# Mobile-Based Value Co-creation:

## Contextual Factors towards Customer Experiences

## Abstract

*Purpose:* Collecting information from and interacting with customers through mobile platforms for personalization purposes have become a trend. While mobile-based value co-creation has attracted wide research attention, a noticeable gap exists regarding what might potentially affect the firm-customer interaction process through which value is co-created. This study aims to explore how customers exchange information and communicate with firms through mobile applications for value co-creation purposes in a travel context.

*Design/methodology/approach*: Based on a constructivist research paradigm, this study adopted a qualitative research design. Data were collected through semi-structured interviews and were analyzed following narrative analysis approach.

*Findings*: The findings highlight the contextual factors (individual characteristics, trip characteristics, and computer-mediated communication characteristics) that facilitate and inhibit the firm-customer interaction process. Practitioners are suggested to put more efforts on creating stimuli for interactions and managing customer expectation.

*Originality*: This study focuses on the interaction process, rather than the antecedents and outcomes of mobile-based value co-creation. It contributes empirical evidence on how customers co-create value and why some situations present better opportunities for successful value co-creation.

*Research implications*: This study goes beyond technology adoption and focuses on customers' post-adoption stage. The findings shed light on the important role of the service provider in facilitating effective interactions for value co-creation with customers.

**Keywords:** Value Co-Creation; Mobile Application; Hotel-Customer Interaction; Customer Participation; Travel; Hotel Mobile App

## 1. Introduction

In the travel industry, mobile-based services have gone beyond traditional online reservation and information inquiry. Enterprises are increasingly relying on interactive functions to communicate with and collect information from customers through mobile platforms. Travelers today are empowered to converse with travel service providers in real-time (Neuhofer *et al*., 2013), co-design new ideas and solutions with other consumers (Jarvenpaa and Tuunainen, 2013), and personalize aspects of their trips (Lei *et al.*, 2020). It is believed that through these practices, firms can better understand contemporary customers' changing preferences so as to provide more relevant service offerings.

Theoretically, the practice of providing accessible resources for customers to shape their unique experiences through interacting with the service provider is called value co-creation (Prahalad and Ramaswamy, 2004a, Vargo and Lusch, 2004). The logic is that through effective interaction and communication, service providers can incorporate customers' unique needs and wants into the service design and provide more personalized customer experience. However, while the service providers may have the intention to co-create value with customers, customers may not necessarily react favorably. When conflicts emerge during the interaction process, value may not be co-created but co-destructed, leading to waste of resources and worsen firm-customer relationship (Plé and Chumpitaz Cáceres, 2010). Hence, understanding the firm-customer value co-creation process and identifying what hinders/facilitates such process is critical.

Relevant studies in the tourism and hospitality literature have mainly discussed the design and implementation of value co-creation strategies from company's

2

perspective (e.g., Shaw *et al*., 2011, Jarvenpaa and Tuunainen, 2013, Neuhofer *et al*., 2013, Wang *et al*., 2013). Prior studies that focused on customer's perspective were mostly interested in understanding technology adoption, and identifying the antecedents and consequences of users' intention to use technology were often the research interest (Law *et al*., 2018). Our current understanding on technology effectiveness is mainly associated with the quality of technology functions and attributes, rather than the context within which the technology is used.

This study explores customers' experience of using mobile applications (apps) for value co-creation in the context of hotel stay. It aims to identify the contextual factors that may affect customers' experience of using mobile apps to interact and communicate with hotels for value co-creation purposes.  The goal is to understand how the firm-customer interaction process, rather than the technology itself, can be further enhanced. Following a narrative qualitative research approach, data were collected from travelers who had used mobile apps to interact with hotels during their trips. The empirical evidence delineates the process of customer participation and identifies the contextual factors that inhibit/facilitate the mobile-based value co-creation process in the travel context. Managerial implications are suggested for practitioners to encourage and facilitate meaningful firm-customer interactions and exchanges through mobile platforms.

## 2.  Literature Review

*2.1 Service-Dominant Logic and Value Co-Creation*

Service-dominant (S-D) logic was introduced as an alternative marketing paradigm that emphasizes customers, rather than service suppliers, as the creator of value (Vargo and Lusch, 2004). In this sense, competitive advantage is not obtained by producing the greatest number of goods but by providing solutions that deliver the best value to customers. As value is determined subjectively and phenomenologically (i.e., it is contextual- and experiential-based) by customers, firms mainly act as a value facilitator and propose value propositions (Vargo and Lusch, 2004). Customer is thus always a co-creator of value, and firms can facilitate customers' value creation by providing appropriate tools and resources through which customers can use to create value-in-use. Prahalad and Ramaswamy (2004b, p.8) defined value co-creation as the "joint creation of value by the company and the customer; allowing the customer to co-construct the service experience to suit her context". Based on this definition, the interaction points between the firm and the customer become critical. It is through such interaction where customers' needs and desires can be better understood by the service suppliers.

*2.2 Co-creating value through technologies in the tourism and hospitality industry*

As the interaction points between the firm and the customer is the locus of value creation, an effective tool that can facilitate communication and information exchange becomes critical (Vargo and Lusch, 2004). Innovative information and communication technologies (ICTs) have been considered a powerful operant resource for facilitating value co-creation (Lusch *et al.*, 2007). Recognizing the great potential of ICTs, particularly mobile technologies, in fostering richer and more personalized experiences, a series of mobile technology research has been conducted in the tourism and hospitality

domain. Well established theories such as technology acceptance model (TAM) and its extended versions such as the unified theory of acceptance and use of technology (UTAUT) were often applied in prior research. Researchers have repeatedly found factors such as perceived usefulness, perceived ease of use, convenience, trust and risk as determinants of technology adoption (e.g., Ozturk *et al*., 2016, Fang *et al*., 2017, Fong *et al*., 2017, Jeon *et al*., 2019). These factors, however, are mainly associated with technology functions and attributes, rather than the service provider and context within which the technologies were used. In the research stream of mobile-based value co-creation, the antecedents and consequences, rather than the process of technology use, remain the key research interests. Researchers were interested in what drive customers to use mobile technologies for value co-creation purposes (Heidenreich and Handrich, 2015, Morosan, 2015b, Morosan and DeFranco, 2016b, Sarmah et al., 2017) and the outcomes of such involvement (Morosan and DeFranco, 2016a, Lei *et al*., 2020). We argue that it is necessary to shift the research focus from the technology itself to the service experience. The context within which the technology is used should be considered to generate implications that provides more completed explanation on the customer experience.

*2.3 Customer's Role in Value Co-Creation*

Customer participation in value co-creation has been defined as the "required (in-role) behavior necessary for successful value co-creation" (Yi and Gong, 2013, p.1279). It refers to customer behaviors such as information and idea sharing, decision making, and interaction with others (Yi and Gong, 2013, Chan *et al*., 2010). Customers' willingness to participate does not necessarily lead to enhanced value. When resources

are misused, or when parties fail to meet the expectation of each other, the well-being of either party may decline (Plé and Chumpitaz Cáceres, 2010). Investigating customer participation in the value co-creation process is thus critical for understanding what may potentially go wrong and the reasons behind. Specifically, as customer participation and value co-creation are context-dependent concepts (Chan *et al*., 2010), understanding customers' participation experiences across different contexts is necessary.

## 3. Research Design and Methodology

*3.1 Constructivist Paradigm and Narrative Qualitative Research*

As value is subjectively perceived and created by each individual, this study follows the constructivist paradigm that advocates "reality is a product of one's own creation" (Savin-Baden and Major, 2013, p.63) and focuses on how individuals make meanings and construct knowledge. Based on the constructivist paradigm, knowledge can be gained by understanding individuals' interpretations and construction of meanings (Ritchie and Lewis, 2003). Qualitative research is an interpretive, naturalistic approach that helps address research questions of "how," "why," or "what." It aims to collect rich information to explain individuals' lived experiences (Ritchie and Lewis, 2003). This study adopts a narrative, qualitative research design, which is most appropriate when participants' detailed stories can help understand the research problem (Creswell *et al*., 2007). The narrative theory suggests that meaning is made through narratives, and narrative approach is defined as "the way in which researchers conceive, capture and convey the stories and experiences of individuals" (Savin-Baden and Major, 2013, p.231). Data collection in narrative research focuses on collecting stories from

participants, which enables the researcher to analyze and extract meanings from the stories (Savin-Baden and Major, 2013).

*3.2 Data Collection and Analysis*

This study is interested in mobile technologies that facilitate interaction and information exchange before, during and after trip. Hence, we targeted the mobile apps developed by international hotel chains which are specifically designed for this purpose. Table 1 presents the details of the focal mobile app functions which were selected based on previous research (Lei *et al*., 2019b). Semi-structured interviews were conducted with travelers who had used the focal hotel mobile app functions in the preceding six months. Recruiting interviewees who met these two criteria was challenging. Hence, they were approached through snowball sampling (recommendation by acquaintances and recruitment from online social media platforms).  The interview questions mainly focused on customers' experience of using the focal hotel mobile app functions to communicate and interact with hotels in exchange for more personalized experience. Twenty interviews were conducted through telephone, online video, and face-to-face in nine months in 2017. Table 2 shows the profile of the participants. All transcripts were recorded and transcribed by the principal investigator. The length of the interviews ranges from approximately 30 to 75 minutes. Data collection was completed when no new information could be further discovered from participants.

[INSERT TABEL 1 HERE]

[INSERT TABLE 2 HERE]

Following Creswell's (2013) narrative analysis approach, the researchers started analysing the data once the first interview was completed. The transcripts were stored, organized, and analysed using Nvivo 11. Narrative analysis refers to "a family of methods for interpreting texts that have in common a storied form" (Riessman, 2008, p.11). As the focus of narrative analysis is on the consequential linking of events and ideas in individuals' stories (Riessman, 2008), it was necessary to isolate and organize different episodes from each individual participant's stories. Thematic analysis is the most popular approach in narrative studies when textual data are collected from oral respondents (Riessman, 2008). The common themes that emerged from the transcripts were identified and compared. The focus was on participants' actions and the contextual elements related to their actions. By organizing and analyzing the narrative segments, researchers were able to identify the patterns and key factors that shape participants' experiences. Member check was conducted by inviting participants to read a summary of the main findings to enhance trustworthiness.

## 4. Results

### 4.1. Pre-Interaction Phrase

#### 4.1.1 Perceived Benefits and Needs

When respondents recalled how they started using the apps, the majority mentioned their hesitations due to uncertainties regarding the benefits of using the apps. For example, informant #17 described communication through the app as a "waste of time" and simply a "gimmick," since making phone calls would be much easier and faster. Informants #1, #5, and #9 also pointed out the minimal differences between

mobile check-in and normal check-in. Additionally, respondents in general considered the service requests they communicated through the apps as preferences but not necessities. They were something nice to have but "not a big deal," according to informant #3, making it more difficult to motivate users to use this function. Respondents in general believed that unless under particularly special conditions, they would only need basic services, and any interaction seemed to be dispensable and unnecessary. The benefit of providing specific personal information to hotels was also doubted. Informant #19 felt "strange" when being asked to answer pages of questions when making a reservation. "*Even if I told them I like a particular singer, they wouldn't buy me a concert ticket anyways*," said informant #5. Informant #1 valued his privacy more than what he might get in exchange for personal information: *"If they want to surprise me, I don't think it's necessary" (Informant #1).*

It seemed to be difficult for the respondents in this study to think of any extra needs during a hotel stay. Informant #11, a frequent business traveler, explained that "no experience is needed" for him most of the time when staying with hotels. Most respondents said it would not matter to them whether personalized service was provided at the hotel. "*At the end of the day, a hotel is a hotel,*" said informant #15. "*If I am staying in a hotel, the most important thing is to sleep,*" informant #8 remarked. Informant #12, also a frequent business traveler, shared similar views:

*"I normally don't need anything. Usually when I am traveling, it's just me. And I am just there long enough to sleep and have breakfast, then I go work out, and I am gone. I couldn't think of anything that I would need from a hotel" (Informant #12).*

In addition to lack of motivation to share information, some respondents indicated their lack of motivation to seek help from the hotel:

*"The communications that we had, regarding restaurant recommendation and reservation, it would be very simple for me to get these things done. I could search for restaurants myself, I could also book a dinner table myself, easy" (Informant #1).*

*4.1.2 Perception of Service Provider*

At the pre-interaction phase, the second-most common factor that constrains the user to initiate interaction is their perception of hotel service. Some respondents hesitated to communicate their needs when they were unsure how the hotel would react. For example, informant #9 decided not to initiate a conversation as she believed that the hotel could not satisfy her request. Informant #1 decided not to express his needs as he believed that hotels often prioritize high-tier guests. Most respondents were reasonable and understood hotel services are subject to availability. In general, the majority of respondents in this study did not have high expectations for hotels' delivery of personalized service based on information shared through the apps:

*"I didn't expect too much from it. When I made the request, I was thinking, ok, maybe I could get what I want, but maybe not" (Informant #15).*

Some respondents shared a belief that only needs that are "special" enough deserve extra attention. For instance, informant #10 did not want to "abuse" the service request function if his needs were not special enough. Informant #8 did not want to ask for anything that may seem unreasonable. Different from a hospital where patients are normally willing to share personal information, it seems hotels are not the place for doing

so: *"Airlines, I want to be interrupted. Your flight is delayed, your flight is not coming, your flight got canceled, please interrupt me…it's good to know the weather, that's cute, that's nice, ok do you want to tell me the local restaurants nearby, but then it becomes a bit annoying because those things we already have, right? We already know what restaurants to go to thanks to Google"* (Informant #11).

*4.1.3 Communication Habit, Personality and Style*

Respondents who text on a daily basis—especially young respondents who grow up with different types of electronic devices—used the mobile instant messaging function with less hesitation. Respondents' communication preferences are also affected by their personalities. For example, informant #1 was an introvert and preferred communicating with machines. Informant #17, who described himself as an old-fashioned person, would be annoyed by a chat window and preferred face-to-face communication. Informant #9 felt recognized as an important customer through face-to-face communications with hotel staff. Tech-savvy respondents showed a higher propensity to interact with hotels using the apps.

Respondents who value regularity less do not expect a personalized setting and were less motivated to share personal information through the apps. *"I believe there are people who like to have everything well-prepared before they arrive so they feel they are VIP and more respected, but I don't have such a need,"* said informant #17. Informants #1, #4, #6, and #7 mentioned they were casual and would not expect any special personalized arrangement during a hotel stay. "*I am not that type of person who demands a lot of things. I don't have to drink a cup of coffee every day at the exact time, or I don't*

*have to sleep on the same pillow every time,"* said informant #6. Informant #7 preferred new experiences that are different from her daily life when travelling.

*4.1.4 Location, Trip Purpose and Travel Companion*

Most respondents' interactions with hotels happened off the hotel premises. Respondents had more communication needs when visiting an unfamiliar location. They found the mobile instant messaging function particularly helpful when their trips were not well-planned: "*When you are at a new and unfamiliar place, you don't know much about everything, and if you don't have friends there, the hotel is in a position to help you out"* *(Informant #9).* Trip purpose also affect participants' perceived needs and benefits of interacting with hotels through mobile apps. Business travelers value efficiency and thus used the app mainly for speeding up the travel process, avoiding human interactions, and gaining self-control. Business travelers perceived lower need for making special arrangements and having extra communication with hotels. Respondents who travelled with more companions tended to have more communication needs.

**4.2 Interaction and Post-Interaction Phase**

*4.2.1 Feedback and Contents*

Respondents' interaction experiences were affected by whether they could receive timely feedback. When timely feedback was not given, the mobile channels became less meaningful. Especially when communication needs arise on-the-go, travelers found timely responses from the hotel particularly critical. Informant #4 was wandering around midnight. She texted the hotel to check if it would have something she needed. "*They*

*held the conversation for a while and still nobody replied to me, and meanwhile the shops outside were starting to close, and we started feeling anxious and were uncertain whether we should buy what we needed or wait for the hotel's reply."* Some respondents felt that a "partition" was blocking their communications, as most of the time they were unsure what would happen next after initiating a conversation: "*I didn't know whether they actually read my special request message…I thought they didn't read it for some reason, so I called them directly and asked"* (Informant #16).

Most respondents appreciated the fact that they could exchange more and clearer contents through mobile channels. Informant #4 appreciated that the mobile chat allowed her to check messages word-by-word to ensure accuracy. Informant #6 praised the hotel representative who used different languages to chat with her. Despite these advantages, some respondents found it difficult to reach mutual understanding with hotels through mobile communications. *"Sometimes I felt like I was asking them one thing, and they answered me another thing,"* said informant #2. Hotels might also need to call their guests to find out what they actually needed: "*When I typed it on the chat function, the person on the other side didn't understand what I was saying. So they called me immediately to find out what it was"* (Informant #6).

*4.2.2 Elimination of Social Context Cues*

While respondents might prefer mobile channels to avoid face-to-face communications, the elimination of social context cues can cause negative emotions and perceptions. Customers could only evaluate the service based on the texts when social cues such as a decent smile or sincere eye contact could not be delivered. For example,

informant #1 was unhappy with the mechanized and rigid replies he received from a service representative: *"They were just patronizing me because they have to reply to guests' messages."* Informant #5 recalled that some of the responses she received were quite *"cold."* Informant #4 and informant #9 shared similar opinions: *"It's just like using Wiki; you ask something, then it answers whatever you asked. It's not like those energetic people who would ask if you need anything else. I didn't feel that"* (Informant #4).

On the other hand, the elimination of social context cues comforted some respondents who felt less embarrassed and were encouraged to communicate their true needs and especially the "unusual" ones. Informant #1 felt less "guilty" when asking for help to make a restaurant reservation. Informants #2 and #7 agreed and shared similar thoughts:

*"Calling is very embarrassing. If you called them and asked them to plan a trip for you, these people didn't even know you. They were not travel agents, and they were not your friends"* (Informant #2).

*4.2.3 Task Characteristics*

Informant #16 would choose other channels, such as the telephone, to ensure efficiency for an important task. Especially, when communicating more complicated issues, participants found it challenging to reach mutual understanding through the mobile apps. Several respondents recalled receiving calls from the hotel to seek clarification after messaging the hotel using the mobile chat function, *"The app was mainly for making the booking, and after that, they helped you make some simple requests, and the rest was not that convenient,"* said informant #9. The app became less

meaningful when only minor issues could be exchanged: *"The requests we made like more shampoos, booking tables, these kinds of easy requests … they might be able to help you with. But to make these types of easy requests, I did not have to use the app… If your request gets a bit more difficult, they cannot help you" (Informant #1)*. While one of the biggest benefits of mobile channels is ubiquitous communication, some respondents found this feature unstable, which affected their experiences when their communication was urgent. *"It depends on the situation. If you need something urgent, they might not get back to you immediately. By the time they get back to you, you've already found another way to solve your problem."*

## 5.  Discussion

The data analysis reveals a number of factors affecting customers' experience of using hotel mobile apps for value co-creation at the pre-interaction, interaction and post-interaction phases (Figure 1). The findings reveal why customers might not always want to interact with hotels, and why interactions through mobile apps might not always be good collaborations in this specific context. At the pre-interaction phrase, whether customers would participate in value co-creation is affected by their individual characteristics and trip characteristics. During the interaction and post-interaction phrase, customers' experience of mobile-based value co-creation is mainly affected by computer-mediated communication (CMC) characteristics. While the impact of individual characteristics on technology use is consistent with previous research (Morosan, 2015a; Morosan and DeFranco, 2016a; Morosan and DeFranco, 2019), prior research has rarely mentioned the potential impact of trip characteristics (location, trip purpose and travel

companion) on customers' preference for personalized experience. The findings imply that business travelers who tend to be more familiar with the destination and travel alone attach higher importance to convenience and efficiency than personalized experience (Lei *et al*., 2019b). Another noteworthy finding is the influence of CMC characteristics on customers' participation experience. In the communication literature, CMC channels have been generally recognized as lean media compare with face-to-face interactions (Walther, 1996). Although contemporary consumers are heavy technology users, our finding suggests that the fundamental differences between face-to-face and online interactions is likely to hinder firm-customer information exchange and the provision of personalized services.

The factors that hinder/facilitate mobile-based value co-creation unearthed in this study suggest that although technologies have supported travelers to co-create value throughout all stages of travel, we should not overlook their limitations (Buhalis, 2019; Zhang, 2019). The findings from previous studies which focus on the antecedents and consequences of technology use (Dorcic *et al*., 2019; Kamboj and Gupta, 2020) and value co-creation (Roy *et al*., 2020) can hardly explain what affects actual use experience which is critical to technology effectiveness and the creation of value-in-use (Lei *et al*., 2019b). Although more advanced technologies will continue to emerge and create new opportunities for firm-customer interactions (Buhalis et al., 2019), understanding real customer needs and personalizing customer experience will continue to be challenging (Femenia-Serra *et al*., 2019). Collecting contextual information and embedding contextual factors into technology-based service is particularly relevant to tourism and

hospitality businesses as on-the-go travelers often face unexpected contextual needs (Buhalis and Sinarta, 2019).

[INSERT FIGURE 1 HERE]

The emerged factors in Figure 1 show that whether a conversation or interaction can be initiated is highly dependent on the participants (i.e., hoteliers rely on customers to communicate their needs and wants). The limited role that hoteliers play in encouraging and facilitating customer participation may explain why customers do not always participate. This reminds us of the service provider's critical role in creating stimuli for interaction, as not all customers may proactively inform their problems or express their needs (Järvi *et al*., 2020). It should be the responsibility of the service provider, rather than the customer, to actively develop interactions and guide the co-creation process. As Svensson and Grönroos (2008, p.307) have stated, "It is not the customers who get opportunities to engage themselves in the supplier's process, but rather the supplier which can create opportunities to engage itself with its customers' value-generating processes".

Several examples in this study show that customers might be unsatisfied due to a discrepancy between what they expected and what they received: Informant #5 asked for a cafe recommendation and received "Starbucks" as an answer. She was disappointed while the hotel staff might think they had provided a good recommendation. Informant #1 also shared her disappointment. "*I asked them to recommend somewhere local citizens would go. Then they found me something which I could immediately tell was search results from the Internet*." The evidence suggests that successful value co-creation is not simply about initiating communication, but communicating effectively in the sense that

the service provider can understand customers' true needs and meet their expectations. This echoes a recent research which suggest that value co-destruction may occur when hotels fail to meet customer expectations (Järvi *et al*., 2020).

## 6. Conclusions, Limitations and Future Research

This study contributes empirical evidence regarding how customers co-create value using mobile apps and why some situations present better opportunities for successful mobile-based value co-creation. It moves beyond users' pre-adoption stage to explore their actual use experience to unearth influential factors that could hardly be captured by prior studies that focused on the antecedents and consequences of technology use. Investigating the interaction process from customer's perspective, the findings summarize the key influential factors and provide a foundation for future research to continue exploring the mechanism of value co-creation. Our findings highlight the unique role of the service providers, rather than the technology functions and attributes, in the service design of value co-creation. When using technologies to co-create with customers, rather than relying on the customers to be proactive, firms should look for ways to create a facilitating environment that is attractive and comfortable for the customers to participate.

In terms of practical implications, this study reminds practitioners their important role despite the availability of smart technologies. Practitioners should continuously search for opportunities to improve themselves, rather than focus on what technologies to adopt. The findings especially call for attention to the importance of creating stimuli for interactions and managing customer expectations. How practitioners can do so effectively

is beyond the scope of this study. The key here is to recognize that insufficient understanding of customer behaviors and poor management of customer expectations impairs the co-creation process and outcome. Practitioners should also improve their abilities to discover customers' true needs and communicate with them effectively. Hoteliers should also consider their capacity to handle the instant mobile chat service if the number of customer users continue to increase. Practitioners should educate customers appropriately by providing clear information and instructions when introducing new technologies.

Readers should interpret the findings with caution as the data were collected from particular groups and analyzed using one technique. Future studies may consider expanding the sample size and collecting data from customers with different characteristics to triangulate the findings. As the data were collected in 2017, future studies may consider triangulating the findings from this study using other research approaches, data analysis techniques, and data collected from other contexts. The findings from this study are applicable only to mobile-based services that share similar features with those investigated in this study. As discussed above, how effective stimuli can be created to facilitate more interactions and how customer expectation can be better shaped are beyond the scope of this study. Future research can explore these practices and provide suggestions to hoteliers.

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