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## Reservation of people-processing services: What does digitization change?

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*While advantages for platform providers (i.e., a share of the respective business) and merchants (i.e., increased operational efficiency) seem obvious, we know less about how customers respond to new forms of online services in traditionally less digitized areas. Drawing on the idea that customer involvement in a service delivery implies a greater degree of responsibility towards successful service execution, we investigate how different booking channels affect perceived booking risk and subsequently, the evaluation of the booking channel's usefulness and the intention to use. The results show that high involvement in booking traditionally less digitized services positively affects users' perceived booking risk and negatively affects users' intention to use the reservation service. Additionally, users' attitudes towards online reservation moderate the influence of involvement on perceived booking risk.*

## 1.      Introduction

Digitization has permeated many traditional industries and aspects of our private lives (MacDonald et al., 2015, Rosner et al., 2014). Examples include smartphone apps for navigating cities, online banking, submitting tax returns online, checking sports activities with special devices, and several other digital services. Recently, many booking services in less digitized areas have been transformed into online services as well. For example, while booking a flight or a hotel online has become "normal" (e.g., Bernardo et al., 2012, Khare; Handa, 2011, Morosan; Jeong, 2008), we observe a trend towards online reservation even in less digitized areas such as booking hairdresser appointments (e.g., Salonmeister), restaurant tables (e.g., book-a-table, Quandoo), doctor visits, and auto repairs. The rationale of such systems follows the rationale of booking a hotel or a flight: increased operational efficiency and service productivity for the vendor (Rust; Huang, 2012). In particular, hotels and airlines are confronted with the managerial challenge of optimizing their utilized capacity and minimizing marginal costs under capacity constraints. Analogously, restaurants and similar people-processing services in less digitized areas seek to optimize their efficiency by integrating information technology. For example, a hairdresser might be able to serve customers more effectively when personnel are not completing phone reservations, as customers self-book merchants' online calendars. However, in contrast to large companies such as hotel chains or airlines, a single merchant pos-

sesses limited resources to invest in digitization and technology-enabled service productivity. Platforms such as 'book-a-table' capitalize on this situation by offering small service providers a scalable mechanism to increase productivity and utilized capacity. A scalable mechanism does not require large investments from merchants beforehand and charges payment based on usage (e.g., a small fee per successful reservation). The potential of these platform approaches is mirrored in a vital venture capital activity. For example, Quandoo, a Berlin-based portal for online reservations, was recently bought by Japanese investors for 200 million Euros (Venturevillage, 2015).

Whereas the advantage for both the platform provider (i.e., a share of the respective business) and the merchant (i.e., increased operational efficiency) seems obvious, we know less about how customers respond to these new forms of online services. The success of these new emerging business models hinges on if and why customers switch from phone to online bookings (Simon; Usunier 2007).

Research on self-service technology (e.g., Bitner et al., 2002, Meuter et al., 2000) may be useful for investigating online reservation services in general and online reservations for less digitized services in particular. This stream of research suggests that customers are no longer passive receivers of (digital) services but actively participate in their creation (Bettencourt, 1997, Meuter et al., 2000, Meuter et al., 2005). According to Ennew and Binks (1999), participation generally comprises three broad dimensions: information sharing, responsible behavior and personal interaction. Specifically, customers must share information with a service provider (or the technology mirroring the provider) to receive personalized treatment (Heidenreich et al., 2014). Responsible behavior implies that customers recognize their duty and responsibility of being an important part of the service delivery process (Ennew; Binks, 1999). Finally, as Yen and colleagues (2004, 9) highlight, "personal interaction […] implies that relationship elements such as trust, support, cooperation, and commitment will be present or emerge."

Drawing on the idea that involvement in a service implies a greater degree of responsibility towards successful service delivery, this research investigates how involvement in different booking channels affects perceived booking risk and subsequently, the evaluation of the booking channel's usefulness and the intention to use. The remainder of this paper is structured as follows. First, we review literature concerning self-service technologies to develop a set of hypotheses concerning involvement and online reservation preference in less-digitized services. Second, we report a pretest of perceptions of complex versus simple services. Third, we provide results of a 2 (involvement in terms of booking channel: online vs. phone) x 2 (service complexity: high vs. low) experimental survey design. Finally, we discuss the implications of these results for both management theory and practice.

## 2.　　Background and Hypotheses

Research on self-services technologies (SST) has a long tradition. Whereas early research related to self-services did not distinguish technology-based from labor-intensive services (e.g., Bateson, 1985), later research on technology-based self-

services revealed contrasting results. Researchers such as Meuter et al. (2000) or Robertson et al. (2016) find that the absence of service personnel might lead to customer satisfaction under specific conditions. Other streams of the literature advocate that an attitude towards human interaction in service encounters will impede the adoption of SSTs (e.g., Dabholkar; Bagozzi, 2002). Researchers further suggest that convenience is a major adoption factor (Berry et al., 2002, Collier; Kimes, 2013).

An emerging form of SSTs is online reservation for services that are usually less permeated by technological advancement. Although there is reason to believe that motives and drivers to adopt such technologies are similar to those for more mature forms of SSTs (i.e., automated teller machines (ATM)), one might also surmise that the non-digitized nature of the actual service exerts an additional influence on adoption or rejection. As for many other SSTs, we do not predict an either-or relationship between online reservation and other forms of booking reservations but accept their coexistence. Relatedly, Simon and Usunier (2007) maintain that people develop a preference for one form of service (e.g., SST vs. employee-contact service) but do not necessarily boycott the alternative. However, for merchants, it is important to know which factors increase usage of the online reservation alternative, as online reservations beget multiple advantages (e.g., reduced costs, increased operational efficiency).

Research has further differentiated service types in terms of involvement. For example, Bitner et al. (1997) distinguish among low involvement, which requires customers to be present during service delivery, moderate involvement, for which customer inputs are crucial to perform a service, and high involvement, where customers co-create the service. In this study, we treat online reservations for less digitized services as a high involvement scenario compared with a phone reservation, as the customer's responsibility to the online booking service is higher (e.g., typing in the correct names and dates). We argue that the form of involvement will affect the perceived booking risk and subsequently, the usefulness of and the intention to use the booking service. We concentrate on usefulness and intention to use because these parameters are among the most studied in adoption research (McKenna et al., 2013). We further control for service complexity, as more complex services might affect role clarity and perceived risk (Cunningham et al. 2005). The conceptual framework of our research is shown in Figure 1.

-- Please insert Figure 1 about here --

Involvement in service delivery creates responsibility for service execution. For example, customers tend to attribute successful service experiences to themselves and unsuccessful outcomes to the service provider (Dong et al. 2008, Zeithaml; Bitner, 2003, Hilton et al. 2013). This tendency holds with regard to technology-mediated co-created services (Heidenreich et al., 2014). Thus, customers possess specific responsibilities in participative services such as online reservations. Research on responsibility suggests that people generally avoid responsibilities when possible (e.g., Riess; Schlenker, 1977). As phone reservations are typically valid alternatives involving less responsibility for successful service execution, a high involvement in the booking process will lower evaluations of perceived usefulness and limit the degree of usage intention. We therefore hypothesize:

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H1: A high (vs. low) involvement in booking processes, in terms of online (vs. phone) reservations, will negatively (vs. positively) affect the intention to use the booking system.

H2: A high (vs. low) involvement in booking processes, in terms of online (vs. phone) reservations, will negatively (vs. positively) affect the perceived usefulness of the booking system.

Another oft-cited outcome of involvement and adoption in the literature is perceived risk (Im et al., 2008). Generally, perceived risk reflects customers' sense of uncertainty regarding the consequences of buying a good or service (Flanagin et al., 2014, Mitchell; Vassos, 1998, Sweeney et al., 1999). The related literature is concerned with various forms of risk, such as financial risk, situational risk, psychological risk, general risk, and performance risk. While many forms of risk may be connected to the scenario of online reservation of less digitized services, we focus on performance risk, defined as the possibility that the technology does not perform as designed and advertised to perform, with the implication of not delivering the desired value (Featherman; Pavlou, 2003). In this respect, high involvement in terms of online versus phone bookings might also be associated with higher performance risk due to increased responsibility because of the technological newness and the technological complexity of online bookings compared with phone bookings. We therefore hypothesize:

H3: A high (vs. low) involvement in booking processes, in terms of online (vs. phone) reservations, will positively (vs. negatively) affect the perceived booking risk.

Indirect effects of being involved in booking a less digitized service are also possible. There is reason to believe that whereas involvement lowers usefulness and the intention to use, it increases associated perceptions of risk, which themselves determine the evaluation of usefulness and the intention to use (Cunningham et al., 2005). Specifically, as involvement is hypothesized to affect perceived booking risk, risk might affect both the evaluation of usefulness and the intention to use. Adoption literature has identified risk as a major impediment to adopting technological products and services (Curran; Meuter, 2005, Lee; Allaway, 2002, Walker et al., 2002). Thus, although direct effects of involvement on usefulness and the intention to use might exist, it is the associated perceived booking risk that ultimately converts involvement in a service into the intention to adopt or to reject the booking system. We therefore hypothesize:

H4: The path from high (vs. low) involvement in booking processes to the intention to use will be mediated by perceived booking risk.

H5: The paths from high (vs. low) involvement in booking processes to perceived usefulness will be mediated by the perceived booking risk.

Research on the effectiveness of SST has identified consumer traits such as novelty-seeking, self-efficacy while using SST, self-consciousness, and the need for interaction with an employee as important determinants of SST adoption (Oyedele; Simpson, 2007, Dabholkar; Bagozzi, 2002). Similarly, social presence, defined as the extent to which a medium allows users to experience others as psychologically present (Fulk et al., 1987), has been studied in the context of SSTs (Hassanein; Head, 2007). Typically, personality traits become attitudes once people have evaluated a product or service (Aizen, 1987). For online reservations of less digitized services, people

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often already possess pre-adoption experiences for making reservations in terms of interactions with employees (e.g., calling to make a reservation for a hairdresser) and specific forms of technology-mediated booking (e.g., booking a flight online, ordering a pizza online) (Curran; Meuter, 2005). There is reason to believe that customers already possess formed attitudes in relation to online reservations (and interactions with employees). We therefore surmise that an attitude towards online reservation (ATOR) and an attitude towards interaction with a service employee (ATEI) might affect how customers evaluate associated risks of booking, whether online or via phone. Specifically, customers who exhibit high levels of ATOR might evaluate online reservation for less digitized services as less risky in terms of performance risk than might other customers. Customers who feel more comfortable when interacting with service personnel (i.e., customers high on ATEI) might interpret their involvement in new forms of online reservations such as online reservations of less digitized services as riskier than might other types of customers. We therefore hypothesize:

H6: The relationship between high (vs. low) involvement and the perceived booking risk is moderated by attitudes towards online reservation such that the relationship is stronger for customers scoring low on attitudes towards online reservations.

H7: The relationship between high (vs. low) involvement and the perceived booking risk is moderated by attitudes towards employee interaction such that the relationship is stronger for customers scoring high on attitudes towards interactions with service employees.

# 3.     Methodology

## 3.1.     Pretest

As we aimed to control for service complexity in reservation scenarios, we began this research by assessing which types of services are perceived as complex versus less complex or simple. To recruit participants, we created a HIT on Amazon Mechanical Turk (MTurk) that asked participants to complete a survey. Participants were recruited with a posting that read: "Answer a short survey on different services; takes 2 min at maximum". As a requirement for participation, workers had to be US-based citizens with a minimum HIT approval rate of 95% on at least 100 tasks (Oppenheimer et al. 2009). We offered a compensation of US$0.20 for completed tasks, amounting to US$6 per hour, and asked for 85 responses. We did not include questions on controls and demographics but included an attention check question that read "please answer the following question with 'disagree'", as recommended by Peer et al. (2014).

Participants were required to evaluate four different types of services, namely, restaurant, hairdresser, car workshop, and dentist. This selection was motivated by service contexts for which online reservations have recently become available, and thus, services for which online booking is comparably new (compared with booking flights or hotels). Each service was accompanied by a description of an average service in the respective area and a picture illustrating the main purpose of the service. On five point-Likert-scales, MTurk workers evaluated each service in terms of attitude towards the service, associated risk with using the service, switching costs, involve-

ment, and complexity. After excluding inattentive respondents (i.e., respondents who failed to pass the attention check), our sample contained 72 MTurk workers. Because we were particularly interested in service complexity, MTurk workers were asked to rank services along a continuum from very complex to not complex at all. The associated question read: "Which of the following services would you consider the most complex from a customer point of view? Please rank." If a respondent, for example, ranked restaurants least complex and dentists most complex, restaurants would receive a value of 4, whereas dentists would receive a value of 1. With this procedure, dentists achieved a mean score of 1.57; car workshops, 2.21; hairdressers, 2.79; and restaurants, 3.43. These results indicate that booking a dentist service is regarded as more complex in terms of customer involvement compared with booking a car workshop, a hairdresser appointment, or a table at a restaurant. According to this ranking, the difference in complexity of booking restaurants and booking dentists is greatest, so we used restaurants and dentists as proxies for simple and complex services, respectively.

## 3.2.    Research Design and measures

To test the hypotheses, we relied on a 2x2 between-subject scenario-based experimental research design. In particular, we manipulated involvement in terms of the booking channel (online vs. phone) and the service complexity (dentist vs. restaurant). For each of the four cases, we provided a short scenario stating that respondents should imagine they are booking a reservation for their favourite restaurant or a trusted dentist. This approach was based on the logic that respondents are willing to book a reservation particularly when they are familiar with the provider. Finally, the scenario stated whether respondents should imagine calling the service provider or using a newly introduced online reservation system. The online scenario included screenshots of existing reservation platforms for physicians and restaurants to make the situation more realistic. Participants were randomly assigned to one of four experimental groups.

Before respondents experienced the stimulus, they were required to answer questions concerning whether they had used online reservation systems before, their attitude towards online reservations and interactions with employees, the intensity with which they use the respective service, and their demographics, such as age, gender, and education. To measure attitudes (i.e., ATOR and ATEI), we used semantic differentials, following Heise (1970, see Appendix I). ATOR was checked by asking respondents to evaluate online booking (e.g., booking concert tickets or hotel rooms) in general. Similarly, respondents were asked to rate how important they perceive interaction with employees during the reservation process.

After respondents read and became familiar with the scenario (the next button was invisible for 25 seconds), they answered a set of questions that included model variables and manipulation check questions. For all constructs, we used seven-point-Likert scales ranging from '1' = fully disagree to '7' = fully agree. To measure the booking risk, we relied on the notion of performance risk (e.g., Kaplan et al., 1974) and used three items adapted from Curran and Meuter (2005). Usefulness was also captured by items inspired by Curran and Meuter (2005). The items were adapted to the context and to compare booking at a desk (for both online and phone bookings). Finally, the intention to use was measured with a single item that read: "I would use

this way of booking the service". The items, factor loadings, and reliabilities for the scales are specified in Appendix I.

The survey also contained various questions on demographics and potential control variables. Apart from gender, age, and education, we captured respondents' frequency of usage of the respective service (not the booking option) on a scale from '1' = very seldom to '7' = very often.

## 3.3.    Sample

We recruited participants with the help of two trained student assistants. The assistants posted the link to our online survey on various Internet platforms, such as Facebook and Twitter, using their personal and friends' networks. While this approach poses disadvantages in terms of representativeness, it is advantageous for finding an appropriate number of respondents who are familiar with online booking and reservation. To obtain a sufficient number of responses, participants could agree to be considered for a raffle for one of five Amazon vouchers worth $10 each. In total, 589 individuals clicked the survey link. However, only 308 individuals completed the entire survey, resulting in a completion rate of 52.3%. Of these 308 responses, we excluded 26 responses for reasons of failing attention check questions (e.g., "Please answer the following question with 'disagree'") or failing to recall the scenario, which was shown to them (e.g., incorrect answers to "what kind of service was described in the scenario" and "how did you have to book your service in the scenario"). The remaining 282 responses represent 155 male responses and 127 female responses. The demographic structure mirrors the sampling strategy: two respondents younger than 18 years; 166 respondents between 18 and 25 years; 80 respondents between 26 and 35 years; 15 respondents between 36 and 45 years; 16 respondents between 46 and 55 years; 6 respondents between 56 and 65 years; and no respondent older than 65 years. In terms of education, 16 respondents possessed a basic high school degree; 30 respondents had completed an apprenticeship; 139 respondents had a university-entrance diploma; 90 respondents had a college degree; and nine respondents preferred not to indicate their highest degree of education.

Due to dropouts and inattentive respondents, the cells are not equally sized. The restaurant/online group received 66 responses; the restaurant/phone group received 66 responses; the dentist/online group received 72 responses; and the dentist/phone group received 75 responses.

## 3.4.    Manipulation checks

To determine whether our experimental design captures degrees of service complexity with respect to the booking channel, we conducted manipulation checks. Service complexity was assessed by a single item that read "Consider making a reservation for this type of reservation at a desk. How complex would you rate the process?" and that was scored from '1' = simple to '5' = complex. The dentist scenario should reflect a complex service while a restaurant scenario should represent a comparably less complex service. Following Perdue and Summers (1986), ANOVA tests were conducted to check whether the manipulation was successful. As expected, the results indicated that a dentist service is more complex than a restaurant service (com-

plexity: $M_{Restaurant}$ = 2.63 (SD = 1.22) and $M_{Dentist}$ = 3.31 (SD = 1.30), F (1,280) = 20.169, p <. 001). Similarly, we assessed whether the manipulation of phone vs. online reservations generated differences by measuring involvement. According to various streams of literature, online services require a higher level of customer involvement compared with offline services (e.g., Bitner et al., 1997, Meuter et al., 2005). We measured involvement with a single item that read "Compared to the service provider, my participation in the reservation process is higher" on a 7-point-Lickert-scale ranging from 1 = 'fully disagree' to 7 = 'fully agree'. Respondents reported significantly higher levels of involvement for online reservations compared with phone reservations, indicating that the manipulation of booking channels was successful ($M_{Phone}$ = 3.61 (SD = 1.72) and $M_{Online}$ = 4.36 (SD = 1.73), F (1,280) = 13.357, p <. 001). Overall, these findings provide evidence of a successful manipulation due to our experimental design.

# 4.     Results

First, we assessed whether our measures capture what they should by conducting a confirmatory factor analysis (CFA) for variables consisting of multiple items. Thus, we integrated 14 items representing booking risk, usefulness, ATOR, and ATEI into an AMOS CFA model and a maximum likelihood estimator. The resulting model fit the data reasonably well, as indicated by the following statistics: $\chi2/df$ = 1.492, goodness-of-fit-index (GFI) = .95, comparative fit index (CFI) = .99, and root-mean-square-error-of-approximation (RMSEA) = .041. All constructs revealed satisfactory item reliability (Composite reliability > .7 for all constructs). Except usefulness, which had an average variance extracted (AVE) of .48, all constructs revealed an AVE greater than 50%. Additionally, all square roots of AVEs exceeded any correlation with any construct in support of discriminant validity (Fornell; Larcker, 1981). Table 1 displays all correlations, AVEs, and square roots of the AVEs in italics.

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We predicted that involvement in a service in terms of a booking channel (online vs. phone) affected the perceived booking risk, the usefulness, and the intention to use. We tested these predictions with ANOVAs (see Tables 2-4). We formulated neither hypotheses concerning the complexity of services nor interaction hypotheses. However, we report results for service complexity and interaction effects to provide a complete picture. First, the intention to use was hypothesized to be affected by involvement (i.e., booking channel: online vs. phone). The results of an ANOVA supported this hypothesis ($F_{involvement}$ (1,280) = 13.302, p < .001, $\eta^2$ = 0.046). Service complexity did not affect the intention to use, nor did the interaction of involvement and service complexity (Table 2). For usefulness, the results show that the outcome is unaffected by involvement (Table 3). Finally, the perceived booking risk (Table 4) is affected by involvement in terms of the booking channel ($F_{involvement}$ (1,280) = 26.323, p < .001, $\eta^2$ = 0.086) and the service complexity (dentist vs. restaurant) ($F_{complexity}$ (1,280) = 5.010, p < .05, $\eta^2$ = 0.018). Thus, whereas H1 and H3 are supported, H2 received no support.

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## 4.1. Mediation results

Hypotheses 4 and 5 predicted the indirect effects of involvement on both usefulness and intention to use. Specifically, based on theoretical insights, we predicted that the perceived booking risk would mediate this relationship. To test our prediction, we used the SPPS macro PROCESS, which can calculate indirect effects and confidence intervals (Hayes, 2013). The results of this procedure are presented in Table 5. First, we regressed booking risk on involvement and included age, gender, use intensity, service complexity (manipulated as dentist vs. restaurant), ATOR, and ATEI as control variables (Model 1). Consistent with H3 and Table 4, involvement had a significant effect on booking risk; a first indicator of mediation. Second, involvement was used as the independent variable, whereas intention to use and usefulness functioned as dependent variables (Models 2 and 3). The results revealed that involvement affects neither usefulness nor intention to use when the perceived booking risk is introduced to the model. In turn, booking risk is associated with usefulness (b = -.42, se = .05) and intention to use (b = -.62, se = .06), thus definitively indicating a mediation effect. To further quantify this mediation effect, specific indirect effects were calculated with 1000 bootstrap samples (Preacher & Hayes, 2004). The indirect effect of involvement on usefulness was significant (b = -.35, se = .07), as indicated by a bootstrap confidence interval that does not include zero (LLBI = -.5363; ULBI = -.2178). Similarly, the indirect effect of involvement on intention to use was significant (b = -.51, se = .12; LLBI = -.7726; ULBI: -.2910). In summary, the regression results and the indirect effects support H4 and H5. Recall that the direct effect on usefulness as predicted in H2 was not significant, whereas the indirect effect is (H5). This finding resonates with the suggestion by Zhao et al. (2010), who maintain that mediation might exist even in the absence of a significant direct effect.

## 4.2. Moderation results

We predicted two moderation effects on the relationship between booking channel and booking risk, namely, the effects of ATEI and ATOR. We conducted two separate regression analyses in PROCESS to discern whether such moderation effects exist. First, to assess the moderation effect of ATEI (H7), we modeled the booking channel (online vs. phone) as the independent variable and the booking risk as the dependent variable. We further integrated controls such as age, gender, use intensity, service complexity, and ATOR. We then integrated the moderator, that is, ATEI, as well as the booking channel x ATEI interaction. Both components of the interaction were mean centered prior to their integration into the model (Echambadi; Hess 2007). The resulting regression analyses revealed an explained variance of $R^2 = .14$ in booking risk. Except ATOR (b = -.23 (.10), p < .05), no predictor was significant. The independent variable booking channel (online vs. phone) is significantly related to booking risk (b = .82 (.16), p < .001). The moderator ATEI has a significant effect on booking risk (b = -.21 (.09), p < .05), whereas the interaction term has no effect (b = .05 (.18), n.s.), thus indicating the absence of a moderation effect of ATEI.

Second, to test for the moderation of ATOR, we followed the same procedure. The same set of controls were used, but ATOR was replaced by ATEI and vice versa. A regression analysis in PROCESS with the booking channel as the independent variable and ATOR as the moderator explained approximately 16% of the variance in booking risk. The booking channel (online vs. phone) had a significant effect on booking risk ($b$=.82 (.15), p<.001), as did ATOR ($b$ = -.24 (.10), p < .05). In contrast to the regression analysis with ATEI as a moderator, here, the involvement x ATOR interaction had a significant effect on booking risk ($b$ = -.66 (.20), p<.01), thus indicating a moderation effect and H6. To further analyze the moderation effect, we first followed Spiller et al. (2013) and compared different regions of the moderator; we then used simple slope analyses (Aiken & West 1991). For low levels (-1SD) and medium levels of ATOR, the relationship between booking channel and booking risk is significant ($b_{low}$ = 1.32 (.21), p <. 001; $b_{medium}$ = 82 (.15), p < .001). For high levels of ATOR, the relationship is insignificant ($b_{high}$ = .32 (.22), n.s). Moreover, the simple slopes for low and high values of ATOR indicate that customers with a low value of ATOR show significantly higher values of booking risk in the online scenario, whereas no difference was observed in the phone scenario (Figure 2).

-- Please insert Figure 2 about here --

# 5. Discussion

This study began by discussing how new forms of online reservation services for less digitized people-processing services differ from well-known self-service and e-service technologies. Acknowledging that the new forms of online reservation might prompt user behaviour to deviate from behaviour known for SSTs and e-services, we employed an experimental scenario-based survey design to investigate how booking less digitized services online differs from making phone reservations. Drawing on the idea that involvement in service execution implies responsibility, the results show that booking online is associated with higher performance risk perceptions and a lower intention to use the reservation service. Additionally, ATOR was found to moderate the relationship between involvement in a booking channel and perceived booking risk such that people with a positive attitude towards online reservation in general evaluate online bookings for less digitized services as less risky. Surprisingly, service complexity influenced neither booking risk nor usefulness or intention to use.

## 5.1. Implications for management

Management practice might benefit from these results in the following ways. First, these results indicate that customers prefer making phone reservations compared with online reservations when booking less digitized people-processing services, such reservations for restaurants and dentists. This result is supported by the fact the people report lower levels of associated risks and higher levels of intention to use for phone reservations compared with online reservations. Thus, merchants that intend to install online reservation systems must be aware of the fact that people might continue making phone reservations and thus must prepare service personnel to respond to customer calls.

Second, this research provides implications for triggering online reservations of less-digitized services. Here, merchants are advised to incentivize customers to book online to change preferences in booking behavior towards the online alternative (Simon & Usunier, 2007). These incentives should differ for people who book for the first time (ex-ante incentives) versus frequent online booking customers (ex-post incentives). Additionally, the fact that ATOR acts as a moderator as it reduces the effect of involvement on booking risk may lend support for advertising customers high on ATOR first. To assess which customers are high on ATOR, merchants could include corresponding questions on feedback cards. These customers might act as market mavens and recommend the booking service to late adopters. Similarly, merchants or reservation platform operators could identify customers who are generally reluctant to adopt new products on services based on scales measuring passive innovation resistance (Heidenreich; Kraemer, 2015). Passive innovation resistance refers to individuals' inclination to resist changes in general, apart from specific product or service innovations. Identifying these customers may facilitate a more prudent use of marketing budgets.

## 5.2. Limitations and avenues for further research

As with all research, this research has limitations. First, in terms of sampling, respondents for the main study were recruited via online channels. Accordingly, the respondents are likely to possess a specific attitude towards the online world in general. While this recruitment strategy was partly intended to capture the intentional behavior of people already familiar with online reservations, future research could nevertheless investigate how individuals who are not digital natives respond to an experimental design such as the one employed in this study. Additionally, this study built on parts of the e-service adoption literature but did not use established concepts such as the technology acceptance model in their fullest sense. Future research therefore could replicate the findings using less parsimonious theoretical models. Finally, as with other studies on service adoption (e.g., Wang et al., 2006), this study captured only intentional behavior, yet no real booking behavior. Although the link between intentional behavior and actual behavior is known to exist, this link is nevertheless typically mediated by context-specific factors. Thus, future research could investigate mediation and moderation effects concerning the relationship between intentional and real behavior in booking less digitized services online.

## 6. Conclusion

This study is among the first studies to address the adoption of online reservations for less digitized people-processing services. In particular, a scenario-based experiment differentiated whether customers made an online reservation or a phone reservation. The study furthermore distinguished a rather complex service (i.e., visiting the dentist) from a comparatively simple service (i.e., restaurant dining). The results indicate that the booking channel affects associated performance risks and subsequently, the intention to use the respective booking channel. Additionally, customers who already possess a positive attitude towards online reservation in general perceive online bookings to be less risky compared with customers who do not possess a positive attitude.
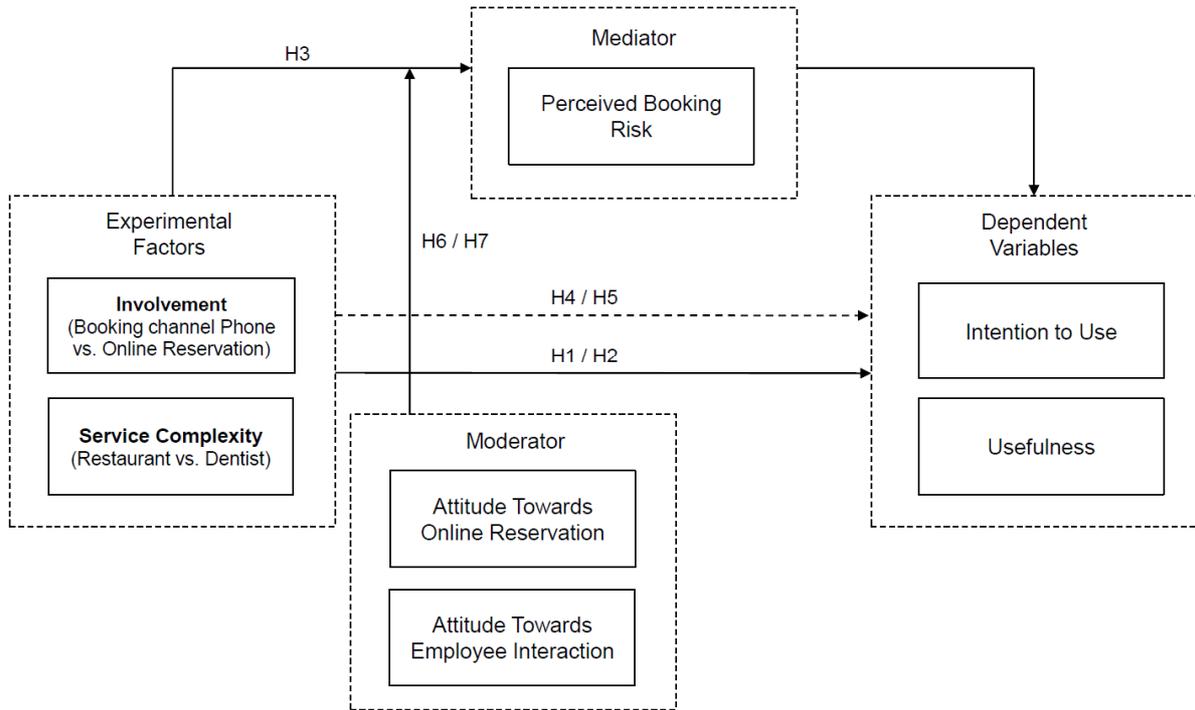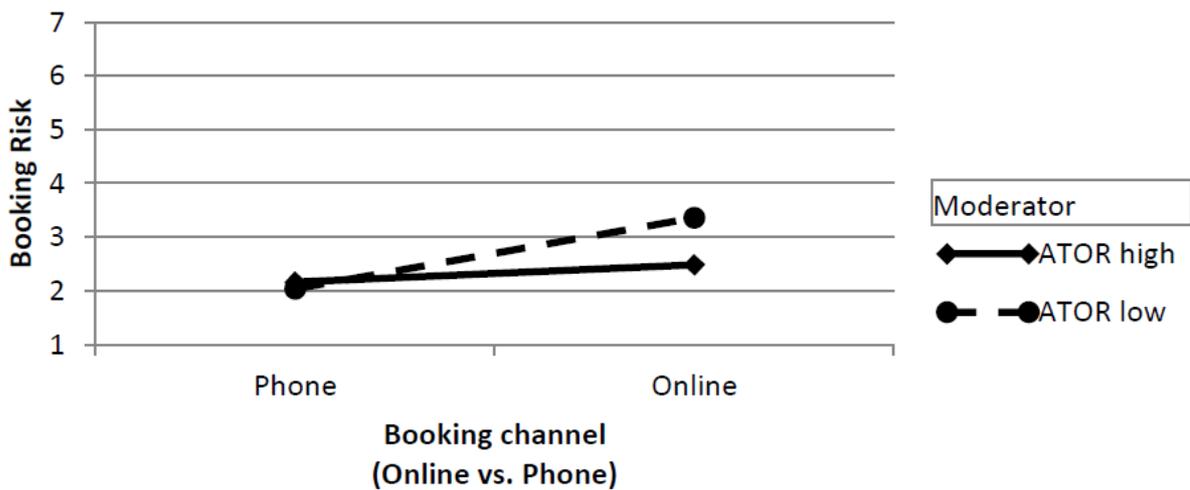
**Figure 1.** Proposed conceptual model



**Figure 2.** Simple slope analysis

|  | CR | AVE | Usefulness | Booking risk | ATOR | ATEI |
|---|---|---|---|---|---|---|
| Usefulness | 0.72 | 0.48 | *0.69* | | | |
| Booking risk | 0.89 | 0.73 | -0.46 | *0.85* | | |
| ATOR | 0.91 | 0.78 | 0.25 | -0.11 | *0.88* | |
| ATEI | 0.92 | 0.78 | 0.10 | -0.14 | 0.10 | *0.89* |

**Table 1.** Correlations of multi-item scales

| | Involvement (I) | | F | | |
|---|---|---|---|---|---|
| Service Complexity (C) | Low: Phone | High: Online | C | I | C × I |
| High: Dentist | 6.21 (1.30) | 5.26 (1.89) | | | |
| Low: Restaurant | 5.88 (1.56) | 5.44 (1.63) | 0.16 | 13.302*** | 1.78 |

**Table 2.** Mean values of intention to use and results of the ANOVA (DV: Int. to use)

| | Involvement (I) | | F | | |
|---|---|---|---|---|---|
| Service Complexity (C) | Low: Phone | High: Online | C | I | C × I |
| High: Dentist | 5.45 (1.30) | 5.17 (1.33) | | | |
| Low: Restaurant | 5.46 (1.22) | 5.34 (1.12) | 0.392 | 1.688 | 0.299 |

**Table 3**. Mean values of usefulness and results of the ANOVA (DV: Usefulness)

| | Involvement (I) | | F | | |
|---|---|---|---|---|---|
| Service Complexity (C) | Low: Phone | High: Online | C | I | C × I |
| High: Dentist | 1.86 (1.05) | 2.82 (1.40) | | | |
| Low: Restaurant | 2.36 (1.39) | 3.01 (1.41) | 5.010* | 26.323*** | 1.016 |

**Table 4.** Mean values of booking risk and results of the ANOVA (DV: Booking Risk)

|  | Model 1 | Model 2 | Model 3 |  |
| --- | --- | --- | --- | --- |
|  | Booking Risk | Usefulness | Intention to use |  |
| *Independent variable* |  |  |  |  |
| Involvement (high vs. low) | .83 (.15)*** | .14 (.14) | -.20 (.16) |  |
| *Mediator* |  |  |  |  |
| Booking Risk |  | -.42 (.05)*** | -.62 (.06)*** | H4/H5 |
| *Controls* |  |  |  |  |
| Age | -.08 (.08) | .01 (.07) | .09 (.08) |  |
| Gender | -.10 (.15) | -.16 (.13) | .32 (.16)* |  |
| Use intensity | .03 (.07) | .02 (.06) | .06 (.07) |  |
| Service complexity (high vs. low) | -.33 (.19) | -.20 (.16) | .02 (.21) |  |
| ATOR | -.21 (.10)* | .31 (.08)*** | .39 (.10)*** |  |
| ATEI | -.21 (.09)* | .02 (.08) | -.02 (.09) |  |
|  |  |  |  |  |
| $R^2$ | .14 | .27 | .36 |  |
| N | 282 | 282 | 282 |  |

Note: ***$p < .001$, **$p < .01$, *$p < .05$, and $^+p < .1$

**Table 5.** Mediation results

**Appendix I.** Items, factor loadings and reliability

| | Factor Loadings (CFA) |
|---|---|
| *Booking Risk* | |
| I feel safe when using this type of reservation. ( R ) | .87 |
| I am sure that my reservation is entered correctly. ( R ) | .90 |
| There are only fewer hazards that something goes wrong when using this reservation. ( R ) | .78 |
| *Usefulness* | |
| This form of reservation is useful. | .86 |
| Compared with a reservation at a front desk, this form of reservation is more convenient. | .50 |
| Compared with a reservation at a front desk, this form of reservation makes reservations simpler. | .65 |
| *Attitude towards online reservation* | |
| In general, I regard booking online (e.g., hotel rooms, flights) as… | |
| bad – good | .87 |
| negative – positive | .98 |
| useless – useful | .79 |
| *Attitude towards employee interaction* | |
| In general, I regard interaction with employees (e.g., having an opportunity to specify my demands) during a purchase as… | |
| bad – good | .93 |
| negative – positive | .91 |
| useless – useful | .81 |

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