When Credibility Truly Matters Online: Investigating the Role of Source Credibility For the Impact of Customer Reviews

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ABSTRACT
This research shows differential effects of source credibility in an online customer review (OCR)-context. Drawing on the heuristic systematic model’s notion regarding the co-occurrence of systematic and heuristic processing we show that source credibility exerts a persuasive effect when OCRS are positive (non-diagnostic) but not when they are negative (diagnostic).

INTRODUCTION
The internet provides consumers extensive opportunities to share their positive and negative experiences, opinions and sentiments towards products or brands in the form of online comments. Within recent years, online customer reviews (OCRS), i.e., peer-generated product evaluations posted on company or third-party websites (Mudambi and Schuff 2010), have become increasingly popular among consumers who regularly consult OCRs in all stages of the purchasing process (Filiieri 2015). The practical importance of OCRs within the marketing communication mix is well recognized among scholars. A rich body of academic studies supports the notion that OCRs can exert a strong influence on consumer decision-making (Filiieri and McLeay 2013; Senecal and Nantel 2004; Smith, Menon, and Sivakumar 2005) and product purchases in different categories (e.g., electronics, hotel rooms) (Cui, Lui, and Guo 2012; Zhu and Zhang 2010).

The direction and strength of the persuasive effect of OCRs are dependent on the valence of the message, i.e. whether it is negative or positive, and on the credibility of its source. Research suggests that the credibility of the message source is particularly important online (e.g., Dou et al. 2012) as a predictor of OCRs’ persuasiveness (Cheung et al. 2009). Source credibility of OCRs refers to the extent to which the reviewer is perceived as a knowledgeable source for product information and can be trusted to give an objective opinion on the product (Goldsmith, Lafferty, and Newell 2013). It is widely assumed that in the online context, credibility perceptions act as a key moderator of OCR influence, in that highly credible positive (negative) information is more influential than low-credibility positive (negative) information (e.g., Pan and Chiou 2011). In this research we show that this understanding may be too simplistic. Drawing on an extension of the heuristic systematic model (Chaiken 1980) regarding the co-occurrence of systematic and heuristic processing (Chaiken, Liberman, and Eagly 1989; Chaiken and Maheswaran 1994), we shed light on the differential effects of source credibility in an OCR context. Specifically we show for two different types of products (search and experience goods) that source credibility exerts a persuasive effect only when OCRs are positive, but not when they are of negative valence.

BACKGROUND
According to the dual-process models the ‘heuristic-systematic model’ (HSM, Chaiken 1980) and the ‘elaboration likelihood model’ (ELM, Petty and Cacioppo 1986), individuals apply two different modes of information processing to form their judgments. When motivation and ability to process a given piece of information are sufficiently high, people engage in systematic processing (HSM) or follow a central route (ELM) which means that they use considerable mental effort to scrutinize the content of a message. However, when motivation or cognitive capacity are low, individuals adopt heuristics and simple decision rules (e.g., friends or experts can be trusted) to make their judgments. One of the key assertions of the HSM is that when individuals switch from heuristic to systematic information processing because they are motivated and capable of doing so, this does not rule out the possibility that heuristic processing may still be adopted (Bohner, Chaiken, and Hunyadi 1994). Instead, the model posits that the two modes can occur concurrently. Chaiken et al. (1989) argue that the influence of a heuristic cue is, however, often attenuated when individuals process a message systematically because they draw their judgmental confidence from the message content. Yet, when individuals are motivated to process systematically, either they may be unable to do so or the message content does not provide unequivocal information that enables them to come to a conclusion, so that the persuasive impact of heuristic cues is enhanced. In their seminal study on the co-occurrence of heuristic and systematic processing, Chaiken and Maheswaran (1994) show that source credibility has a persuasive effect under systematic processing when the information provided is ambiguous. When the information is clear, on the other hand, source credibility does not exert an effect when individuals are motivated and able to engage in systematic processing.

In the current research context, we argue that the valence of an OCR determines whether it is perceived as clear or ambiguous. Findings on the negativity bias, i.e. that people value negative information more than positive information (e.g. Baumeister et al. 2001; Rozin and Royzman 2001), suggest that negative information is, in general, less ambiguous than positive or neutral information (Herr, Kardes, and Kim 1991). This is because negative information is more diagnostic of the character of an entity (person, product or firm) (Skowronski and Carlson 1987). Positive information, on the other hand, is open to multiple interpretations (Hoch and Deighton 1989), because even the worst product can have at least some positive attributes (Herr et al. 1991). On the internet, the ambiguity of positive OCRs is aggravated by the anonymous environment that facilitates unethical marketing communication in the form of faked reviews (Mayzlin, Dover and Chevalier 2012) or the removal of unfavorable comments by the marketer or platform owner. Doh and Hwang (2009) contend that it is especially in higher-involvement situations that consumers become suspicious about positive eWOM messages. Furthermore, negative compared to positive peer information is sparse in the online context (Bromer and Hoog 2010), which makes negative OCRs also more notable, attention-grabbing and salient (Willemsen et al. 2011) than positive OCRs.

OCRs are usually read by consumers to learn more about a certain product or service which they are considering purchasing. Thus, it can be assumed that the users of OCRs are at least moderately motivated to process the message and form an accurate judgment of the respective product or service. When the OCR is of negative valence, i.e. unambiguous and diagnostic, message content is scrutinized and used for judgment formation. Information about the message source may be noticed. Its effect is, however, attenuated because sufficient
confidence in the judgment can be drawn just from the message content (Chaiken et al. 1989). When the OCR is positive, on the other hand, message content alone is not sufficient to form a judgment because it is rather non-diagnostic and open to multiple interpretations. Thus, consumers will apply the source-credibility heuristic in addition to the content provided in the OCR (see Chaiken and Maheswaran 1994). High levels of perceived source credibility are likely to trigger the simple decision rule “knowledgeable persons’ product recommendations can be trusted” that influences an individual’s message judgment by influencing his/her thoughts, which ultimately determines message acceptance (Chaiken and Maheswaran 1994).

From the above discussion, we hypothesize an interaction between OCR valence and source credibility on product attitude and purchase intention:

Hypothesis 1: a) When OCR valence is negative, consumers’ product attitudes and purchase intentions are influenced by message content and not by source credibility. However, b) when OCR valence is positive, consumers’ product attitudes and purchase intentions are influenced by message content as well as source credibility.

When consumers process positive OCRs, they take the information on the credibility of the source into account for their judgment formation. When source credibility is high, the arguments given in the OCRs should be perceived to be of higher quality compared to when credibility is low (e.g., Chu and Kamal 2008). Thus, we expect the effect of source credibility on product attitudes and purchase intentions to be mediated by perceived argument quality. We define OCR argument quality as the individuals’ subjective evaluation of the arguments conveyed in the message as strong and cogent on the one hand vs. weak and specious on the other (Petty and Cacioppo 1981). Thus, our second hypothesis reads:

Hypothesis 2: The effect of source credibility on product attitudes and purchase intentions in the case of positive OCR valence is mediated by perceived argument quality.

We expect these effects to be stable across different types of products. Consequently, in order to ensure the external validity of our argument, the hypotheses were tested across two replicative studies which focus either on search goods (study 1) or on experience goods (study 2).

STUDY 1

Study 1 compares the effects of positive (vs. negative) information in OCRs on product attitude and purchase intention in review situations that provide information from high- (vs. low-) credibility sources. Fictitious reviews for a fictitious digital camera were used to manipulate OCR valence and source credibility in an online experiment. eWOM experiments frequently use digital cameras as representatives of products that are of relevance to the target audience and thus allow the construction of a realistic experimental setting. Digital cameras are sound examples of search goods (e.g., Pan and Chiu 2011).

Method

Design, participants, and procedure

A 2 (OCR valence: positive vs. negative) × 2 (source credibility: high vs. low) between-subjects full factorial design was applied to test the proposed hypotheses. The participants were 195 (68 % female, M = 25 years) students from several German-speaking universities, randomly assigned to one of the experimental conditions. By participating in the experiment, students got the chance to win an Apple iPod Nano.

Participants were told to imagine that they visited a webpage with a product description and several OCRs in the course of their pre-purchase information search for a digital camera. In the high source-credibility condition, participants received the information that knowledgeable and trustworthy peers had provided product reviews. In the low source-credibility condition, the reviews were supposedly written by dubious and anonymous reviewers. Next, participants were exposed to the product description (including a picture of the digital camera) and the reviews. To ensure external validity, the stimulus material looked like a screenshot from a real webpage. The reviews were placed below the product description. In the positive valence condition, five different reviewers commented the product with five different positive reviews (i.e., description of product advantages, recommendation to buy the product). In the negative valence condition, the product received five different negative reviews (i.e., description of product disadvantages, warning against buying the product) from five different reviewers. Afterwards, participants answered questions that measured the variables of interest.

Measures. Seven-point rating scales (1="strongly disagree" to 7="strongly agree") measured the variables. Three items collected information for argument quality (Lao et al. 2013; α = .92), three items assessed product attitude (Kim and Gupta 2012; α = .96) and four items measured purchase intention (Pavlou and Gefen 2004; α = .95).

Results

Preliminary analyses

The manipulation of OCR valence (three items from Park and Lee 2008, 1="negative" to 7="positive", α = .99) was successful. Participants evaluated the positive OCRs significantly more positively than the negative OCRs (M = 6.45 vs. M = 1.23; t(193) = 42.08, p < .01). Our manipulation of source credibility (five items from Weitzl 2014, 1="low credibility" to 7="high credibility", α = .92) also showed the predicted effect. Source credibility was significantly higher in the high- than in the low-credibility scenario (M = 4.58 vs. M = 3.47; t(193) = 6.83, p < .01). Furthermore, OCR valence did not influence source credibility (M = 3.96 vs. M = 4.13; t(193) = .95, p = .345).
### Table 1: Summary of Key Findings

<table>
<thead>
<tr>
<th>Study 1</th>
<th>Study 2</th>
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</thead>
<tbody>
<tr>
<td>Search good</td>
<td>Experience good</td>
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<tr>
<td>N = 195; 68 % female, mean age: 25 years</td>
<td>N = 221; 72 % female, mean age: 23 years</td>
</tr>
<tr>
<td><strong>Cronbach’s alpha</strong></td>
<td><strong>Cronbach’s alpha</strong></td>
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<tr>
<td>Perceived argument quality</td>
<td>α = .92</td>
</tr>
<tr>
<td>Product attitude</td>
<td>α = .96</td>
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<tr>
<td>Purchase intention</td>
<td>α = .95</td>
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<tr>
<td><strong>Manipulation check</strong></td>
<td></td>
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<tr>
<td>Valence</td>
<td>α = .99</td>
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<tr>
<td>1.23 vs 6.45</td>
<td>p &lt; .01</td>
</tr>
<tr>
<td>Credibility</td>
<td>α = .92</td>
</tr>
<tr>
<td>3.47 vs 4.58</td>
<td>p &lt; .01</td>
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<tr>
<td><strong>Product attitude H1a &amp; H1b (Moderation analysis)</strong></td>
<td></td>
</tr>
<tr>
<td>Total: credibility → attitude, β = .75**</td>
<td>Total: credibility → attitude, β = .72**</td>
</tr>
<tr>
<td>Indirect: credibility → argument, β = .85**</td>
<td>Indirect: credibility → argument, β = .76**</td>
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<tr>
<td>argument → attitude, β = .53**</td>
<td>argument → attitude, β = .53**</td>
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<tr>
<td>(β = .46**)</td>
<td>(β = .40**)</td>
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<tr>
<td>Direct: credibility → attitude, β = .30</td>
<td>Direct: credibility → attitude, β = .32</td>
</tr>
<tr>
<td><strong>Purchase intention H1a &amp; H1b (Moderation analysis)</strong></td>
<td></td>
</tr>
<tr>
<td>Total: credibility → purchase, β = 1.01**</td>
<td>Total: credibility → purchase, β = .83**</td>
</tr>
<tr>
<td>Indirect: credibility → argument, β = .85**</td>
<td>Indirect: credibility → argument, β = .76**</td>
</tr>
<tr>
<td>argument → purchase, β = .60**</td>
<td>argument → purchase, β = .56**</td>
</tr>
<tr>
<td>(β = .51**)</td>
<td>(β = .42**)</td>
</tr>
<tr>
<td>Direct: credibility → purchase, β = .50*</td>
<td>Direct: credibility → purchase, β = .41</td>
</tr>
</tbody>
</table>

**p < .01, * p < .05**

A MANOVA with OCR valence and source credibility as independent variables and product attitude and purchase intention as dependent variables yielded a significant main effect of OCR valence (V = .31, F(2, 190) = 42.22, p < .01), a non-significant main effect of source credibility (V = .02, F(2, 190) = 1.85, p = .16) and a significant interaction between OCR valence and source credibility (V = .06, F(2, 190) = 6.14, p < .01). Follow up ANOVAs and planned comparisons then tested the moderation postulated in H1 for product attitude and purchase intention independently. Additionally, a mediation analysis tested H2.

**Main analyses product attitude**

A two-way ANOVA of product attitude revealed a significant main effect of OCR valence (F(1, 191) = 84.34, p < .01) and a non-significant main effect of source credibility (F(1, 191) = 2.84, p = .093). More importantly, results showed the predicted significant interaction between OCR valence and source credibility (F(1, 191) = 6.72, p < .05). Planned comparisons showed no significant difference for sources of high vs. low credibility when valence was negative (M\text{high,low} vs. M\text{neg,low}; t(191) = -.61, p = .542), supporting H1a. In the positive-valence condition, high source credibility led to significantly better product attitude (β = .53, p < .01) for sources of high vs. low credibility when valence was negative (M\text{high,low} vs. M\text{neg,low}; t(191) = 3.19, p < .05). This finding supports H1b.

H2 postulates that perceived argument quality mediates the effect of source credibility on product attitude when OCR valence is positive. Mediation analysis (Hayes 2013; Model 4, bootstrap sample n = 5000) was applied to test this hypothesis. Results revealed a significant indirect effect of source credibility on product attitude through perceived argument quality (β = .46, p < .01, 95% CI = [.18, .78]). Specifically, results showed that source credibility positively influenced perceived argument quality (β = .85, p < .01), which in turn predicted product attitude (β = .53, p < .01). The direct effect of source credibility on product attitude was not significant (β = .30, p = .131). Thus, as predicted in H2, perceived argument quality mediates the effect of source credibility on product attitude in the case of...
positive OCR valence. In contrast, for negative OCR valence, results revealed no significant mediation.

**Main analyses purchase intention**

A two-way ANOVA of purchase intention revealed a significant main effect of OCR valence (F(1, 191) = 45.33, p < .01), a non-significant main effect of source credibility (F(1, 191) = 3.34, p = .069) and, as predicted, a significant interaction between OCR valence and source credibility (F(1, 191) = 12.25, p < .05). Planned comparisons showed no significant difference for high- and low-credibility sources when valence was negative (M_{high,cred} = 1.95 vs. M_{low,cred} = 2.27; t(191) = -1.13, p = .261), supporting H1a. With positive valence, high source credibility led to significantly higher purchase intention than low source credibility (M_{pos,high} = 3.90 vs. M_{pos,low} = 2.89; t(191) = 3.97, p < .01). This result is in favor of H1b.

For H2, the mediation analysis revealed a significant indirect effect of source credibility on purchase intention through perceived argument quality (β = .51, p < .01, 95% CI = [.22, .88]). Specifically, results showed that source credibility positively influenced perceived argument quality (β = .85, p < .01). Perceived argument quality then predicted purchase intention (β = .60, p < .01). The direct effect of source credibility on purchase intention was also significant (β = .50, p < .05). Thus, perceived argument quality partially mediates the effect of source credibility on purchase intention in the case of positive OCR valence. In contrast, for negative OCR valence, results revealed no significant mediation.

**STUDY 2**

The purpose of study 2 was to replicate the observed effects of OCR valence and source credibility for another product type: experience goods. The booking of a hotel room was used as the scenario for the pre-purchase information search for an experience good. All other aspects of the design and the manipulations were identical to those of study 1.

**Method**

**Design, participants, and procedure**

The experimental design was identical to study 1. Participants were 221 (72 % female, M_{age} = 23 years) students from several German-speaking universities, randomly assigned to one of the experimental conditions. By participating in the experiment, students got the chance to win an Apple iPod Nano.

Participants were told to imagine that they visited a webpage with a description of a hotel and several OCRs in the course of their pre-purchase information search for booking a hotel room. Manipulation of source credibility was identical to study 1; the reviews used in the positive and negative OCR condition were adapted for the context of study 2.

**Measures**

We assessed all variables with the same measures used in Study 1 (argument quality: α = .88, product attitude: α = .98, purchase intention: α = .96).

**Results**

**Preliminary analyses**

Using the same measures, we assessed the manipulation of OCR valence (α = .98) and source credibility (α = .94). Both manipulations were successful. Participants evaluated the positive OCRs significantly more positively than the negative OCRs (M_{pos} = 6.17 vs. M_{neg} = 1.73; t(219) = 25.48, p < .01). Additionally, source credibility was significantly higher in the high than in the low source-credibility scenario (M_{high} = 5.00 vs. M_{low} = 3.93; t(219) = 6.32, p < .01). Furthermore, OCR valence did not influence source credibility (M_{pos} = 4.48 vs. M_{neg} = 4.45; t(219) = .15, p = .878).

A MANOVA with OCR valence and source credibility as independent variables and product attitude and purchase intention as dependent variables yielded a significant main effect of OCR valence (V = .48, F(2, 216) = 101.25, p < .01), a non-significant main effect of source credibility (V = .01, F(2, 216) = 1.22, p = .30) and a significant interaction between OCR valence and source credibility (V = .06, F(2, 216) = 7.16, p < .01). Follow up ANOVAs and planned comparisons then tested the moderation postulated in H1 for product attitude and purchase intention independently. Additionally, a mediation analysis tested H2.

**Main analyses product attitude**

A two-way ANOVA with product attitude as the dependent variable revealed a significant main effect of OCR valence (F(1, 217) = 203.00, p < .01) and a non-significant main effect of source credibility (F(1, 217) = .052, p = .819). More importantly, results showed the predicted significant interaction between OCR valence and source credibility (F(1, 217) = 14.31, p < .01). Planned comparisons revealed a significant difference for high- and low-credibility sources when valence was negative (M_{neg,high} = 2.44 vs. M_{neg,low} = 3.08; t(217) = -2.51, p < .05). This result is contrary to H1a. In the case of positive OCR valence, high source credibility led to significantly better product attitude than low source credibility (M_{pos,high} = 5.69 vs. M_{pos,low} = 4.97; t(217) = 2.84, p < .01). This result is in favor of H1b.

For H2, the mediation analysis revealed a significant indirect effect of source credibility on product attitude through perceived argument quality (β = .40, p < .01, 95% CI = [.12, .79]). Specifically, results showed that source credibility positively influenced perceived argument quality (β = .76, p < .01). Perceived argument quality then predicted product attitude (β = .53, p < .01). The direct effect of source credibility on product attitude was not significant (β = .32, p = .079). Thus, in the case of positive OCR valence, perceived argument quality mediates the effect of source credibility on product attitude, which supports H2. For negative OCR valence, results revealed no significant mediation.

**Main analyses purchase intention**

A two-way ANOVA of purchase intention revealed a significant main effect of OCR valence (F(1, 217) = 132.82, p < .01), a non-significant main effect of source credibility (F(1, 217) = 1.32, p = .252) and, as predicted, a significant interaction between OCR valence and source credibility (F(1, 217) = 9.81, p < .05). Planned comparisons showed no significant difference for high- and low-credibility sources when valence was negative (M_{neg,high} = 2.26 vs. M_{neg,low} = 2.64; t(217) = -1.40, p = .163), supporting H1a. With positive valence, high source credibility led to significantly higher purchase intention than low source credibility (M_{pos,high} = 5.09 vs. M_{pos,low} = 4.27; t(217) = 3.03, p < .01). This result is in favor of H1b.

For H2, the mediation analysis revealed a significant indirect effect of source credibility on purchase intention through perceived argument quality (β = .42, p < .01, 95% CI = [.13, .85]). Specifically, results showed that source credibility positively influenced perceived argument quality (β = .76, p < .01). Perceived argument quality then predicted purchase intention (β = .56, p < .01). The direct effect of source credibility on purchase intention was not significant (β = .41, p = .087). Supporting H2, in the case of positive OCR valence, perceived argument quality mediates the effect of source credibility on purchase intention. In contrast, for negative OCR valence, results revealed no significant mediation.
DISCUSSION
The results of this research shed light on the differential effects of source credibility in an online context, clarifying previous inconclusive findings. Specifically we clarify under which conditions the credibility of the author of an OCR matters. With its notion of the co-occurrence of systematic and heuristic processing, the HSM (Chaiken 1980; Chaiken et al. 1989) provides a highly applicable theoretical basis to explain the effect of source credibility in the case of positive but not negative OCRs. This is because positive OCRs are rather non-diagnostic, especially in the online context, where positive reviews are vast and often perceived as biased. The source credibility effect is mediated by the evaluation of argument quality, indicating that the heuristic information was used systematically. This strengthens the HSM’s notion of co-occurring processing modes and extends previous findings on the systematic processing of heuristic information (Darke et al. 1998).

The research has some limitations. The effect of source credibility was only tested in a situation where consumers are rather motivated to process the information. In a situation where low motivation or ability and thus heuristic processing predominate, source credibility should always have an influencing effect because message content is not or cannot be processed. To measure systematic processing more thoroughly, applying a thought listing procedure would help to gain better insights into the processes underlying the effects of OCR valence and source credibility on product attitudes and purchase intentions. Furthermore, future research should validate the findings using non-student samples and additional product settings. This would enable us to provide an in-depth analysis of potential product category differences.

REFERENCES


