and SRE effects through EF and DF. Consequently, measurements of the expectation constructs used in the pretest and posttest phases of the study are nearly identical. This may result in multicollinearity issues. Hence, two separate confirmatory factor analyses (CFA) were run the validity and reliability of the pretest and posttest measurements prior to testing the relations in the theoretical model (Anderson and Gerbing, 1988). The initial measurement model consisted of 18 categorical items, measuring six latent constructs: service failure expectations, service recovery expectations before and after the manipulated experience (SFE\_pre, SFE\_post, SRE\_pre, SRE\_post), emotional (EF), and decisional (DF) forgiveness. SFE\_pre, SFE\_post, SRE\_pre, SRE\_post represent pre- and posttest measurements of the service failure and service recovery expectations (Figure 3.4).

When conducting CFA and SEM with categorical data, robust diagonally weighted least squares (DWLS), weighted least squared mean adjusted (WLSM), and robust maximum likelihood (MLR) are the most common estimators, capable of accounting for inherited nonnormality of the data (Asparouhov *et al.*, 2007; DiStefano and Morgan, 2014; Finney and DiStefano, 2006). DWLS was selected for the current analysis as it was specifically designed for ordered data (Muthén, 1984). Consequently, the average variance and alpha in the measurement model are calculated from polychromic (polyserial) instead of Pearson correlations.

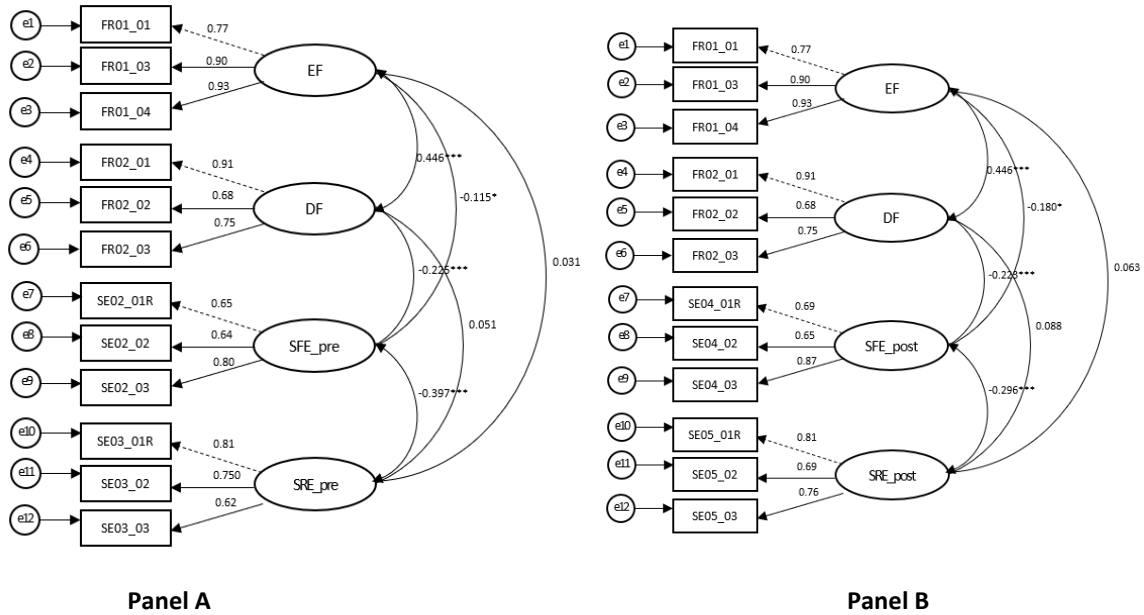


FIGURE 3.4 MEASUREMENT MODELS: PRETEST (PANEL A); POSTTEST (PANEL B)

As seen from Figure 3.4 (Panel A and B), the loadings of the items to the respective factors are acceptable, in line with the extant literature (Hair et al., 2010). Factor loadings for the individual items range between 0.62 (SE03\_03) and 0.93 (FR01\_04) for the pretest model (Panel A) and between 0.65 (SE04\_02) and 0.93 (FR01\_04) for the posttest model (Panel B). The average factor loading per latent construct deviates between 0.70 (SFE\_pre) and 0.87 (EF). There is an ongoing debate in the literature as to the optimal loadings threshold. A widely accepted notion is that items with loadings <0.7 should be excluded from the analysis (Hair et al., 2010). At the same time, Hair et al. (2010) proposes that a more relaxed criterion of 0.5 can also be accepted as long as the respective latent factor demonstrates adequate AVE and CR values. After a quick look into the model fit criteria (elaborated in section 3.2.3) and given the acceptable average loading score for the respective SRE\_pre construct, all items were kept for further analysis.

TABLE 3. 5 MODEL FIT: PRETEST, POSTTEST

Measure	Estimate (pretest)		Estimate (posttest)	
	Standard	Robust	Robust	Robust
$\chi^2$	103.669	150.298	75.473	113.654
Df	48	48	48	48
$\chi^2/df$	2.16	3.13	1.57	2.37
CFI	0.994	0.981	0.997	0.989
TLI	0.992	0.971	0.996	0.984
SRMR	0.052	0.052	0.048	0.045
RMSEA	0.050	0.067	0.035	0.054
low bound	0.037	0.055	0.019	0.041
upper bound		0.080	0.049	0.067
Pclose	0.063		0.957	0.290

### 3.2.2. Model fit

Before estimating the structural model, it is important to ensure that the proposed measurement model fits the observed model; the model satisfies convergent and discriminant validity and reliability. The measurements are invariant and free from common method bias. Table 3.5 summarizes the goodness-of-fit of the estimated model. The Yuan-Bentler scaling correction factor for the estimated model was  $103.669/48=2.15$  for the pretest model and  $75.473/48=1.57$  for the posttest model ( $\chi^2/df$ ) (Bentler & Yuan, 1999; Gana & Broc Guillaume, 2019). The factor score is above one but below three, which indicates that the data are not normally distributed, but the model fit is excellent. The latter is confirmed by Standardized root mean residual - SRMR=0.052 & 0.048 for pretest and posttest models, respectively. These values are well below the suggested 0.08 threshold. CFI=0.994 & 0.997 and TLI=0.992 & 0.996 satisfy the common  $>0.995$  criterion. Finally, the Root mean squared error (RMSEA; Steiger, 1990) is 0.050 for the pretest versus 0.035 for the posttest model ( $p > 0.05$ ). The values do not exceed the 0.06 threshold. Overall, the models exhibited a good fit.

### 3.2.3. Validity and reliability

Table 3.6 summarizes the information regarding the validity and reliability of the final scales for the pretest and posttest models.

TABLE 3. 6 VALIDITY AND RELIABILITY OF THE SCALES: PRETEST, POSTTEST

<i>Pretest</i>								
Latent constr.	CA	AVE	CR	MSV	EF	DF	SFE_pre	SRE_pre
EF	0.894	0.752	0.935	0.206	<b>0.867</b>			
DF	0.810	0.634	0.872	0.206	0.446***	<b>0.796</b>		
SFE_pre	0.733	0.487	0.872	0.878	-0.115*	-0.224***	<b>0.698</b>	
SRE_pre	0.771	0.552	0.882	0.878	0.031	0.051	-0.397***	<b>0.742</b>
<i>Posttest</i>								
Latent constr.	CA	AVE	CR	MSV	EF	DF	SFE_post	SRE_post
EF	0.894	0.752	0.935	0.206	<b>0.867</b>			
DF	0.810	0.633	0.872	0.206	0.446***	<b>0.796</b>		
SFE_post	0.781	0.553	0.872	0.878	-0.180***	-0.223***	<b>0.730</b>	
SRE_post	0.796	0.570	0.882	0.878	0.063	0.088	-0.397***	<b>0.755</b>

The reliability of measures is assessed with CA (Cronbach, 1951) and CR (Jöreskog, 1971). The values of the parameter range between 0 (non-reliable) and 1 (reliable) with the acceptability thresholds of 0.7 for CA and 0.6 for CR (Fornell and Larcker, 1981; Hair *et al.*, 2010). For latent constructs under study, Cronbach alpha ranged between 0.733 (SFE\_pre) and 0.894 (EF). The lowest reported CR value is 0.872 for the DF as well as SFE\_pre and SFE\_post construct. Hence all of the constructs satisfy the established reliability criteria.

CR along with AVE (Fornell & Larcker, 1981) was used to establish convergent validity of the measurement constructs. It is recommended that AVE satisfies at least one of the two criteria: 1)  $AVE \geq 0.5$  and/or 2)  $AVE < CR$  (Hair *et al.*, 2010). AVE scores for all but one construct are  $\geq 0.5$ , while the score for SFE\_pre (AVE=0.487) is slightly below the threshold. Furthermore, the AVE score for all constructs, including SFE\_pre, is below their CR, which allows assuming convergent validity.

For discriminant validity, AVE's square root reported in Table 3.6 in bold on the diagonal, should exceed the correlation of the latent constructs in the model (Fornell and Larcker, 1981). Discriminant validity can be confirmed for all constructs. Measurement invariance

One of the objectives of the study is to assess whether the evaluation of the latent constructs (EF, DF, SFE, and SRE) as a result of hotels' service recovery actions differs for victims of the service failure incidents compared to observers. To assess the differences at

the structural level, it is first necessary to ensure that both groups (victims and observers) equally understood the measurements.

Measurement invariance across groups is assessed by running multigroup confirmatory factor analysis (MGCFAs). MGCFAs start with comparing the baseline CFA model with the separate CFA models for each victim and observer. Subsequently, configural, metric, scalar and strict invariance of the nested models are tested by stepwise restriction of factor loadings, intercepts, and residuals at each modeling round (Jöreskog, 1971; Milfont & Fischer, 2010; Vandenberg & Lance, 2000). Restriction of the models inevitably results in the decrease of the model fit with every iteration (Milfont & Fischer, 2010; Vandenberg & Lance, 2000). Measurement invariance is confirmed when the change CFI between the consequent model runs does not exceed 0.01 (Chen, 2007). As can be seen from Table 3.7, the measurement model under study is invariant across victims and observers of service failure incidents across test rounds.

### 3.2.4. Common method bias

One of the potential issues associated with cross-sectional research design and the use of the single data collection method is a possibility of a systematic response bias by skewing the responses. Such common method (CMB) bias may distort the data and yield unsatisfactory results. A range of statistical techniques is proposed in the literature to address and control for CMB (Podsakoff *et al.*, 2003). In this study, Harman's single factor test is used to test for CMB. The newly obtained model with all items loaded on one factor explains 19% of the variance, well below the recommended threshold of 50%.

TABLE 3. 7 MEASUREMENT INVARIANCE

Model	X2	df	RMSEA	SMRS	CFI	Change CFI
Overall Model	124.102	84	0.032	0.044	0.997	na
Victim Model	109.022	84	0.033	0.04	0.986	na
Observer Model	144.724	84	0.06	0.052	0.968	na
Configural Model	253.746	168	0.047	0.045	0.971	na
Metric Model	278.823	178	0.049	0.053	0.966	0.005
Scalar Model	294.968	188	0.049	0.054	0.964	0.002
Strict Model	345.826	204	0.054	0.057	0.953	0.012



### 3.3. Hypotheses test

#### 3.3.1. Victims versus observers forgiveness

H2-H4 that hypothesized the relations among the expectations and forgiveness constructs were tested by performing multigroup SEM (MGSEM) with harm direction: victim versus observer as a grouping variable.

As can be seen in Figure 3.5 and Figure 3.6 SFE have significant negative effect on emotional and decisional forgiveness for both victims (EF=-0.120,  $p<0.05$ ; DF=-0.177,  $p<0.05$ ) and observers (EF=-0.152,  $p<0.05$ ; DF=-0.238,  $p<0.05$ ). Interestingly, the path coefficients were significantly higher for observers than for victims (SFE\_pre→EF:  $t=4.356$ ;  $df=469$ ;  $p<0.001$ ; SFE\_pre→DF:  $t=7.627$ ;  $df=469$ ;  $p<0.001$ ). In contrast, the effect of SRE was not significant. Hence, H2ac and H2ad are supported for both victims and observers of service failure incidents, while H2bc and H2bd are rejected.

H3 assumed the causal effects of emotional and decisional forgiveness on future SFE and SRE. The structural equation modeling revealed that none of the paths except from the EF→SFE\_post path, were significant according to  $p<0.05$  criteria for either victims or observers. EF→SFE\_post was only barely significant with  $p<0.1$ , with the effect significantly stronger for victims versus observers ( $t=6.394$ ;  $df=469$ ;  $p<0.001$ ). Additionally, the path coefficient from emotional forgiveness to SFE and SRE indicated opposite negative in contrast to hypothesized positive relationships. These results suggest rejecting H3.

Finally, the hypothesized mediating role of emotional and decisional forgiveness on future service failure and recovery expectations was not confirmed for either victims or observers. The described paths were not significant, resulting in the rejection of H4.

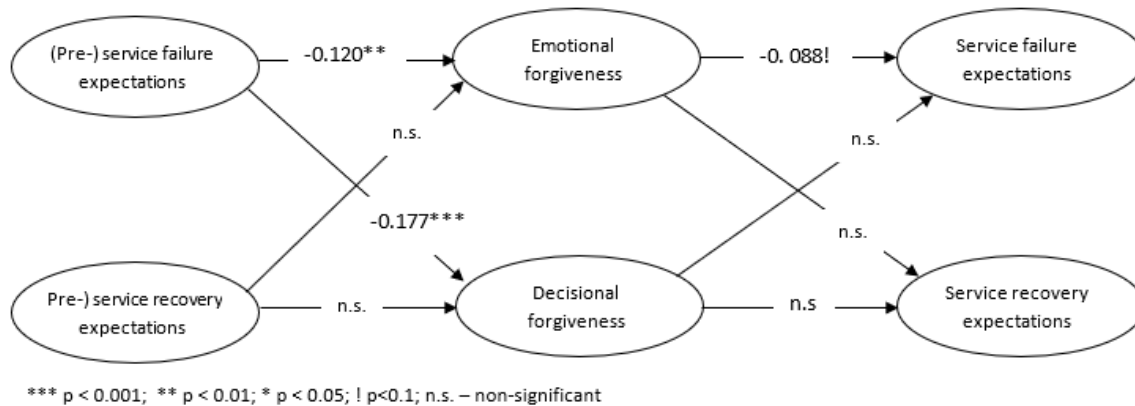


FIGURE 3. 5 STRUCTURAL MODEL: VICTIM

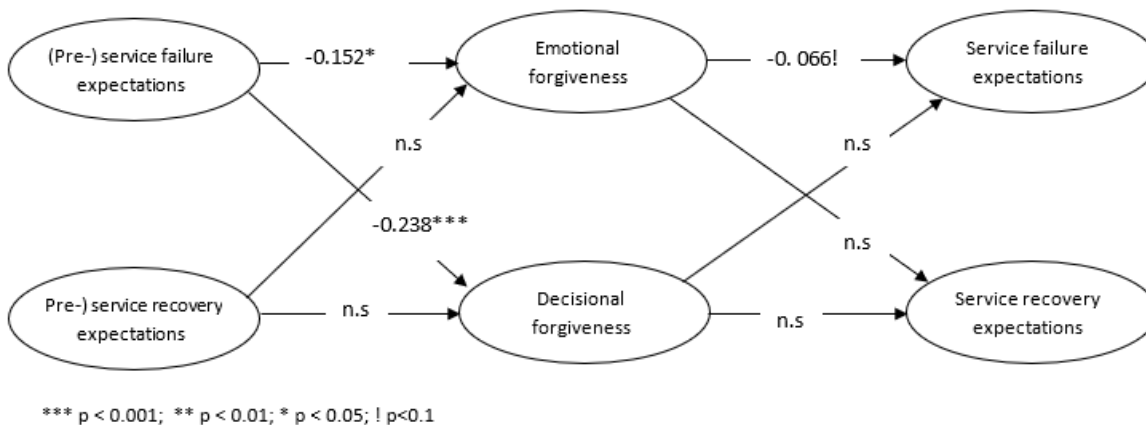


FIGURE 3.6 STRUCTURAL MODEL: OBSERVER

### 3.3.2. Service failure and recovery expectations update among victims and observers

Wilcoxon test was performed to understand what happens to service failure and recovery expectations after the SFR experiences. Namely, do customers (both victims and observers) update their expectations or downgrade them? The procedure was selected as an alternative for the paired samples t-test since the distribution of variables violated normality assumptions (Field, 2013). According to the results (Table 3.8), the number of victims of the SFR incident who updated (99 respondents) their service failure expectations was significantly higher than the number of the victims downgrading (74) the expectations

or holding them unchanged (94) ( $z=-2.318, p<.05$ ). As was hypothesized, for victims, the SFE revision follows the upward trend. The same trend was upheld for SRE, though the pre-post experience update was barely significant ( $p<.1$ ). At the same time, observers did not significantly update either their SFE or SRE ( $\Delta SFE$  and  $\Delta SRE, p>.05$ ). Hence *H5a* is supported for victims but rejected for observers. *H5b* is rejected for observers but accepted for victims on *0.1 level*.

TABLE 3. 8 SERVICE FAILURE AND SERVICE RECOVERY EXPECTATIONS UPDATE AMONG VICTIMS AND OBSERVERS

Test	Ranks	Victims				Observers			
		Z-score	N	Mean Rank	Sum of Ranks	Z-score	N	Mean Rank	Sum of Ranks
SFE_post -	Negative Ranks	-2.318 *	74 <sup>a</sup>	81,18	6007,50	-,071	68 <sup>a</sup>	72,04	4898,50
SFE_pre	Positive Ranks		99 <sup>b</sup>	91,35	9043,50		71 <sup>b</sup>	68,05	4831,50
	Ties		94 <sup>c</sup>				65 <sup>c</sup>		
	Total		267				204		
SRE_post -	Negative Ranks	-1,765!	66 <sup>d</sup>	80,92	5340,50	-,928	55 <sup>d</sup>	58,59	3222,50
SRE_pre	Positive Ranks		93 <sup>e</sup>	79,35	7379,50		64 <sup>e</sup>	61,21	3917,50
	Ties		108 <sup>f</sup>				85 <sup>f</sup>		
	Total		267				204		

a. SFE\_post\_mean < SFE\_pre\_mean

b. SFE\_post\_mean > SFE\_pre\_mean

c. SFE\_post\_mean = SFE\_pre\_mean

\*  $p<.05$ ; !  $p<.1$

a. SRE\_post\_mean < SRE\_pre\_mean

b. SRE\_post\_mean > SRE\_pre\_mean

c. SRE\_post\_mean = SRE\_pre\_mean

### 3.3.3. Prior experience and service failure and recovery expectations

Before running MANOVA to test the effect of prior service failure and recovery experience on SRE and SFE, it is important to check whether the data satisfy basic MANOVA assumptions (Field, 2013). MANOVA assumes multivariate normality; thus, it is sensitive to outliers. This implies linear relationships between the pairs of dependent variables across levels of independent variables. Mahalanobis distance is a common measure to detect outliers in the sample (Penny, 1996). For the models with two dependent variables, the value of the Mahalanobis distance should  $<13.8$  – the assumption satisfied by the model in question. According to Shapiro's test ( $p<.05$ ), the variables are not normally distributed.

This needs to be accounted for in further analyses. No multicollinearity was detected between the two dependent variables. Both Box's and Levene's tests are nonsignificant ( $p < .05$ ), supporting the homogeneity assumption.

TABLE 3. 9 MANOVA SUMMARY RESULTS: PRIOR SFR EXPERIENCE SERVICE FAILURE AND RECOVERY EXPECTATIONS

Source	Dependent variable	Sum of Sq.	df	Mean Sq.	F	Sig.	Partial Eta Squared
Corrected Model	SRE_pre	,444 <sup>a</sup>	1	,444	,920	,338	,002
	SFE_pre	2,719 <sup>b</sup>	1	2,719	8,908	,003	,019
Intercept	SRE_pre	8026,612	1	8026,612	16628,811	,000	,973
	SFE_pre	3903,443	1	3903,443	12787,853	,000	,965
Prior experience	SRE_pre	,444	1	,444	,920	,338	,002
	SFE_pre	2,719	1	2,719	8,908	,003	,019
Error	SRE_pre	226,383	469	,483			
	SFE_pre	143,160	469	,305			
Total	SRE_pre	8253,222	471				
	SFE_pre	4049,778	471				
Corrected total	SRE_pre	226,827	470				
	SFE_pre	145,880	470				

a. R Squared = ,002 (Adjusted R Squared = ,000)

b. R Squared = ,019 (Adjusted R Squared = ,017)

The results, shown in Table 3.9, indicated significant effect of prior SFR experience on service failure expectations ( $F(1,471) = 8.908$ ;  $p < .01$ ; partial eta<sup>2</sup> = 0.19). Sidak pairwise comparison (Table 3.10) revealed that respondents with negative SFR experiences reported higher failure expectations ( $M_{\text{negative}}=2.96$ ) than those with positive prior SFR experience ( $M_{\text{positive}}=2.80$ ;  $p < .05$ ).

TABLE 3. 10 CELL MEANS AND PARAMETER ESTIMATES BY EXPERIMENTAL CONDITIONS: PRIOR SFR VERSUS SERVICE FAILURE AND RECOVERY EXPECTATIONS

Dependent variable	Prior experience	Mean	St. Error	t	Sig.	95% Confidence Interval		Partial Eta Squared
						Lower Bound	Upper Bound	
SRE_pre	Intercept		,045	91,764	,000	4,070	4,248	,947
	Negative	4.10	,064	-,959	,338	-,187	,064	,002
	Positive	4.16	.	.	.	.	.	.
SFE_pre	Intercept		,036	77,769	,000	2,732	2,874	,928
	Negative	2.96	,051	2,985	,003	,052	,252	,019
	Positive	2.80	.	2,720	,007	.	.	.

a. This parameter is set to zero because it is redundant.

These results support H1a. No effect of prior SFR experience on service recovery expectations was detected. Hence H1b is rejected. Controlling for propensity to complain did not significantly influence the described results.

### **3.3.4. Emotional and decisional forgiveness**

The effects of service recovery actions and prior SFR experience on emotional and decisional forgiveness for victims and observers (H6 and H7) and the relative success of service recovery (H8) were tested by running two parallel MANOVAs for a split sample (victims, observers).

Emotional and decisional forgiveness were used as dependent variables, prior SFR experience (positive, negative), and service recovery actions (apology, apology and excuse, apology and compensation) as independent variables. Relationships were controlled for pre-service failure and recovery expectations and propensity to complain. The results are summarized in Table 3.11.

Similar to the previous section, the analysis begins with checking for assumptions. Samples are independent and sufficient for the analysis. Mahalanobis distance < 12 suggests linearity of the relations and no outliers. There was no multicollinearity detected, but the significance of Shapiro's test ( $p < .05$ ) implies that the normality of the distribution can not be assumed. Both Box's test and Levene's test are nonsignificant ( $p > .05$ ), suggesting homogeneity of the variance of dependent variables across the levels of independent variables.

Performance of service recovery actions by the hotel had a significant effect on decisional forgiveness for both victims ( $F(2,267)=3.046, p < .05$ ) and observers ( $F(2,204)=4.583, p < .05$ ). For the latter group, the effect of service recovery actions also extends to emotional forgiveness ( $F(2,204)=3.611, p < .05$ ). Importantly, for victims the control variable – propensity to complain, had a much stronger significant effect on both emotional and decisional forgiveness judgments ( $F(1,267)=10.144, p = .002$ ;  $F(1,267)=12.177, p = .001$ ).

TABLE 3. 11 SUMMARY OF MANOVA RESULTS: EFFECT OF SERVICE RECOVERY ACTIONS AND PRIOR EXPERIENCE ON EMOTIONAL AND DECISIONAL FORGIVENESS. VICTIMS AND OBSERVERS' PERSPECTIVES.

Harm direc	Dependent var.	Dep. var.	Sum of Sq.	df	Mean Sq.	F	Sig.	Partial Eta <sup>2</sup>
Victim	Corrected Model	EF	13,666 <sup>a</sup>	8	1,708	1,456	,174	,043
		DF	20,498 <sup>b</sup>	8	2,562	2,895	,004	,082
	Intercept	EF	69,834	1	69,834	59,512	,000	,187
		DF	64,688	1	64,688	73,080	,000	,221
	Service failure expectations	EF	,001	1	,001	,001	,982	,000
		DF	,674	1	,674	,761	,384	,003
	Service recovery expectations	EF	,333	1	,333	,284	,595	,001
		DF	1,376	1	1,376	1,555	,214	,006
	Propensity to complain	EF	11,904	1	11,904	10,144	,002	,038
		DF	10,779	1	10,779	12,177	,001	,045
	Prior experience	EF	,019	1	,019	,016	,898	,000
		DF	1,244	1	1,244	1,406	,237	,005
	Service recovery actions	EF	,457	2	,228	,195	,823	,002
		DF	5,393	2	2,697	3,046	,049	,023
	Prior experience x Service recovery	EF	,702	2	,351	,299	,742	,002
		DF	1,343	2	,672	,759	,469	,006
	Error	EF	302,749	258	1,173			
		DF	228,375	258	,885			
	Total	EF	3625,778	267				
		DF	3280,333	267				
Corrected total	EF	316,414	266					
	DF	248,872	266					
Observer	Corrected Model	EF	18,763 <sup>d</sup>	8	2,345	2,913	,004	,107
		DF	11,802 <sup>e</sup>	8	1,475	1,789	,081	,068
	Intercept	EF	29,520	1	29,520	36,663	,000	,158
		DF	26,289	1	26,289	31,884	,000	,141
	Service failure expectations	EF	1,044	1	1,044	1,297	,256	,007
		DF	,477	1	,477	,579	,448	,003
	Service recovery expectations	EF	2,571	1	2,571	3,193	,076	,016
		DF	1,460	1	1,460	1,771	,185	,009
	Propensity to complain	EF	,050	1	,050	,062	,803	,000
		DF	,125	1	,125	,152	,697	,001
	Prior experience	EF	3,400	1	3,400	4,223	,041	,021
		DF	,001	1	,001	,001	,970	,000
	Service recovery actions	EF	5,815	2	2,907	3,611	,029	,036
		DF	7,558	2	3,779	4,583	,011	,045
	Prior experience x Service recovery	EF	7,744	2	3,872	4,809	,009	,047
		DF	1,670	2	,835	1,013	,365	,010
	Error	EF	157,008	195	,805			
		DF	160,779	195	,825			
	Total	EF	2857,667	204				
		DF	2481,667	204				
Corrected total	EF	175,771	203					
Corrected Model	DF	172,581	203					

b. R<sup>2</sup> = ,082 (Adj. R<sup>2</sup> = ,054); d. R<sup>2</sup> = ,107 (Adj. R<sup>2</sup> = ,070); e. R Squared = ,068 (Adj. R<sup>2</sup> = 030)

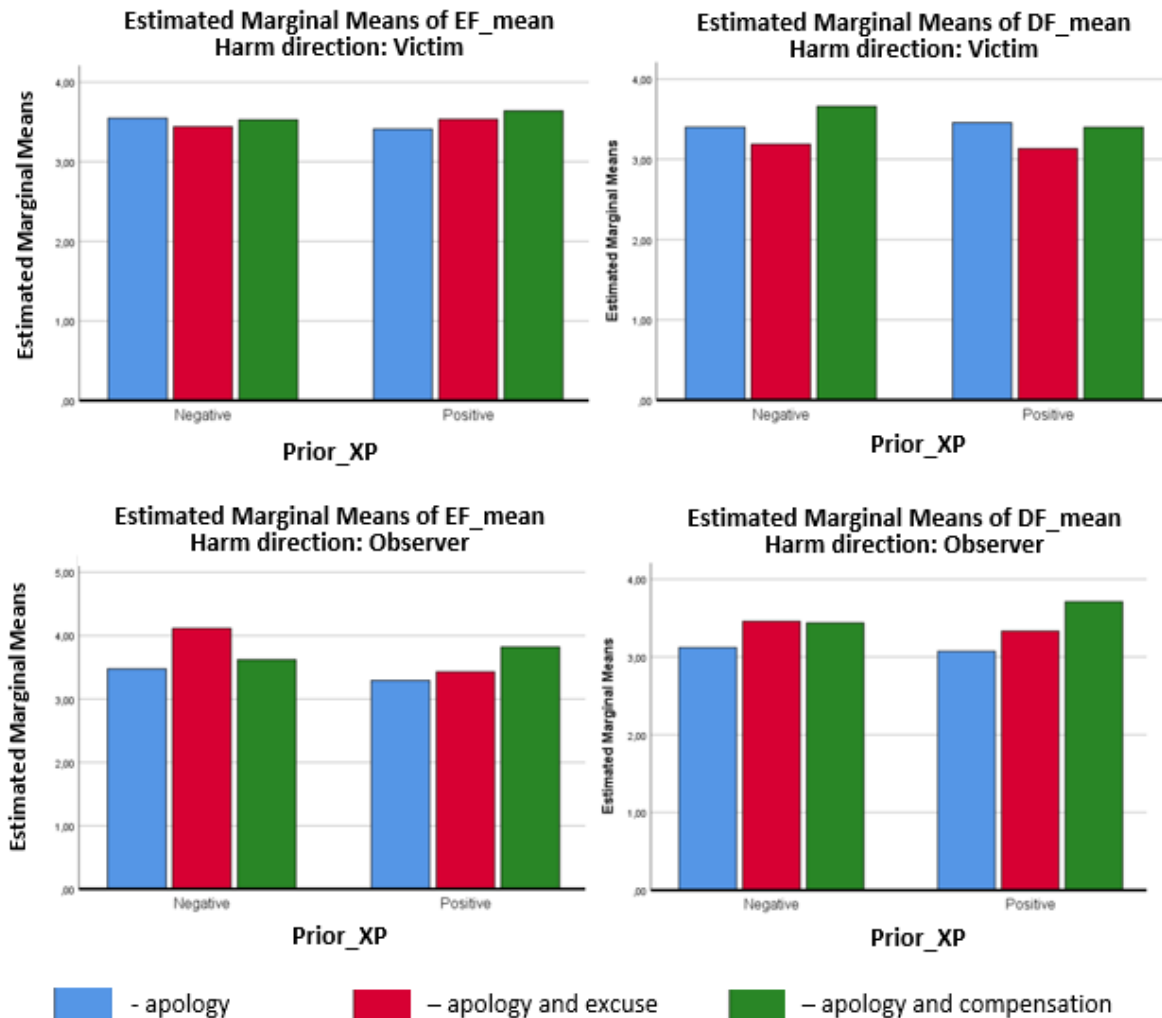


Figure 3. 7 Interaction Effect of Prior SFR Experience and SRA on Emotional and Decisional Based on the obtained results, H6a is confirmed for observers only, while H6b is confirmed for both victims and observers. Additionally, the interaction between prior SFR experience and service recovery actions was only significant for the emotional forgiveness of observers ( $F(2,204)=4.809, p<.01$ ). This effect was significantly higher for observers with prior negative SFR experience compared to those with the positive ( $\Delta M=.781, p=.001$ ). Moreover, the level of emotional forgiveness was higher upon witnessing psychological recovery actions (apology or apology with excuse) (Figure 3.7). In the case of victims, prior experience had no significant effect on forgiveness. H7 can be partially supported for observers. This means that victims of service failures evaluate the effectiveness of the

service recovery actions in the moment, based on the unfolding events. In contrast, observers assess it through the prism of the collective hotel experience.

TABLE 3. 12 PAIRWISE COMPARISON OF THE EFFECT ON EMOTIONAL AND DECISIONAL FORGIVENESS: HARM DIRECTION X SERVICE RECOVERY ACTIONS

Harm direction	Dependent variable	SRA (I)	SRA( II)	Mean diff. (MD=I-II)	Std. error.	Sig.	CI 95% Lower bound	CI 95% Upper Bound
Victim	Emotional forgiveness	Apol.	Apol+excuse	-,016	,169	1,000	-,423	,391
			Apol+compens	-,111	,169	,883	-,518	,295
		Apol+excuse	Apol.	,016	,169	1,000	-,391	,423
			Apol+compens	-,096	,161	,911	-,483	,292
		Apol+compens	Apol.	,111	,169	,883	-,295	,518
			Apol+excuse	,096	,161	,911	-,292	,483
	Decisional forgiveness	Apol.	Apol+excuse	,267	,148	,200	-,088	,622
			Apol+compens	-,107	,148	,850	-,462	,248
		Apol+excuse	Apol.	-,267	,148	,200	-,622	,088
			Apol+compens	-,374*	,140	,024	-,712	-,037
		Apol+compens	Apol.	,107	,148	,850	-,248	,462
			Apol+excuse	,374*	,140	,024	,037	,712
Observer	Emotional forgiveness	Apol.	Apol+excuse	-,402*	,158	,035	-,784	-,020
			Apol+compens	-,332	,154	,093	-,702	,039
		Apol+excuse	Apol.	,402*	,158	,035	,020	,784
			Apol+compens	,070	,153	,956	-,298	,439
		Apol+compens	Apol.	,332	,154	,093	-,039	,702
			Apol+excuse	-,070	,153	,956	-,439	,298
	Decisional forgiveness	Apol.	Apol+excuse	-,307	,160	,161	-,694	,079
			Apol+compens	-,474*	,156	,008	-,849	-,099
		Apol+excuse	Apol.	,307	,160	,161	-,079	,694
			Apol+compens	-,167	,155	,631	-,540	,206
		Apol+compens	Apol.	,474*	,156	,008	,099	,849
			Apol+excuse	,167	,155	,631	-,206	,540

The pairwise comparison (Table 3.12) was run to gain further insights into the role of tangible and psychological recovery actions in stimulating forgiveness among victims and observers. When compensation was offered along with the apology both groups, reported higher emotional and decisional forgiveness ( $\Delta M$  between .096 and .474). However, this increase was significant only in a few cases compared to other strategies (apology or apology with excuse). For victims' decisional forgiveness, the effect of the compensation-based strategy was only significant compared to the apology and excuse scenario but not the apology alone ( $\Delta M = .374, p < .05$  versus  $\Delta M = .107, p > .05$ ). In the same case for observers, this strategy was significantly more effective only in contrast to the apology alone, but not



the hybrid psychological SRA ( $\Delta M = .474$ ,  $p < .01$  versus  $\Delta M = .167$ ,  $p > .01$ ). The results provide partial support for H8ad and H8ad.

None of the presented recovery efforts were significantly better for promoting emotional forgiveness among victims. At the same time, for observers, the apology had a significantly smaller effect on emotional forgiveness compared to hybrid strategies: apology and excuse or apology and compensation ( $\Delta M = -.402$ ,  $p < .05$  versus  $\Delta M = .470$ ,  $p < .1$ ). Hence H8ac is fully rejected; Hbc is supported on the  $p < .1$  level.

All the results of the hypotheses test are summarized in Table 3.13.

TABLE 3. 13 HYPOTHESES TESTS SUMMARY

Hypothesis	Harm direction	Status	Hypothesis	Harm direction	Status	
H1 <sub>a</sub>	Prior <sub>xp</sub> →SFE	Both	H4 <sub>bce</sub>	SFE→DF→SFE	Victim	Rejected
H1 <sub>b</sub>	Prior <sub>xp</sub> →SRE	Both			Observer	Rejected
H2 <sub>ac</sub>	SFE→EF	Victim	H4 <sub>bdf</sub>	SRE→DF→SRE	Victim	Rejected
		Observer			Observer	Rejected
H2 <sub>ad</sub>	SFE→DF	Victim	H5 <sub>a</sub>	ΔSFE	Victim	Supported
		Observer			Observer	Rejected
H2 <sub>bc</sub>	SRE→EF	Victim	H5 <sub>b</sub>	ΔSRE	Victim	Supported!
		Observer			Observer	Rejected
H2 <sub>bd</sub>	SRE→DF	Victim	H6 <sub>a</sub>	SRA→EF	Victim	Rejected
		Observer			Observer	Supported
H3 <sub>ac</sub>	EF→SFE	Victim	H6 <sub>b</sub>	SRA → DF	Victim	Supported
		Observer			Observer	Supported
H3 <sub>ad</sub>	EF→SRE	Victim	H7 <sub>a</sub>	Prior <sub>xp</sub> x SRA→EF	Victim	Rejected
		Observer			Observer	Supported
H3 <sub>bc</sub>	DF→SFE	Victim	H7 <sub>b</sub>	Prior <sub>xp</sub> x SRA→DF	Victim	Rejected
		Observer			Observer	Rejected
H3 <sub>bd</sub>	DF→SRE	Victim	H8 <sub>a</sub>	Relative effect of SRA→EF	Victim	Rejected
		Observer			Observer	Supported!
H4 <sub>ace</sub>	SFE→EF→SFE	Victim	H8 <sub>b</sub>	Relative effect of SRA →DF	Victim	Partially supported
		Observer			Observer	Partially supported
H4 <sub>adf</sub>	SRE→EF→SRE	Victim				
		Observer				

! - hypothesis supported on  $p < .1$  level

### 3.4. Discussion and conclusions

This study employed the 2x2x3 scenario-based experiment design to shed some light on the role of emotional and decisional forgiveness during service failure and recovery experiences for two categories of customers: those directly affected by the service transgression (victims) and passive observers of the incident. This was done by first comparing the effectiveness of tangible versus psychological service recovery strategies on forgiveness. Second, by establishing the link between forgiveness and service failure and recovery expectations before and after the experience. Additionally, the role of the prior experience in the described interactions is assessed.

As expected, prior SFR experience significantly affected service failure expectations the customers have before starting the experience. Confirming the negativity bias (Richard *et al.*, 1995; Rozin and Royzman, 2001), negative experiences lead to significantly higher expectations of service failures. Interestingly, these effects were not confirmed for SRE. After going through SFR experience, the victims of the failure incidents significantly update their service failure expectations, but less so recovery expectations. Any updates were irrelevant for observers. Together the outcomes of H<sub>1</sub> and H<sub>5</sub> tests revealed that failure expectations are more flexible than recovery expectations.

In line with Hassey (2019), the results suggest that both victims and observers consider SFE in their decisional forgiveness process in that higher failure expectations hinder decisional forgiveness. But, surprisingly, the effect is stronger for observers than for victims. However, in line with (Wolter *et al.*, 2019) similar effect does not extend further to future failure and recovery expectations. Consequently, neither decisional nor emotional forgiveness mediated the detected expectations update. Together with the low percentage of variance explained, these findings may be symptomatic of the missing mediators, such as satisfaction, purchase intention, negative WOM. In the extant literature, these constructs are linked to both forgiveness and expectations (Braithwaite *et al.*, 2011; Harrison-Walker, 2019). For example, Braithwaite *et al.* (2011) and Muhammad & Gul-e-Rana (2019) found that forgiveness prompts satisfaction and inhibits conflicting emotions. While satisfaction

further provokes the increase in expectations (Rodríguez del Bosque *et al.*, 2006). Moreover, expectations are directly linked to satisfaction (Lemon *et al.*, 2002).

Building upon the existing research (Casidy and Shin, 2015; Mattila *et al.*, 2014; van Vaerenbergh *et al.*, 2013), the study suggests that the effect of the service recovery actions extends to customers who are not passively involved in the SFR incidents. Offering compensation along with apology increased the likelihood of decisional forgiveness among victims and observers alike. Apology and excuse and sole apology were the least effective for decisional forgiveness of victims and observers, respectively. However, none of the recovery actions significantly affected emotional forgiveness among victims of service incidents. Though unexpected, the potential explanation of the lack of effect could reside in the negative emotions (i.e., anger) that commonly arise during failure incidents (Gelbrich, 2010; Su *et al.*, 2018). Anger, frustration, and alike are capable of catapulting a customer into negative emotive responses while disrupting rational judgments (Worthington and Scherer, 2004). In such a state, the affected customers might find it harder to arrive at peace with the dissatisfactory event. While taking the conscious decision to forgive the offender, the victims of the service incidents may still hold a grudge towards the service provider (Tsarenko and Tojib, 2011). This could also explain why the effect of prior service experience was not significant for either decisional or emotional forgiveness. However, the assumption needs to be tested in future studies.

Conversely, observers acknowledged the additional efforts (i.e., excuse or compensation) and reported a higher emotional forgiveness level. Remarkably, the effect of psychological compensation was stronger than the tangible one. Moreover, contrary to the expected, the immediate effect of SRA on forgiveness being stronger for observers than for victims. These findings illustrate the deontic justice principle in action (Cropanzano, Goldman and Folgner, 2003).

### **3.4.1. Theoretical implications**

The extant service literature emphasizes the dynamic nature of service expectations (Dasu and Rao, 1999; Lemon *et al.*, 2002; Oliver, 1980), yet “little is known about whether and

how customers update their expectations for the remainder of the customer journey following service failure and recovery episodes” (Van Vaerenbergh et al., 2019, p. 9) as well as for the future experiences. The first theoretical pursuit for this study was to motivate the embracement of the longitudinal perspective on service expectations and their role in the service recovery journey. The findings challenge the prevailing conceptualization of service failure and recovery expectations as *will*-expectations (Dasu and Rao, 1999; Lemon et al., 2002). The varying susceptibility of service failure and recovery expectations to the quality of prior experience and the manipulated SFR experience indicates the distinct nature of these expectations. Service failure expectations correspond to more flexible *will* expectations, while recovery expectations reflect normative *should meet* expectations regarding the recovery performance. While the former are updated upon each service interaction, the latter are adjusted only after being exceeded (Boulding et al., 1993; Dasu and Rao, 1999).

Second, the study contributes to the emerging research into the role of forgiveness in the service recovery journey (Babin et al., 2021; Harrison-Walker, 2019; Tsarenko and Tojib, 2011). While the mediating role of forgiveness in the expectations update process was not confirmed, the findings suggest contingency of forgiveness upon the prior service failure expectations, service recovery actions, and to a certain extent prior experience. The latter effects were only registered among the observers of the SFR experiences.

Hence as a third contribution, this study adds to the discussion about the extent of the spillover effects SFR experiences could have on the wider scope of service experience stakeholders. Congruent with the previous literature (Casidy and Shin, 2015; Mattila et al., 2014; Sharifi et al., 2017; van Vaerenbergh et al., 2013), the findings revealed that service providers’ efforts to recover the failed experiences facilitate forgiveness for both victims and observers. However, the effects are asymmetric. In line with Grace (2009), the findings indicate that victims are more inclined to act socially acceptable and consciously decide to forgive the transgressor. This helps them to reduce emotional load and save face in front of others. Such decisions, however, do not translate into emotional forgiveness. Victims are likely to hold a grudge against the transgressor despite declaring forgiveness (Tsarenko et

al., 2019; VanOyen Witvliet et al., 2001). In contrast, mere observance of the experience does not require such emotional investment. Thus, it becomes easier to let go of the anger and reach emotional forgiveness while keeping the head cool for more critical assessments of the recovery efforts' quality (Risen and Gilovich, 2007). The latter supports the enactment of the deontic justice principle (Cropanzano, Goldman and Folger, 2003). The revealed asymmetry of the recovery effects on forgiveness is new to service and hospitality research, which either examined forgiveness as a unidimensional construct (Casidy and Shin, 2015) or reported symmetric effects for both emotional and decisional forgiveness (Shin et al., 2018).

### **3.4.2. Managerial implications**

Service practitioners do not need convincing when it comes to the central role of service recovery strategies in facilitating excellent experiences. However, the relative effectiveness of the recovery strategies and the scope of affected stakeholders remain unclear. The study at hand reveals two elements of the SFR experience that need to be considered while developing recovery strategies. First, the management should be aware that recovery efforts affect service judgments of victims as much as the witnesses of the SFR experience. Given the capacity of the psychological recoveries, such as an apology and excuse to facilitate emotional forgiveness among observers, special attention should be paid to the training of the frontline staff. Creating a welcoming and friendly environment in the hotel could help mitigate the outreaching effects of the SFR incidents. Moreover, clear communication of the service quality and recovery standards as a part of the value proposition, together with the prompt addressing of the emerging issues (particularly in the online environment), could be used to prepare the customers for the upcoming experience by setting the right expectations. This is particularly relevant in case of failure expectations that were found to be more significant in the forgiveness process.

### **3.4.3. Limitations and future research**

Similar to other studies, the results of the current study need to be interpreted in light of its limitations. First, the nature of the research design – scenario-based experiment and use of an online panel for data collection, could potentially affect the reliability of the data. In that 1) the imagined reactions reported in the survey tool may differ from the actual actions and reactions; 2) the participants of the online panels may lack motivation for deep engagement with the study. Therefore, additional research could test the theoretical framework or its parts in the real service setting. Also, future research may consider enriching the proposed theoretical framework with other service evaluation constructs, such as justice perceptions, mood, satisfaction, behavioral intentions, etc. This is particularly important given the detected significant effect of propensity to complain among victims of the service failure incidents. Altogether test of the extended theoretical model may provide additional explanatory power to the identified relations.

Finally, the research was conducted in the midst of the global COVID-19 pandemic. Moreover, the data were collected in January 2021, when mobility restrictions were enforced in the majority of the countries represented in the sample. Increased nostalgic sentiment towards traveling could have positively skewed the results of the survey.



# Postface

The purpose of the dissertation at hand was to examine the anatomy of the value of hotel experiences and evaluate the opportunities for value restoration upon service transgressions. Additionally, the research explored the role of situational or contextual factors, such as travel party composition and harm direction, in customer value judgments. The interest in the research topic was primarily fueled by the fact that value remains among the most researched yet debatable concepts in service and marketing literature. On the one hand, academic and business literature agree that creation of value is cornerstone for success of the company (Cronin, 2016; Gallarza *et al.*, 2011; Ostrom *et al.*, 2010; Woodruff and Gardial, 1996). On the other hand, there is an ongoing debate regarding the conceptualization, dimensionality and measurement of value (Leroi-Werelds *et al.*, 2014; Sweeney and Soutar, 2001). These developments are primarily conceptual, Hence, researchers call for more empirical studies (i.e., Cronin, 2016; Medberg & Grönroos, 2020). In this light, the findings of the three studies comprising the dissertation contribute to the conceptual understanding of value co-creation across customers, providers, and joint spheres and generate actionable insights and hands-on tools for the managers to evaluate and improve the existing service designs. The aim was attained by means of three consecutive studies.

Specifically, *Study 1* explored the underlying factors of customer value-in-use perceptions during the hotel experience. By applying text mining, specifically STM, to the set of online hotel reviews, fifteen value-forming attributes were identified. Those attributes disproportionally described the functional, hedonic and cost-sacrifice value-in-use and stemmed from the core service itself, interactions with the hotel employees, environment and ownership-transfer. Customer value narratives were dominated by functional attributes (i.e., cleanliness, room comfort) followed by hedonic (i.e., staff (criticism)) and

cost-sacrifice (i.e., booking) values. Importantly, these findings are generally in line with the existing value research.

Additionally, the proportions differed, depending on who the guests traveled with, such as location was more prominent among families than solo travelers. As expected value-forming attributes had contrasting valence. For example, both factors of cost-sacrifice value were negative, while experiential value comprised of both positive and negative attributes.

*Study 2* extended *Study 1* and examined the degree of alignment between the value dimensions extracted from the value-in-use perceptions versus value proposition communications. Similar to *Study 1*, online reviews were analyzed as a source of value-in-use perceptions while factors of value proposition communications were extracted from the online descriptions of the reviewed hotels. Conforming the results of the *Study 1*, STM analysis resulted in a fifteen-topic value structure along with three value types – functional, hedonic, and cost-sacrifice value. Given the updated dataset, the value attributes themselves and the distribution across the value types, and sources differed slightly. For example, value-for-money, check-in/check-out or problem-solving were not identified in the previous study, where only online reviews were used. Notably, the analysis revealed significant discrepancies between value proposition narrative and value-in-use perceptions. For example, hotels emphasized executive service and the location as the unique selling point, while the quality of employee interactions influences customer evaluations more. Especially when the underrepresented value attribute is negatively perceived by customer, such discrepancy indicates a missed opportunity for improvement of the value proposition and service offering.

The last *Study 3* delved into the joint sphere of value co-creation. Specifically, a scenario-based experiment was designed to examine customers' reactions to the hotel's attempts to recover failed service. The focus was on customer forgiveness and its role in the expectations updating continuum. Importantly, it was demonstrated that to a different extent, both victims and observers are affected by the service failure incidents and service providers' recovery attempts. The latter are perceived differently by victims and observers. The findings suggest that service providers need to have a broader focus when designing



customer relationships strategies and to train their employees since the mere observance of the negative service scenarios may undermine customers' experience.

Altogether, the three studies composing the dissertation emphasized the multifacetedness, complexity, and contextuality of value. In line with the extant research, the results confirmed that value is co-created through the customer journey and by multiple service actors. Hence, not only those directly experiencing the service but also other customers passively observing the service processes may facilitate or inhibit value co-creation. From a management point of view, the findings imply that companies need to establish processes for ongoing monitoring of customer value perceptions and using that data to evaluate the efficiency and update value propositions. Notably, the actions should extend beyond the focal customers themselves to include other categories and groups, such as observers.



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## References – Postface

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# Appendices

## Appendix A. Study 3. Experimental Setup and Treatments

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<i>Item</i>	<i>Description</i>
<i>Experiment set up</i>	<p><b>Welcome!</b></p> <p>Thank you for accepting an invitation to participate in this research! The survey you are about to take is a part of the PhD research project conducted at <b>Modul University Vienna</b> (Austria), which delves into the anatomy of the valuable consumer experiences.</p> <p>When booking a table in a restaurant, a room in a hotel, a travel ticket, or doing routine grocery shopping, we envision what the experience should be like. Yet, it often happens that things do not go as anticipated. In this study, I am interested in your opinion of companies' actions amid such unfortunate circumstances.</p> <p>I will present to you a description of a hotel experience and then will ask questions about that experience. There are no right or wrong answers, any answer you give is appreciated. Should you have any comments regarding the questions or statements in the questionnaire, please add those to the text box at the end of the page. Your feedback is very valuable!</p> <p>Participation in the survey is voluntary, you may withdraw at any time. The questions do not probe into identifying information, like name, physical or IP address, etc. The data are collected for academic purpose only and will remain confidential.</p> <p>If you have any questions regarding the research, please get in touch: <a href="mailto:yuliya.kolomojets@modul.ac.at">yuliya.kolomojets@modul.ac.at</a></p> <p>By clicking "Next" you will proceed with the survey.</p>
<i>Introduction</i>	<p>You decide to go for a weekend break to Vienna. After a two-hour flight, at around 3 pm (well past the standard check-in time) you arrive at the previously booked hotel. Your selection is a modern four-star property in the city center, walking distance from the main sights on your list.</p>

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*Manipulation 1. Customer role*

*Victim*            You approach the front desk and wait a couple of minutes before being greeted by the receptionist. You provide your name and reservation details. The receptionist confirms the reservation but informs you that the hotel is overbooked, so you are relocated to a partner hotel approximately 200m away. The arrangements for the equivalent room have already been made.

*Observer*        As you approach the front desk and wait to be greeted, you hear that the guest next to you has problems checking in. The receptionist has just informed them that the hotel is overbooked and they are relocated to a partner hotel approximately 200m away. The arrangements for the equivalent room have already been made.

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*Manipulation 2. Service recovery actions*

*Apology*            The receptionist adds - "I am terribly sorry about this situation. On the behalf of the hotel, please accept my sincere apologies for these inconveniences"

*Apology and excuse*    The receptionist adds - "I am terribly sorry about this situation. On the behalf of the hotel, please accept my sincere apologies for these inconveniences. There was a technical issue on the part of our reservation system provider, so some reservations were lost for a while. This led to overbooking."

*Apology and compensation*    The receptionist adds - "I am terribly sorry about this situation. On the behalf of the hotel, please accept my sincere apologies for these inconveniences. Please, accept a little complement from the hotel - a voucher for the spa visit and a 10% discount for the future stay in the hotel."

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## Appendix B. Study 3. Details of the measurement items

Scale	Source(s)	Items
<b>Dependent variables</b>		
Service failure expectations	(Hess Jr. <i>et al.</i> , 2003)	In general, I will not be surprised if I encounter some kind of problem during a hotel stay. I would consider myself lucky if I did not experience some kind of problem with a hotel stay. I consider the odds of running into a problem when I stay in any hotel as being pretty high.
Service recovery expectations	(Hess Jr. <i>et al.</i> , 2003)	I expect any hotel to do everything in its' power to solve a problem. I do not expect any hotel to exert much effort to solve a problem. I expect any hotel to try to make up for the problem.
<b>Mediating variables</b>		
Emotional forgiveness**	(Shin <i>et al.</i> , 2018; Tsarenko and Tojib, 2012)	I will let go of my hurt and pain toward the hotel. I am going to get even with the hotel. I will let go of my negative emotions I felt towards the hotel. I will let go of the resentment I felt toward the hotel.
Decisional forgiveness**	(Shin <i>et al.</i> , 2018; Tsarenko and Tojib, 2012)	I will continue my relationships with hotel. I will make effort to be friendly in my future interactions with the hotel. I will cut off the relationships with the hotel. I will give the hotel an opportunity to make it up to me.
<b>Control variables</b>		
Perceived severity of service failure**	(Hess Jr. <i>et al.</i> , 2003)	Having in mind the described experience, how do you rate the described check in problem?
Quality of service recovery performance**	(Hess Jr. <i>et al.</i> , 2003)	Based on your experience with the hotels, what is your opinion of the hotel's response to the described problem?
Propensity to complain	(Gursoy, McCleary, & Lepsito, 2007)	If I have a bad experience at a hotel, I am likely to tell other people about it. If I face any problem or I am dissatisfied with the service at the hotel I am likely to complain to the front desk employee. If I face any problem or I am dissatisfied with the service at the hotel I am likely to complain to the manager.
<b>Manipulation checks</b>		
Scenario realism	(Miller <i>et al.</i> , 2000)	Presented scenario is believable. There are service problems like this in real life. I was able to identify with the hotel guest.
Customer role**	Original items	In the described scenario, I am a victim of the service failure incident at the hotel. While arriving to the hotel, you had problems checking in. In the described scenario, I have observed service failure incident that happened to another customer.
Service recovery actions**	Original item	The hotel staff apologized to me for what had happened

The hotel staff apologized to me for what had happened and provided an extra compensation (such as coupon, cash award, gift certificate or discount).

The hotel staff apologized to me for what had happened and explained why the problem occurred.

The hotel staff did not take any measures to redress what have happened.

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\* - items that appear in the pre-test questionnaire only

\*\* - items that appear in the post-test question