# Why and when does the valence of online consumer reviews influence service evaluations?

**Structured Abstract**

**Purpose**: Extensive empirical literature has shown that online consumer reviews (OCR) valence has a lower impact on purchase decisions than OCR volume. We aim to provide a better understanding of why this would be the case by (1) reconsidering an alternative conceptualization on heuristic underlying mechanisms rather than a persuasive one, which might be more appropriate for services compared to products, and (2) taking into account important boundary conditions about service perceptions at the individual level, rather than at the product or platform level.

**Design/methodology/approach**: Two experiments manipulated the valence of online consumer ratings for fictitious hotels. In study 1, we also manipulated volume of online consumer ratings and asked respondents to evaluate a hotel before service interaction (perceived quality, risk and purchase intentions). In study 2, we additionally manipulated positive and negative service experience with scenarios, and asked respondents to evaluate a hotel after service interaction (re-purchase intentions).

**Findings**: First, we find that OCR valence may act as a signal for unobservable quality which may lower purchasing risk. OCR volume, though perceived credibility, reinforced the effectiveness of this signal. Second, we find that the effect of OCR valence on repurchase intentions is stronger when service experience (service familiarity) is negative (low) rather than positive (high).

**Originality/value**: We contribute to the existing literature by suggesting an alternative signaling explanation of the effects of OCRs, as well as providing moderating results for service perceptions after service interactions.

**Key-words**: Online consumer reviews, signal, quality, risk, service evaluations, hotels.

# Why and when does the valence of online consumer reviews influence service evaluations?

**Introduction**

How do online reviews influence how consumers evaluate their service? Recent service research has started to devote attention both to the role of how customers influence other customers (McColl-Kennedy, Cheung and Ferrier 2015) and to resource integration (Vargo and Lusch 2016) in what Lusch and Vargo (2014) term the service ecosystem. Online consumer reviews (OCR) have been measured and operationalized through two main concepts: OCR valence, also referred to as favorability, sentiment or polarity, such as OCR may be "either positive, negative, or neutral" (Liu 2006, p. 75); and OCR volume, "the total amount of eWOM interaction" (Liu 2006, p.75), that is, the total number of reviews; as well as secondary composite metrics such as volume-valence, variance, dispersion, etc. (Babić et al., 2015). Several meta-analyses on hundreds of empirical studies confirm the extensive research effort targeted at better understanding the effects of these different metrics on sales (Floyd et al., 2014; You et al., 2015; Babić et al., 2016). Yet, one noteworthy result is the stronger impact of OCR volume compared to the impact of OCR valence (Babić et al., 2015); through a stronger awareness effect rather than a persuasive one (Liu, 2006).

Prior literature has also investigated the boundary conditions associated with the effects of OCRs. However, while some studies explored consumer-level moderating factors such as internet experience (Zhu and Zhang, 2010) or consumption goals (Zhang et al., 2010), most of the existing research focuses on products (see Babić et al., 2015).

Although this prior literature is valuable and insightful, it also shows some limitations, which we can summarize in two questions. First, why the effect of valence may not be significant? In order to answer this empirical question, we may need to go back to theory to better understand the process though which valence influences purchase decisions. In fact,

little attention has been given to the underlying mechanism that links OCRs to purchase decisions. The authors usually postulate that OCRs, conceptualized as a specific form of communication, impacts purchase decisions though a "persuasive" intermediary stage (Liu, 2006). However, (a) this assumption has not been empirically tested, and (b) might be more appropriate for products rather than services. Hence, an alternative mediating conceptualization based on signaling theory might be better suited for service settings. In fact, although consumers may process OCRs exhaustively through a persuasive central route, OCRs may also be conceptualized as a signal that consumers process in a peripheral heuristic route. A heuristic based approach would explain a lower relative impact.

Second, despite the wealth of research considering the boundary conditions of the effects of OCRs for services (e.g. hotels, restaurants, movies and television shows), there is little research on the moderating role of individual service perceptions. This lack of research is problematic, as customer perceptions are individual (Helkkula et al. 2012; Holmqvist, Guest and Grönroos 2015) and depending on context (Vargo, Maglio and Akaka 2008). For example, the literature is still limited in terms of familiarity with the service category, with the exception of Zhu and Zhang (2010) who studied the related - yet different - concept of Internet familiarity. The authors found that the impact of OCR on sales is stronger when targeting consumers with greater Internet familiarity. Hence, one might expect a similar result such that the effect of OCR on purchase decision is stronger with a greater level of accumulated service familiarity. However, we actually posit and find the opposite effect, that is, the effect of OCR on purchase decisions is stronger for consumers with a low level of familiarity with the service category.

Therefore, this study seeks to investigate the underlying mechanism in the relationship between OCRs and service evaluations. Recognizing the relevance of the service ecosystem (Lusch and Vargo, 2014; Vargo et al. 2008), we posit that understanding consumer reviewers,

and how they influence other consumers, constitute an important addition to the service field. We show that the positive impact of OCR valence (mean rating) on purchase intentions is sequentially mediated by perceived quality and perceived risk. This result is consistent with the signaling theory for unobservable quality that reduces risk for services, conceptualized within the framework of experience goods (Nelson, 1970). In addition, we explore the boundary conditions of the signal's effectiveness. We show that OCR volume (i.e., number of reviews) positively influences the perceived credibility of OCRs. In turn, the effect of OCR valence on perceived quality is stronger when the perceived credibility of OCRs is higher versus lower. Finally, we find in Study 2 that the effect of OCR valence on repurchase intentions is stronger when service experience (service familiarity) is negative (low) rather than positive (high).

**Conceptual framework**

While eWOM (e-word of mouth) involves informal electronic communications among consumers about product and services (Liu, 2006), OCR may be defined as a specific form of eWOM that consists in a (a) personal communication, (b) in the form of a qualitative comment and/or a quantitative rating, (c) from an online rating system. While textual reviews are usually not mandatory, online rating system systematically include both individual and aggregated quantitative reviews (number of reviews, mean ratings).

In this paper, we focus on services which can be conceptualized as experience, whose characteristics are difficult to observe prior to consumption (Grönroos, 2001), e.g. movies, television shows, restaurants, or hotels. In the case of experience goods, consumers suffer from unobservable quality and face an important risk because of asymmetrical information. One possible solution to this problem is the use of signals (Akerlof, 1970; Spence, 1973), which are "actions that parties take to reveal their true types" (Kirmani & Rao, 2000). Given

this definition, researchers have studied various "actions" (e.g. advertising, warranties or money-back guarantees) conceptualized as communications for which the firm plays the role of the "party". However, Dodds (2002) suggest that consumers may also play this role, by demonstrating that consumers' product evaluations reported in Consumer Reports are an effective market cue. Along this line, we consider that electronic inter-personal communications such as OCR might signal higher quality and reduce risk in service evaluations.

*OCR valence as a signal of quality that reduces risk*

Because OCR are conceptualized as a form of communication, most of the existing literature posits that the underlying mechanism that links the OCR valence to purchase decisions is based on persuasiveness: "the role of WOM valence, because of its positive/negative nature, is more of a persuasive one that influences consumer attitudes" (Liu, 2006, p. 78). Consistent with the ELM model in communication literature (Petty and Cacioppo, 1981), OCR may be processed through a persuasive central-route, which requires a high level of elaboration. Such a process involves an exhaustive cognitive analysis of the OCR' textual content. However, we can imagine that aggregated OCR information such as valence (mean rating) and volume (number of reviews) may be processed with a more heuristic peripheral route, characterized by a lower level of elaboration.

Building on the signaling theory, we posit that OCR may act as a signal for unobservable quality that reduces risk. This assumption is also consistent with the literature about perceived quality and perceived risk. First, perceived quality, defined as the "consumer's judgment about a product's overall excellence or superiority" (Zeithaml, 1998, p. 3), was found to be a mediator in the relationship between extrinsic[1] signals and consumer

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[1] Signals such as advertising and guarantees, which are not part of the physical product.

value (Dodds et al., 1991). Second, we can define perceived risk as the subjective attitude toward the consequences of any action that the consumer cannot anticipate with certainty, and some of which are likely to be unpleasant (Ross, 1975). Previous research suggests that "word-of-mouth functions as an important risk reliever" (Ross, 1975, p. 6) and that perceived risk has a negative impact on purchase decisions (Cox and Rich, 1964).

Finally, we posit that the impact of OCR valence on purchase intentions is sequentially mediated by perceived quality and perceived risk. This general hypothesis can be detailed in three steps. First, OCR valence positively influences perceived quality of the experience goods. Second, perceived quality negatively influences perceived risk. Third, perceived risk negatively influences purchase intentions.

**H1**: The positive impact of OCR valence on purchase intentions is sequentially mediated by perceived quality and perceived risk.

*The boundary conditions of the valence's effectiveness*

While we have conceptualized how OCR valence may act as a signal for unobservable quality, we discuss next the conceptual foundations that explore the boundary conditions of the signal's effectiveness. We distinguish two main sets of variables that play a potentially moderating role before service interaction (on purchase intentions) and after service interaction (on re-purchase intentions).

*Before service interaction*. First, a large volume of OCR (number of reviews) makes OCR seem more credible. As the number of reviews increases, the valence of OCR (overall mean rating) converges to the true quality of the product or service (Zhu and Zhang, 2010). Hence, when OCR volume increases, consumers are more confident that the OCR accurately reflect product quality. However, can OCR volume be processed as an effective cue to influence purchase decisions? Let us take a simple example: a product has an important

volume of OCR (e.g. 500 reviews) but a low valence (a mean of 1.5 on a 5 point rating scale): it seems unlikely that OCR signal higher quality and that consumers will choose this product. Nevertheless, the signaling theory suggests that a signal is more effective when it is credible (Boulding & Kirmani, 1993). Thus, we posit that OCR volume moderates the signal's effectiveness such that the effect of OCR valence on perceived quality is stronger when perceived credibility of OCR is higher vs. lower.

**H2a**: OCR volume has a positive impact on perceived credibility of OCR

**H2b**: In turn, the effect of OCR valence on perceived quality is stronger when perceived credibility of OCR is higher vs. lower.

*After service interaction.* Second, as the perceived service quality depends on the actual service experience exceeding or equaling the expected service (cf. Grönroos, 1984), we further posit that the impact of OCR valence on the decision to engage with the service provider a second time is higher when the service experience is negative. If the service experience is positive, the customer is likely to perceive added value and thus more likely to return regardless of what online reviewers had said. In the case of a negative service experience, however, a highly positive OCR valence could still indicate that the service usually is better than the one the customer experienced, thus making the customer more likely to give the service provider a second change even after a negative service experience. We thus hypothesize:

**H3**: The effect of OCR valence on repurchase intentions is stronger when service experience is negative rather than positive.

Last, we expect that the level of service familiarity moderates the relationship between OCR valence and purchase decision in the same direction – controlling for service experience.

Zhu and Zhang (2010) showed that the effect of OCR on sales is stronger when targeting consumers with greater Internet familiarity. This result occurs because greater Internet experience supposedly reduces search costs and enables convenient comparison between alternatives. On the contrary, we expect that the effect of OCR on repurchase intentions is stronger for consumers with a low level of accumulated service familiarity. By definition, unfamiliar consumers have no clear idea about what makes a good or a bad service. Hence, their purchase decision may be more influenced by OCR compared to familiar consumers.

**H4**: The effect of OCR on repurchase intentions is stronger when the level of service familiarity is low rather than high

**Study 1 – OCR valence as a signal for unobservable quality**

*Method*

This study used a 2 (OCR valence: 2.7 vs. 4.5 on a 5 point rating scale) × 2 (OCR volume: 8 vs. 249 reviews) between-subject experiment. Respondents were randomly assigned to one of the four different groups. A total of 115 students from a French business school participated in this computer-based experiment and received bonus course credit for their participation.

Participants were shown an Internet page of a fictive hotel ("Hotel Bella Berlin", in Berlin Germany) from a fictive website ("www.reservation-hotel.com"). A photo and a neutral description of the hotel were added to make the offer more realistic. We chose the stimuli of valence and volume based on existing OCR for hotels in Berlin from three different websites. For example, the 1000 hotels in Berlin on Hotels.com have between 1 and more than 1000 reviews, with ratings varying from 1.5 to 5 on a 5 rating scale. We selected less extreme values of valence (2.7 vs. 4.5 on a 5 rating scale) and volume (8 vs. 249 reviews) to reduce the possibility of floor effects, i.e. the stimuli being too negative or too positive (Elder

& Krishna, 2012). The manipulated values of OCR valence and volume appear on the bottom left part of the page (see Appendix for an example of the stimuli used in study 1 translated from French to English).

Moreover, we controlled for price and hotel stars. To minimize price-oriented quality evaluations (Suwelack et al., 2011), we chose an average price level for hotels in Berlin on a sample of 1500 hotels found on HotelHotel.com. Similarly, we selected a 3 star hotel, as this is the most common type of hotel found in Berlin for a sample of more than 1000 hotels on Booking.com.

We first ran a pre-test to check the success of our manipulation. 64 respondents were randomly assigned in one of the four conditions. The valence manipulation check question included a single item scored on a seven-point Likert scale ("the mean rating of online consumer reviews is high"). The manipulation check was significant ($M=3.00$ vs. $M=4.77$, $F(1,62)=17.98$, $p<.05$). The volume manipulation check question included a single item scored on a seven-point Likert scale ("there are many reviews about this hotel"). The manipulation check was significant ($M=3.43$ vs. $M=4.47$, $F(1,62)=6.18$, $p<.05$).

The hotel's perceived quality was measured with three items ("reliable", "of good quality" and "safe"; $\alpha=.86$) on a seven-point scale adapted from Dodds et al. (1991). Participants' perception of risk toward the hotel was measured with three items ("Booking this hotel is risky", "I think I would make a mistake if I book this hotel" and "Booking this hotel would make me feel anxious"; $\alpha=.88$) adapted from Stone & Gronhaug (1993) and Cox et al. (2006). Perceived credibility of the OCR was measured with three items ("I can trust consumer reviews about this hotel", "I can rely on the user reviews about this hotel" and "the online consumer reviews about this hotel are credible"; $\alpha=.88$). Last, intentions of booking the hotel were measured with two semantic-differential items ("not likely-likely" and "probably not-probably"; $r=.83$).

*Mediation analyses (H1)*

Sequential mediation analyses were conducted though Hayes's (2013) macro with 5000 boostrapped samples (PROCESS Model 6). First, a regression was performed on hotels' perceived quality with OCR valence as the independent variable. The effect of OCR valence was positive and significant ($\beta$=.56, $t$=3.02, $p$<.01).

Second, a regression was performed on hotels' perceived risk with perceived quality and OCR valence as the independent variables. The effect of OCR valence was negative and significant ($\beta$=-.62, $t$=-2.88, $p$<.01) as well as the effect of perceived quality ($\beta$=-.43, $t$=-4.17, $p$<.01).

Third, a regression was performed on purchase intentions with perceived quality, OCR valence and perceived risk as the independent variables. The effect of perceived risk is negative and significant ($\beta$=-.45, $t$=-4.65, $p$<.01), however, the effects of both valence and perceived quality were not significant (respectively $p$=.44 and $p$=.72).

Finally, the indirect path of OCR valence on purchase intentions though perceived quality and perceived risk was significant, with the 95% confidence interval excluding zero (.03 – .28). These results indicate complementary mediation (Zhao et al., 2010). H1 is supported.


*Moderation analyses (H2)*

First, we ran an ANOVA with perceived credibility of OCR as the dependent variable and OCR volume as the independent variable. As we excepted, the OCR's perceived credibility was higher for a large volume of 249 reviews (M=4.87) than for a low volume of 8 reviews (*M*=4.37, *F*(1,113)=5.72, *p*<.05). As expected, note that OCR volume did not have a direct effect on perceived quality (*p*=.29) or purchase intentions (*p*=.34). H2a is supported.

Second, a regression was performed on hotel's perceived quality with independent variables (i) OCR valence, (ii) perceived credibility of OCR and (iii) their interaction (PROCESS Model 1; Hayes, 2013). The results showed a significant two-way interaction between OCR valence and perceived credibility of OCR ($\beta$=.45, $t$=2.86, $p$<.01). To decompose this interaction, we used the Johnson-Neyman technique to identity the range(s) of perceived credibility for which the simple effect of the valence was significant (Spiller et al., 2013). This analysis revealed that there was a significant positive effect of OCR valence on purchase intentions when perceived credibility was greater than 4.24 ($\beta_{JN}$=.45, $p$=.05), but not when perceived credibility was lower than 4.24. H2b is supported. Fig. 1 depicts this interaction effect.

[Insert Fig. 1 about here]

**Study 2 – The moderating role of service perceptions on the effects of OCR valence**

Previous literature has established the strong consequential effects of OCR valence on purchase decisions. However, little is known about the potentially moderating effect of service experience or service familiarity on this relationship. The aim of Study 2 is to demonstrate that the effect of OCR on repurchase intentions is stronger when the service experience (level of service familiarity) is negative (low) rather than positive (high).

*Method*

We use a 2 (OCR valence: 2.7 vs. 3.9 on a 5-point rating scale) $\times$ 2 (service experience: positive vs. negative) between-subject experiment. We collect data through the online panel of a marketing research company, in which respondents receive either payment or coupons for participation. 403 French participants were randomly assigned to one of the

four conditions of this web-based study, with 51% women and an average age of 39 years (from 18 to 69).

*Setup*. Participants were shown an Internet page of a fictional hotel ("Hotel Bella Fiorentina", in Florence, Italy) from a fictional website ("www.reservation-hotel.com"). We added a photo and a neutral description of the hotel to make the offer more realistic in line with existing sites such as Booking.com and Hotels.com (see Appendix A). In order to further make the webpage more realistic along the lines of existing review sites, we also added five written comments from previous customers, including positive (e.g. "friendly staff", "good localization") and negative features of the hotel ("noisy", "staff not friendly"). All comments were modeled based on real comments left by customers on actual review sites. Recent service research suggests that customers perceive less risk when using their first language (Holmqvist and Grönroos, 2012), and this is mirrored by most online review sites automatically displaying reviews in the customer's first language at the top of the list of available reviews. In line with these practices, all the five displayed comments from previous customers were in French. The respondents were required to look at the hotel page and then the experience scenario for at least one minute and could stay on the page as long as they wanted before continuing the questionnaire.

*Manipulations*. We chose the stimuli of online consumer ratings based on real ratings for Florence hotels from three existing websites, which varied from 1.5 to 5 on a 5-point rating scale. We selected less extreme values of OCR (low: 2.6 vs. high: 3.9 on a 5-point rating scale), to reduce the possibility of floor effects, i.e., the stimuli being too negative or too positive (Elder and Krishna, 2012). The number of reviews was the same in the two conditions, 249 reviews.

We manipulated the positive and negative valence of the situational service experience using two hypothetical textual scenarios of about 500 words each (see Appendix B).

Compared to the positive scenario in which all aspects of the hotel were good, the negative scenario includes several negative hotel features such as waiting at the reception, sensing a smell in the room, and noise in the room that made it a bit difficult to sleep. To keep the scenario realistic, none of the problems was exaggerated and all problems the customer experienced were based on real and common problems taken from actual hotel reviewing sites.

*Manipulation check*. We verify our manipulation with a service experience scale ($\alpha$=.86), composed of the three following 7-point differential scale items "Bad/good", "Unfriendly/friendly", "Low-level/high-level"). The manipulation check was significant, the service experience was rated more positively in the positive than in the negative scenario ($M$=5.86 *vs.* $M$=4.59, $F(1,401)$=105.12, $p$<.01).

*Measures*. The main dependent variable was the repurchase intention, the intention to return to the service provider ($\alpha$=.84) measured on a 3-item scales scored on a 7-point Likert format, including "If I have the opportunity, I would stay in this hotel again", "As long as the service quality remains the same, I would rather return to this hotel rather than discover others in the neighborhood", and the reversed "In the future, I will not come back to this hotel". Moreover, we measured the level of accumulated familiarity about the service category adapted from Söderlund (2002), including the three following items: "I know a lot about hotels", "I consider myself to be an experienced hotel guest" and "I know very well what characterizes good and bad hotels" ($\alpha$=.86).

*Results*

First, we ran an ANOVA on repurchase intentions with OCR valence and the service experience as the independent variables, controlling for service familiarity. The main effects of OCR valence and service familiarity are not significant (respectively $p$=.12 and $p$=.20).

The main effect of service experience is significant ($F(1,398)=354.24$, $p<.01$), such that repurchase intentions are stronger when the service experience is positive ($M=5.49$) rather than negative ($M=3.17$). More importantly, the interaction between OCR valence and service experience is significant ($F(1,398)=4.36$, $p<.05$), as depicted in Figure 3. We explore this interaction with planned contrasts. In the positive experience condition, there is no difference in repurchase intentions between the two valence conditions ($p=.70$). However, in the negative experience condition, repurchase intentions are stronger for a high OCR valence ($M=3.39$) compared to a low OCR valence ($M=2.94$, $F(1,398)=6.67$, $p<.05$). H3 is thus supported.

Second, we performed a regression on repurchase intentions with independent variables (i) OCR valence, (ii) the level of accumulated familiarity with the service category and (iii) their interaction, and controlling for the manipulated service experience (PROCESS Model 1; Hayes, 2013). The results show a significant two-way interaction between OCR valence and the level of service familiarity ($\beta=-.19$, $t=-2.07$, $p<.05$); Figure 4 depicts this interaction effect. To decompose this interaction, we use the Johnson-Neyman technique to identity the range(s) of the level of consumer experience for which the simple effect of OCR valence is significant (Spiller et al., 2013). This analysis reveals that there is a significant positive effect of OCR valence on repurchase intentions when the level of familiarity with the service category was lower than 4.28 ($\beta_{JN}=.24$, $p=.05$) but not when the level of familiarity with the service category was higher than 4.28, thus supporting H4.

Last, we also ran a similar regression on repurchase intentions with independent variables (i) service experience, (ii) the level of accumulated familiarity with the service category and (iii) their interaction, and controlling for the manipulated OCR valence. The interaction between service experience and service familiarity is not significant ($p=.30$).

**General discussion**

This study contributes to the existing service literature online consumer reviews by providing a better understanding on how and when OCR valence may influence service evaluations.

First, this work illuminates the cognitive process underlying the effects of OCR valence on purchase decisions. In Study 1, we show that the effect of OCR valence on purchase intentions is sequentially mediated by perceived quality and perceived risk. In other words, OCR valence may act as an effective signal for unobservable quality and reduce risk in the case of experience goods, whose product characteristics are difficult to observe before consumption. This conceptualization differs from the existing literature, in which the effect of OCR valence is supposed to be "persuasive" through a central route with a high elaboration level (i.e., an exhaustive cognitive analysis of textual content). We show that aggregated information such as the overall mean rating of OCRs may influence consumer decisions though a simpler and more heuristic way. Since a heuristic route may be less predictable than a persuasive route, our conceptualization is consistent with the finding that OCR valence has a relatively lower impact that OCR volume (Babić et al., 2015).

Second, this research contributes to the OCR literature by exploring the boundary conditions in the relationship between OCRs and purchase decisions. Specifically, we show that the valence of OCR (i.e., overall mean rating) is a more effective signal of quality when associated with a large volume of reviews. This result is consistent with the view that consumers are more confident that OCRs accurately reflect product quality when the volume of OCRs increases. However, we do not find a direct effect of OCR volume on purchase intentions, whereas previous studies with aggregated data found a significant impact of volume on sales. The inconsistency between these results has a simple explanation. The search algorithms used for browsers and online rating systems favor products and services

with a large volume of OCRs. Hence, although OCR volume displayed on a product's web page is not a signal for quality and does not directly influence purchase intentions, the number of reviews might have a direct impact on sales because consumers are more likely to consult an offer with a large number of reviews.

Third, our results demonstrate that service perceptions such as service experience or service familiarity moderate the relationship between OCR valence and repurchase intentions. If the customer perceives the service to be good, there is no difference between high and low OCR valence. However, in the negative scenario that represents a service failure, the customers' repurchase intentions are significantly higher for a higher OCR valence. This result contributes to the service literature by partly contradicting the existing order of credibility in services messages by Duncan and Moriarty (1997) who posited that WOM is more credible than the actual service interaction. Our results contradict this order, as we show that customers who are satisfied with the service they received tend to trust their own experience and no longer pay much attention to the OCRs they read before engaging in the service. However, in line with Duncan and Moriarty (1997) we find that if the customer is dissatisfied, customers who have read positive reviews are more willing to give the service firm a second chance. This findings may be linked to consumers who have read positive reviews being more likely to think that their own negative experience was an exception, while customers who have read negative reviews are reinforced in their own negative evaluation. Our findings thus add to the extant literature by adding an important condition to the order of credibility in service messages, where the order proposed by Duncan and Moriarty (1997) would seem to hold up in the case of a service failure but become less relevant after a good service encounter.

Fourth, we show that the level of service familiarity further moderates the relationship between OCR valence and repurchase intentions. On one hand, previous literature has found

that the effect of OCR valence on sales is stronger when targeting consumers with greater Internet familiarity (Zhu and Zhang, 2010) as this familiarity reduces search costs and enables convenient comparisons between alternatives. On the other hand, we contribute to the literature by showing that the effect of OCR valence on repurchase intentions increases as the level of service familiarity decrease. In other words, it means that compared to consumers who are familiar with the kind of service in which they engage, consumers with less familiarity are more sensible to differences in OCR valence as they do not have specific expectations in terms of what constitutes a good or bad service in the service category.

*Implications*

Results from Study 1 indicate that OCR valence may act as a signal of unobservable quality, and that perceived credibility plays an important role for consumers. The findings of this study underline the importance of signaling higher trust in the online rating systems for e-commerce firms. Several online platforms were criticized with the growing number of fake reviews. If such online platforms have no power on the content of the reviews, the may increase perceived credibly though a better selection, moderation, and restitution of OCR. In sum, review websites can invest in making the online rating system more reliable, and communicate this results to consumers who are looking for a credible source of information to reduce purchase risk.

The implications from Study 2 are two-fold. On the one hand, this study suggest that managers should be concerned with having good OCR valence, but more importantly, they heavily invest in creating a positive consumer experience. As a matter of fact, the impact of consumer experience is relatively stronger than the impact of online ratings. In a way, if the service provider offers a nice consumer experience, it can outshine medium or even lower online ratings. On the other hand, the study shows that consumers' own experience are more

important than other consumers' experiences in determining their evaluation and re-repurchase intentions. This carries important implications in the sense that service providers need to invest in convincing customer to "try" the service. In this regard, they might offer promotions or discounts, especially for targeted customers who are booking a service for the first time.

*Limitations*

First, a single product category limits the generalizability of this work. Further research may replicate these findings in other categories. However, we believe the results to be relatively general in the case of experience goods. Second, our samples are limited to students and the empirical stimuli involve hypothetical hotel options. Third, a single hotel option was assigned to each respondent, although consumers usually compare different offers. Fourth, there is a limitation about the realism in Study 2. One might ask (1) why customers would visit a certain hotel when they know it has a low rating, (2) how they feel about a low (high) rating and a positive (negative) experience. In order to answer these questions, we ran an ANOVA on perceived realism ("The situation described in this scenario might happen in reality"). While the effect of OCR is not significant ($p=.11$), the effect of service experience is significant ($F(1,399)=28.74$, $p<.01$). However, respondents felt that the negative scenario ($M=6.26$) was more realistic than the positive scenario ($M=5.72$). Moreover, the interaction effect between OCR and the service experience was not significant ($p=.85$). There was no difference in realism within the negative experience condition ($p=.31$), or within the positive experience condition ($p=.20$). Hence, these results rule out the possibility that current results are more demand effects rather than effects that could be observed in real life.

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**Appendix A –** Example of a stimulus used (Study 2)

## www.reservation-hotel.com ®

| Hotels | Flights | Rentals | Backpack | Forum |

>> Home > Hotels > Florence, Italy > 1 room 2 adults

### Hotel Bella Fiorentina

Florence, Italy

**75 €**

Price for one night (1 double room 2 adults)

| **Description** | Map | Reviews | | **Book** |

**Localization**
The hotel Bella Fiorentina is located in the city center of Florence, in a quiet area and close to touristic attractions.

**Features**
The hotel offers a restaurant and a bar. Breakfast is included with the room. The staff offers concierge services and a help desk for sightseeing tickets. The property has designated areas for smoking.

### 3.9 on 5

Rating on 249 consumer reviews

Mean rating from the clients of www.reservation-hotel.com

**Rooms**
Air-conditioned rooms include hair dryers and complimentary toiletries. Wired high-speed Internet Wifi is free. Televisions have satellite channels. In addition, housekeeping is offered daily.

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249 reviews sorted by : **Date** ▽ | Note

| Jean | 4 | + The localization<br>+ The view | − No French TV channels |
| Colette | 4 | + Localization near the centre<br>+ Friendliness of staff | − Noise |
| Elodie | 5 | + Nice staff<br>+ Nice view<br>+ Quietness of the rooms | − Too much AC<br>− Paying parking |
| Charles | 3 | + Quiet room<br>+ Clean and comfortable | − Poor reception from the staff |
| Fanny | 4 | + Kindness and smiles<br>+ Localization | − No soundproofing!! |

**1-5 on 249 reviews**

<< 1 | 2 | 3 | ... | 35 >>

**Appendix B** – Scenarios for the service experience (Study 2)

Negative: It is Friday afternoon and you arrive in Florence, where you have booked two nights at Bella Fiorentina via reservation-hotels.com. A taxi from the airport drops you off at the hotel in the historical centre of the city. When you arrive at the hotel, you have to wait a couple of minutes as the receptionist is talking on the phone. She then checks you in and gives you the key to your room.

You notice that your room looks exactly like the pictures on Reservation-Hotels. Both the room and the bathroom are nice but there is a slight smell in the bathroom. The room is at the first floor with a view of the street outside. After unpacking your bags, you swiftly leave the hotel to have a first look at Florence. After some hours of sightseeing you return to the hotel. At the reception, you ask the receptionist for advice about a restaurant for the evening. She says that there is a good restaurant at the other side of the river, and gives you the address of that restaurant. You decide to take her advice and go to the restaurant, and you have a nice meal. After the dinner, you walk around a bit to look at Florence at night before returning to your hotel. You try to sleep but notice that there is no sound isolation in the room, and you can hear both people in street outside the hotel as well as people talking in the room next to yours. You eventually fall asleep, but are awaken two times during the night by sounds from outside.

The next day you have planned several activities. In the morning, you follow a tour of Tuscany. In the afternoon, you visit the largest art gallery in Italy, the Uffizi gallery. It is early evening when you get back to the hotel, and this time there is another receptionist. You ask for advice for things to do in the evening. He recommends a visit to a different restaurant. He says it is by the river and that it is possible to have drinks there later in the evening, and he gives you the address. You go to the restaurant he recommends; the meal is good and the atmosphere later at night is also very nice with lots of people relaxing and having drinks. You get back to your hotel quite late. Just like the previous night, there is some noise from outside and you wake up three times during the night.

On Sunday your flight is at 13:30 so you have time for a final stroll in Florence in the morning before going to the hotel to check out. The receptionist says that there is a shuttle close to the hotel going to the airport. You pay 150€ by credit card for the two nights, the receptionist then informs you that you also need to pay 6€ in cash, 3€ per night for the city tax on hotels. Having paid your hotel, you take the shuttle and head out to the airport to fly back to France.

Positive: It is Friday afternoon and you arrive in Florence, where you have booked two nights at Bella Fiorentina via reservation-hotels.com. A taxi from the airport drops you off at the hotel in the historical center of the city. When you arrive at the hotel, you are immediately greeted by the receptionist who welcomes you warmly to the hotel and wishes you a nice stay in Florence. She checks you in and accompanies you to your room.

You notice that your room looks exactly like the pictures on Reservation-Hotels. Both the room and the bathroom are nice and clean. The room is at the top floor with a view over the roofs of Florence. After unpacking your bags, you swiftly leave the hotel to have a first look at Florence. After some hours of sightseeing you return to the hotel. At the reception, you ask the receptionist for advice about a restaurant for the evening. She smiles and says that her own favorite restaurant is tucked away in a small alley at the other side of the Arno river, and gives you a map of the city where she draws you the way to go.

You decide to take her advice and go to the restaurant, and you have a nice meal. After the dinner, you walk around a bit to look at Florence at night before returning to your hotel. The bed in your room is very comfortable and you fall asleep almost immediately, sleeping well until the morning.

The next day you have planned several activities. In the morning, you follow a tour of Tuscany. In the afternoon, you visit the largest art gallery in Italy, the Uffizi gallery. It is early evening when you get back to the hotel, and this time there is another receptionist. You ask for advice for things to do in the evening. He recommends a visit to a different restaurant. He says it has a nice view over the river and that later at night it turns into a nice lounge where people come to have drinks and relax. Just like the other receptionist, he draws you the route to the restaurant on the map. You go to the restaurant he recommends; the meal is good and the atmosphere later at night is also very nice with lots of people relaxing and having drinks. You get back to your hotel quite late. Just like the previous night, you again sleep very well.

On Sunday your flight is at 13:30 so you have time for a final stroll in Florence in the morning before going to the hotel to check out. The receptionist asks if you have enjoyed your stay, and she offers to call you a taxi but also says that there is a shuttle leaving just 100 meters from the hotel, going directly to the airport. You pay 150€ by credit card for the two nights and the receptionist wishes you a nice trip home. Having paid your hotel, you take the shuttle and head out to the airport to fly back to France.
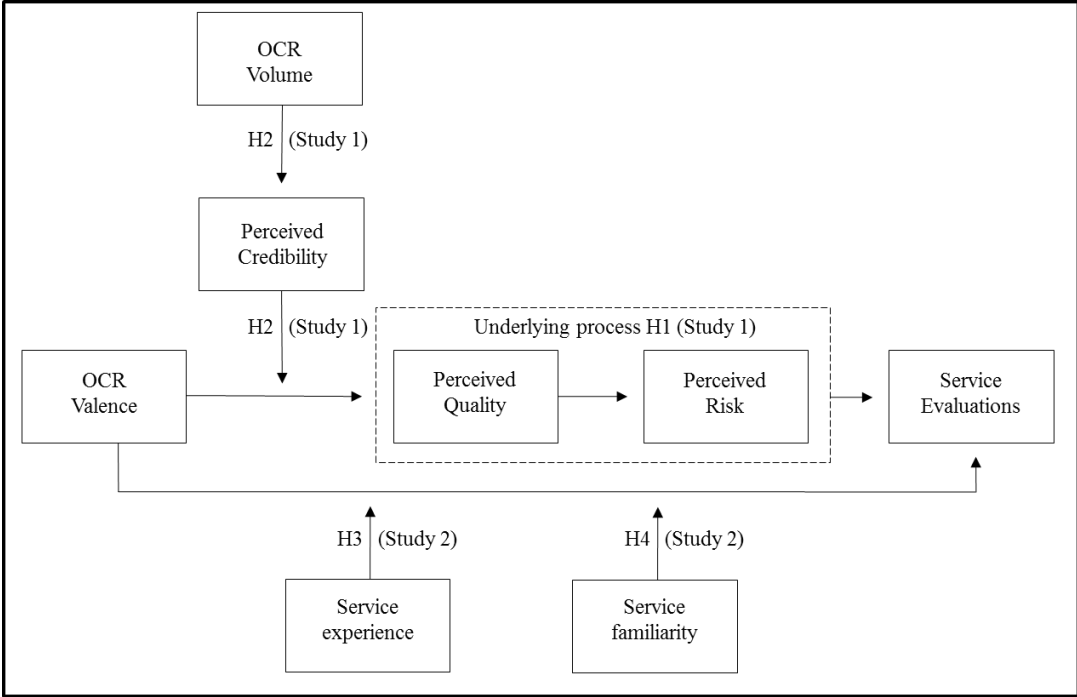
**Figure1**. Conceptual framework

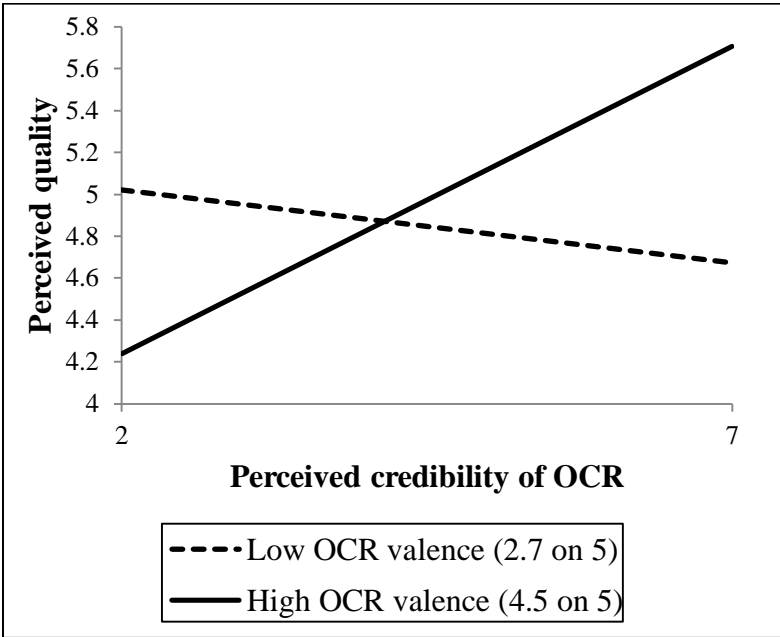**Figure 2**. Interaction effect between OCR valence and perceived credibility of OCR (Study 1)

**Figure 3.** Interaction effect between OCR valence and service experience (Study 2)
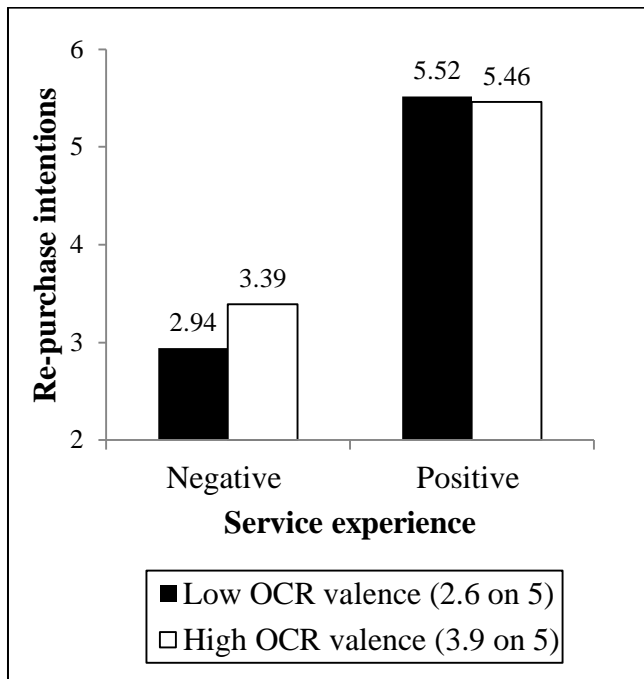
**Figure 4.** Interaction effect between OCR valence and the level of service familiarity (Study

2)