

## DETERMINANTS OF ONLINE REVIEW CREDIBILITY AND ITS IMPACT ON CONSUMERS' PURCHASE INTENTION

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### ABSTRACT

Consumers frequently rely on online reviews in forming purchase intentions, but at the same time have increasingly expressed reservations with regard to the credibility of online reviews in recent years. Given the lack of empirical research investigating how consumers assess the credibility of online reviews, this study examines determinants of online review credibility and its effect on consumers' purchase intentions. Drawing upon elaboration likelihood theory, we develop a research model and empirically test it by means of structural equation modeling with data collected from 282 users of the online review website Yelp. Our findings suggest that factors based on argument quality, including accuracy, completeness and quantity of online reviews, as well as peripheral cues, including reviewer expertise, product/service rating and website reputation, both significantly impact online review credibility, which in turn positively influences consumers' purchase intentions.

**Keywords:** Online reviews; Credibility; Purchase intention; Elaboration likelihood model; Structural equation modeling

### 1. Introduction

The developments in information and communication technologies and particularly the Internet have opened up new opportunities for service providers and consumers to share information among themselves. In this context, online reviews, a special form of electronic word of mouth (eWOM), have emerged as a new communication channel and have become increasingly popular among citizens (Kuan et al., 2015; Park and Nicolau, 2015; Wang et al., 2018). Today, online reviews are among the most influential sources of information for consumers when forming a purchase decision (Chevalier and Mayzlin, 2006; Lee and Shin, 2014) and provide great benefits to them (Hamby et al., 2015; Krishnamoorthy, 2015; Zhang et al., 2014; Zheng et al., 2013). Most importantly, they enable geographically dispersed consumers to share independent opinions on products and services, helping them to reach informed purchase decisions (Racherla et al., 2013). In addition, online reviews also hold great value creation potential for companies. As a source of product and service improvement, they can increase revenue and foster long-term relationships, thus also playing a significant role in the marketing efforts of companies (Chang et al., 2015). The growing popularity and provided benefits of online reviews have attracted much attention from researchers and practitioners in recent years (Cheung et al., 2012).

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Previous research suggests that information created by consumers, such as online reviews, is more persuasive than information created by marketers, since consumers do not have a vested interest and are therefore independent and more credible (Park et al., 2007; Plotkina and Munzel, 2016; Reimer and Benkenstein, 2016). Moreover, prior studies suggest that perceived credibility plays a significant role in consumers' decision-making processes and reduces uncertainties (Awad and Ragowsky, 2008; Fan et al., 2013; Nan et al., 2017). According to Baek et al. (2015, p. 293), credibility is also "the most important factor in electronic word-of-mouth (eWOM) adoption". For this reason, also the credibility of online reviews appears to be essential when making purchase decisions based on such reviews. Given the importance of credibility in the context of online reviews and associated purchase decisions, it stands to reason that review credibility is of great interest to both consumers and marketers. However, the ongoing public debate on fake online reviews has increased consumers' awareness of this topic, putting their credibility into question (Munzel, 2016; Smith and Anderson, 2016). Some companies, for instance, follow deceptive practices and manipulate online reviews with regard to their products and services in order to influence consumers' purchase behavior (Chang et al., 2015; Dellarocas, 2006).

As a consequence, the reputation and usage of online reviews and review websites may be at stake in the long term, if the concerns and uncertainties of consumers further disseminate and solidify. In this connection, Munzel (2016, p. 96) relevantly states that "The increasing practice of fake reviews posted online not only jeopardize [sic] the credibility of review sites as important information sources for individuals but also endangers a valuable source of information for service providers." In order to counteract this development initiated by those rogue firms, it is important for reliable companies to understand how consumers perceive and assess the credibility of online reviews, and particularly, to know what factors determine review credibility from the consumers' point of view. However, despite the great importance of review credibility – especially with regard to consumers' purchase decisions – and the increasing focus of researchers and practitioners on online reviews, so far little research exists on the credibility of eWOM communication in general and of online reviews and its determinants in particular (Teng et al., 2014).

Although a decent number of studies on online reviews have examined the influence of online reviews on consumers' attitudes towards products and services, this has happened in a rather general manner and mainly without taking account of factors of online reviews that impact consumers' purchase intentions (e.g., Chu and Kamal, 2008; Doh and Hwang, 2009; Floyd et al., 2014; Lee et al., 2008; Martin and Lueg, 2013; Sen and Lerman, 2007). In order to close this research gap, this study examines the determinants of consumers' perceived credibility of online reviews and its effect on their purchase intentions. In doing so, it goes beyond previous research approaches by illustrating the underlying causal chain in greater detail and thus revealing the crucial levers for increasing consumers' purchase intentions in this context. The remainder of this study is structured as follows: We first present the current state of relevant empirical research. We then describe the elaboration likelihood model as the theoretical foundation and deduce the constructs of our research model. Thereafter, we empirically test the research model based on survey data from 282 users of the online review site Yelp. Finally, we present the study findings and discuss implications for research and practice.

## 2. Current State of Research

Although online reviews and eWOM are a young field of research, it is one already characterized by a considerable number of publications since the late 1990s. Therefore, compiling a literature review to present the current state of research in the context of online reviews and credibility requires narrowing down the scope of literature to those approaches that are most relevant to the research issue at hand. Given the lack of empirical findings with regard to the determinants of online review credibility and our advanced empirical (multivariate) approach in this study, we focus on those attempts that address credibility-related aspects in connection with online reviews and likewise apply multivariate research methods (e.g., multiple regressions and structural equation modeling). The respective literature review was performed in compliance with methodological literature (Webster and Watson, 2002) and ultimately yielded 30 relevant articles fulfilling these predefined criteria.<sup>†</sup>

While the majority of 20 articles emerged from the social media realm, 10 articles are rooted in the field of e-commerce. 40 percent of these approaches (12 articles: 10 from social media research and 2 from e-commerce research) consider credibility as a side aspect, usually using source or reviewer credibility as the independent or moderating variable (Chang et al., 2015; Cheng and Ho, 2015; Cheung, 2014; Cheung et al., 2008; Filieri et al., 2018; Jamil and Hasnu, 2013; Kuan et al., 2015; Li and Zhan, 2011; Reimer and Benkenstein, 2016; Teng et al., 2014; Zhang and Watts, 2008; Zhang et al., 2014) and examining its effects on outcomes, such as information usefulness and adoption.

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<sup>†</sup> The databases searched included EBSCO (Academic Source Complete, Business Source Complete, as well as EconLit with full text) and ScienceDirect (September 2018).

Here, the work of Reimer and Benkenstein (2016) is the only study that addresses determinants of review trustworthiness, including review argumentation and review skepticism. Given the significance of online reviews and their credibility with regard to purchase decisions, it is surprising that only the study by Cheung (2014) considers purchase intentions as an outcome. However, most relevant to the research at hand are those studies investigating review credibility as the dependent variable and its potential determinants. Here, we identified 18 articles, of which 10 originate in social media (Cheung et al., 2009; Cheung et al., 2012; Chih et al., 2013; Fan et al., 2013; Fang, 2014; Lim and van der Heide, 2015; Luo et al., 2013; Luo et al., 2015; Vendemia, 2017; Xu, 2014) and 8 in the e-commerce literature (Chakraborty and Bhat, 2018a, 2018b; Fan and Miao, 2012; Flanagan and Metzger, 2013; Hernández-Ortega, 2018; Lee et al., 2011; Munzel, 2016; Shan, 2016).

The dominant theoretical foundation used in these studies is the elaboration likelihood model, which is applied by one third of the approaches (e.g., Fan and Miao, 2012; Luo et al., 2015). Most noticeable, with two exceptions all of the approaches identified consider with one to four factors a relatively small number of determinants with regard to online reviews (Cheung et al., 2012; Chih et al., 2013; Fan and Miao, 2012; Fang, 2014; Flanagan and Metzger, 2013; Hernández-Ortega, 2018; Lee et al., 2011; Lim and van der Heide, 2015; Luo et al., 2013; Munzel, 2016; Shan, 2016; Vendemia, 2017; Xu, 2014). Although the work of Fan et al. (2013) includes with the five factors source credibility, eWOM quantity, eWOM quality, consumer expertise and consumer involvement a decent number of potential determinants, the last two do not appear to have a significant impact on review credibility. Similarly, the studies by Chakraborty and Bhat, (2018a, 2018b) examine five factors, including source credibility, review quality, review consistency, review sidedness and receiver, but cannot demonstrate a significant effect of review sidedness on review credibility.

Despite providing useful findings and insights with regard to the credibility of online reviews, the above-mentioned studies do not do justice to its multifaceted character and thus have only little explanatory power with regard to its determinants. The studies by Cheung et al. (2009) and Luo et al. (2015) seek to fill in this gap in research by each considering seven potential determinants of review credibility. However, both studies greatly overlap as their research models have five determinants in common. Interestingly, their findings vary to some extent with regard to these factors. While both studies reject review sidedness and confirm argument strength, source credibility and review consistency as determinants of review credibility, Luo et al. (2015) cannot substantiate the significant effect of the factor review rating on review credibility, as demonstrated earlier by Cheung et al. (2009). Taken together, although both studies each can prove the significant impact of 5 out of 7 proposed determinants of review credibility, they do not consider purchase intention as an important potential ultimate outcome of these determinants and review credibility. Generally speaking, purchase intention is underrepresented as an outcome in the above-mentioned studies, as only 6 out of 18 approaches take account of this construct in their research models.

To sum up, although there has been a decent amount of empirical research addressing credibility in connection with online reviews by means of advanced empirical research methods, prior studies have so far not been able to provide a research model that comprehensively examines the determinants of online review credibility and its impact on consumers' purchase intentions. Thus, they leave in the dark potential drivers of credibility that may, on the one hand, help companies to reduce and overcome consumers' respective concerns and uncertainties that threaten companies' credibility, and on the other hand, may be a useful source of information for business improvement. The study at hand addresses these shortcomings by developing a comprehensive research model of determinants of online review credibility and its impact on consumers' purchase decisions and by empirically testing this model by means of structural equation modeling.

### 3. Theoretical Framework

Online reviews in a broader sense can be seen as a message or information regarding a product or service and thus like any other information are subject to processes of human information processing. Therefore, the elaboration likelihood model (ELM) appears to be a suitable theoretical foundation for investigating the research issue at hand, as it focuses on information processing and how individuals process received information or messages (Petty and Cacioppo, 1986). Moreover, it has also been frequently applied in studies on online reviews and credibility (e.g., Cheung et al., 2012; Fan et al., 2013; Luo et al., 2015). The ELM is an integrative process model and is composed of two major routes through which individuals process persuasive messages: a central route and a peripheral route of persuasion. Both routes may be triggered simultaneously in persuasion processes and can vary in their intensity (Cheung et al., 2012; Luo et al., 2015).

The elaboration intensity or probability is an important aspect of the ELM. It refers to the degree of cognitive involvement that individuals show in persuasion attempts and depends on an individual's ability and motivation (Fan and Miao, 2012; Kuan et al., 2015). According to this, the more cognitive effort an individual puts into the processing and evaluation of a message, the higher the elaboration intensity and vice versa. While the central route is associated

with a high level of elaboration and individuals' concentration on the argument quality of the message, the peripheral route involves a low level of elaboration, with individuals focusing on simple peripheral cues (Cheung et al., 2012; Obiedat, 2013). According to this, consumers can evaluate the credibility of online reviews based on both central cues of argument quality and peripheral cues. Thus, when developing our research model, we conceptualize the determinants of online review credibility as factors of argument quality and peripheral factors, and assign them according to the respective dimension.

#### 4. Conceptualization of the Research Model

Based on the ELM, determinants of review credibility can be conceptualized either as factors of argument quality that are processed under the central route of persuasion or as peripheral cues that trigger a peripheral route of persuasion. The assignment of the exogenous constructs or factors of our research model to the particular route of information processing follows the conceptualization of respective factors in other studies and from a theoretical perspective mainly depends on the above-mentioned aspect of elaboration intensity emphasized by the ELM. Against this background, the factors accuracy, completeness and timeliness were derived from previous research as factors of argument quality (e.g., Cheung et al., 2012; Luo et al., 2015), which are associated with a high amount of cognitive effort when it comes to information processing and thus belong to the central route. In contrast, the factors review quantity, review consistency, reviewer expertise, product/service rating and website reputation were adopted from prior studies as peripheral factors (e.g., Cheung et al., 2012; Luo et al., 2015), which are characterized by a low amount of cognitive effort in the context of information processing and thus are part of the peripheral route. In the following sections, we develop our research model by drawing upon the ELM and its routes of information processing, as well as by deducing relevant determinants of online review credibility from previous research and conceptualizing them in accordance with the ELM.

##### 4.1 Determinants Based on Argument Quality

When the central route of persuasion is activated during information exposure, the processing of online reviews by consumers is influenced by factors of argument quality. Information quality and argument quality, in particular, are regarded as important determinants of the credibility of web information and online reviews (Cheung et al., 2009; Cheung et al., 2012; Wathen and Burkell, 2002). Accordingly, we expect that argument quality and its constituent factors influence the perceived credibility of online reviews. In the following, we derive important factors of argument quality from previous research, including accuracy, completeness and timeliness of online reviews.

##### 4.1.1 Accuracy

Accuracy mainly refers to the reliability and correctness of online reviews and represents a major influencing factor thereof (Jamil and Hasnu, 2013; Wang and Strong, 1996). Prior studies, particularly in the context of social media, have frequently conceptualized accuracy within the central route of persuasion and confirmed it as a meaningful factor of argument quality (e.g., Cheung et al., 2008; Filieri and McLeay, 2013; Jamil and Hasnu, 2013). Consumers perceive reviewers on review websites as independent evaluators who provide correct information about products and services. Accuracy plays a crucial role when consumers deliberately deal with the content of online reviews, particularly in connection with credibility. In this context, the consumer's prior knowledge with regard to the respective product or service is an important aspect. Such knowledge may not exclusively result from explicit experiences with the specific product or service, but can also stem from other sources, for instance, experience with a similar product or service, thus referring to perceived experiences with a product or service in a broader sense. If those aspects already known to the consumer are accurately represented in the online review, the consumer will very likely also acknowledge unknown aspects in the online review as accurate (Jamil and Hasnu, 2013). However, if the aspects known to the consumer in the online review deviate from the consumer's experience, the consumer will very likely reject both known and unknown aspects in the online review, contesting the credibility of the whole review. Based on these deliberations, we propose the following hypothesis:

**H<sub>1</sub>:** *The accuracy of an online review positively influences its credibility.*

##### 4.1.2 Completeness

Similar to accuracy, the completeness of online reviews has been primarily investigated and established within social media research (e.g., Cheng and Ho, 2015; Cheung, 2014; Cheung et al., 2008; Filieri and McLeay, 2013; Jamil and Hasnu, 2013; Li and Zhan, 2011; Luo et al., 2013; Racherla and Friske, 2012). According to Luo et al. (2013), completeness refers to the degree to which an online review is comprehensive and provides satisfactory information. Prior studies suggest that completeness is an important factor of argument quality and thus can be assigned to the central route of information processing (Cheng and Ho, 2015; Li and Zhan, 2011; McKinney et al., 2002; Yang et al., 2005). Previous research has also proposed an impact of review completeness on review credibility. Review completeness increases the quality of information and thus the strength of the argument. When the recipient perceives an

online review to have valid arguments, he or she is likely to regard the online review as positive and credible information (Cheung et al., 2009). Although this effect relationship has not been empirically confirmed so far, researchers urge the demand for further research on this issue (Luo et al., 2013). Therefore, the study at hand conceptualizes completeness of online reviews as a factor of argument quality and examines its influence on the credibility of online reviews, proposing the following hypothesis:

**H<sub>2</sub>:** *The completeness of an online review positively influences its credibility.*

#### 4.1.3 Timeliness

A number of studies in social media research have confirmed the importance of timeliness in connection with online reviews, which has thus become established as a reliable factor in this context (Cheung, 2014; Cheung et al., 2008; Filieri and McLeay, 2013; Jamil and Hasnu, 2013). Timeliness pertains to the novelty and up-to-dateness of online reviews, thus reflecting the current state of a product or service (Filieri and McLeay, 2013; Jamil and Hasnu, 2013). It is regarded as a major factor of information quality or, in this context, argument quality (Cheung et al., 2008; McKinney et al., 2002; Rabjohn et al., 2008). Timeliness is closely connected with completeness, since only the consistent update of online reviews provides comprehensive information (Cheung, 2014). Previous research also suggests that timeliness plays an important role with regard to the credibility of information, particularly in the context of the Internet (Abdulla et al., 2002). Similarly to completeness, timeliness improves the quality of an online review and thus also supports the strength of argument, which in turn is likely to trigger a more favorable attitude towards the online review, including a more positive perception of credibility. Therefore, the study at hand conceptualizes timeliness as a factor of argument quality and empirically examines its impact on the credibility of online reviews. In line with this argumentation, we suggest the following research hypothesis:

**H<sub>3</sub>:** *The timeliness of an online review positively influences its credibility.*

After having deduced and presented the conceptualization of factors of argument quality as determinants of online review credibility in our research model, we now derive peripheral cues as determinants of online review credibility based on previous research.

## 4.2 Determinants Based on Peripheral Cues

When the peripheral route of persuasion is triggered during information exposure, consumers process online reviews by means of peripheral cues. Unlike argument quality, peripheral cues do not focus on an online review's arguments, but rather refer to "simple rules or information short cuts, such as brand image and source attractiveness that consumers use to assess a recommendation" (Filieri and McLeay, 2013, p. 46). Prior studies indicate that peripheral cues are important determinants of the credibility of online reviews (e.g., Cheung et al., 2012; Fan et al., 2013; Luo et al., 2015). Based on previous literature, we have identified 5 peripheral cues that are important with regard to the credibility of online reviews. According to this, we expect that review quantity, review consistency, reviewer expertise, product/service rating and website reputation are peripheral cues that influence consumers in evaluating the credibility of online reviews, all presented in the following.

### 4.2.1 Review Quantity

Review quantity has been frequently applied as a peripheral cue in connection with online reviews and is thus a well-established and important factor in both the e-commerce and social media literature (Fan et al., 2013; Fang et al., 2013; Filieri and McLeay, 2013; Obiedat, 2013; Park et al., 2007; Zhang et al., 2014; Zhou et al., 2013). This factor refers to the number of online reviews that are available for a specific product or service on a review website (Filieri and McLeay, 2013). A large quantity makes online reviews more observable (Cheung and Thadani, 2010) and contributes to the verification of individual online reviews, constituting an important factor in the context of peripheral cues (Zhang et al., 2014). Previous research also provides empirical evidence that review quantity has a positive impact on the perceived credibility of online reviews (Fan et al., 2013). According to this, consumers perceive a great number of reviews as a salient information cue that catches their attention. Moreover, review quantity seems to be associated with some kind of legitimizing function, according to which the consistency of many reviews increases their reliability and thus also their credibility. Therefore, we conceptualize review quantity as a peripheral cue and examine its influence on review credibility, proposing the following hypothesis:

**H<sub>4</sub>:** *Review quantity positively influences the credibility of an online review.*

### 4.2.2 Review Consistency

Review consistency has been considered in various e-commerce and social media studies and confirmed as an important peripheral cue in connection with online reviews (e.g., Baek et al., 2012; Chang et al., 2015; Cheung et al., 2012; Luo et al., 2015; Munzel, 2016). This factor refers to the degree to which the content is consistent across different online reviews (Chang et al., 2015). Online review sites enable consumers to easily compare related reviews. When comparing online reviews, consumers are more likely to perceive those reviews as more credible that show a high consistency with most of the other related reviews. By contrast, consumers are very likely to be more skeptical towards

reviews that are not consistent with most of the other reviews. From a psychological perspective, congruency of information contributes to an individual's goal attainment and therefore triggers a more favorable attitude, including more positive credibility perceptions. In support of this, the studies by Cheung et al. (2012) and Luo et al. (2015) provide empirical evidence that review consistency has a positive impact on review credibility. Therefore, we integrate review consistency in our research model as a peripheral cue and propose the following hypothesis:

**H<sub>5</sub>:** *Review consistency positively influences the credibility of an online review.*

#### 4.2.3 Reviewer Expertise

A number of studies, particularly in the context of social media research, have addressed reviewer expertise as a factor or peripheral cue in connection with online reviews (e.g., Cheng and Ho, 2015; Fang, 2014; Jamil and Hasnu, 2013; Racherla and Friske, 2012). Reviewer expertise refers to the amount of knowledge that reviewers have about a product or service, as well as their ability and motivation to provide correct and truthful information (Guo and Zhou, 2016; Racherla and Friske, 2012). It is a very important aspect to recipients of an online review, particularly when the information searched shall support them in the decision-making processes (Gilly et al., 1998; Liu and Park, 2015). Previous research indicates that experts are more credible than laypersons. In addition, the reviewers' expertise is not only an important aspect of their credibility, but also has a positive impact on the credibility of an online review (Cheung and Thadani, 2012; Fang, 2014). In other words, if the source (reviewer) of an online review is perceived as credible, the product (online review) of the source is also likely to be perceived as credible by consumers. In line with this argumentation, we conceptualize reviewer expertise as a peripheral cue in our research model, suggesting the following hypothesis:

**H<sub>6</sub>:** *Reviewer expertise positively influences the credibility of an online review.*

#### 4.2.4 Product or Service Rating

The rating of products or services has also been investigated within e-commerce and social media research before. However, most of these approaches conceptualized this factor based on individual indicators and not by means of a latent construct (e.g., Baek et al., 2012; Filieri and McLeay, 2013; Liu and Park, 2015). Star ratings of products or services may be regarded as a conclusive overall assessment. Review websites like Yelp sum up these star ratings across all online reviews of a certain product or service. As a result, users can see an average rating of all relevant online reviews (Yelp, 2017b). Since a product or service rating refers to an assessment in terms of a pictogram, such as a star icon complementing a written online review, it is primarily nothing but a simple visual cue displayed to the consumer that serves as an information short cut (Filieri and McLeay, 2013). Processing this visual cue does not require a lot of cognitive effort from the consumer and thus the cognitive involvement or elaboration intensity is very low. Given the above-mentioned theoretical connection between low elaboration intensity and the peripheral route, the factor "Product or Service Rating" can be clearly classified as a peripheral cue. Previous research suggests that such ratings may influence how consumers perceive the credibility of an online review (Cheung et al., 2009; Fang, 2014). The aggregated star rating indicates the majority opinion through which a specific online review may gain legitimation and credibility. Accordingly, we integrate the factor product or service rating as a peripheral cue in our research model, proposing the following hypothesis.

**H<sub>7</sub>:** *A product or service rating positively influences the credibility of an online review.*

#### 4.2.5 Website Reputation

Website reputation is a well-established construct in e-commerce and social media research (e.g., Chih et al., 2013; Lee et al., 2011; Lee and Shin, 2014) and refers to the popularity or image of an online review website among consumers (Hsiao et al., 2010). Previous research shows that website reputation is closely connected with consumers' acceptance of the respective website (Park and Lee, 2009) and that the latter often rely on reputations when assessing the credibility of presented information (Chih et al., 2013; Metzger, 2007). According to this, consumers may derive the quality of an online review and their corresponding credibility judgment from their perceived reputation of the website. In this connection, Chih et al. (2013) provide empirical evidence of the impact of website reputation on the credibility of online reviews. Based on these findings, we also consider website reputation as a peripheral cue in our research model, suggesting the following hypothesis:

**H<sub>8</sub>:** *Website reputation positively influences the credibility of an online review.*

Table 1 shows an overview of the above-mentioned constructs, illustrating their category affiliation based on the ELM as well as the studies and previous research findings that were relevant for developing the research model.

Table 1: Overview of Exogenous Constructs and Relevant Sources for Model Development

Category based on ELM	Exogenous constructs	Studies on online reviews using respective constructs	Relevant findings for hypothesis development
Argument Quality	Accuracy	Cheung et al., 2008; Filieri and McLeay, 2013; Jamil and Hasnu, 2013; Racherla and Friske, 2012	Positive effect of argument quality on review credibility (Cheung et al., 2009; Cheung et al., 2012; Fang, 2014; Luo et al., 2015)
	Completeness	Baek et al., 2012; Cheng and Ho, 2015; Cheung, 2014; Cheung et al., 2008; Filieri and McLeay, 2013; Flanagan and Metzger, 2013; Jamil and Hasnu, 2013; Kuan et al., 2015; Li and Zhan, 2011; Liu and Park, 2015; Luo et al., 2013; Racherla and Friske, 2012	
	Timeliness	Cheung, 2014; Cheung et al., 2008; Filieri et al., 2018; Filieri and McLeay, 2013; Jamil and Hasnu, 2013	
Peripheral Cues	Review Quantity	Fan et al., 2013; Fang et al., 2013; Filieri and McLeay, 2013; Obiedat, 2013; Zhang et al., 2014; Zhou et al., 2013	Positive effect of review quantity on review credibility (Fan et al., 2013)
	Review Consistency	Baek et al., 2012; Chakraborty and Bhat, 2018a, 2018b; Chang et al., 2015; Cheung et al., 2009; Cheung et al., 2012; Kuan et al., 2015; Luo et al., 2015; Munzel, 2016	Positive effect of review consistency on review credibility (Chakraborty and Bhat, 2018a, 2018b; Cheung et al., 2009; Cheung et al., 2012; Luo et al., 2015)
	Reviewer Expertise	Cheng and Ho, 2015; Cheung et al., 2008; Fang, 2014; Jamil and Hasnu, 2013; Liu and Park, 2015; Racherla and Friske, 2012	Positive effect of reviewer expertise on review credibility (Fang, 2014)
	Product or Service Rating	Baek et al., 2012; Chang et al., 2015; Fang, 2014; Filieri et al., 2018; Filieri and McLeay, 2013; Flanagan and Metzger, 2013	Positive effect of review rating on review credibility (Cheung et al., 2009; Fang, 2014)
	Website Reputation	Chih et al., 2013; Hsiao et al., 2010	Positive effect of website reputation on review credibility (Chih et al., 2013)

After having derived the exogenous constructs of our research model in terms of potential determinants of online review credibility, we now introduce review credibility and purchase intention as endogenous constructs of our research model.

#### 4.3 Review Credibility and Purchase Intention Based on Online Reviews

The first endogenous construct in our research model is review credibility. As already shown in the research overview above, online review credibility has been frequently used as a dependent variable in e-commerce and social media research (e.g., Chih et al., 2013; Flanagan and Metzger, 2013; Luo et al., 2015). Review credibility refers to “the extent to which one perceives online reviews [...] as believable, true, or factual.” (Fang, 2014, p. 72) and plays an important role in the context of consumer behavior (Cheung et al., 2012). In light of its relevance, as well as the little knowledge regarding its determinants and its impact on consumers’ purchase intentions, we integrate review credibility as the core endogenous construct in the research model. Against this background, we also examine its influence on consumers’ purchase decisions, including the latter as the second endogenous construct in the research model. Although a great number of studies in the context of e-commerce and social media research have considered consumers’ purchase intention as a dependent variable in connection with online reviews (e.g., Chih et al., 2013; Hsiao et al., 2010; Obiedat, 2013; Park and Lee, 2009; Reimer and Benkenstein, 2016), only few have considered review credibility as an antecedent factor.

Purchase intention is a specific type of consumer behavior and describes “a consumer’s conscious plan or intention to make an effort to purchase a product [or service].” (Lu et al., 2014, p. 261). In the study at hand, purchase intention refers to consumers of online reviews who plan to acquire a previously reviewed product or service. Previous

studies suggest that review credibility may positively influence consumers' purchase intentions (Chih et al., 2013; Fan and Miao, 2012; Lee et al., 2011). Based on the above-mentioned findings, we also assume a positive impact of consumers' perceived review credibility on their purchase intentions, formulating the following hypothesis for our research model:

**H<sub>9</sub>:** *Review credibility positively influences consumers' purchase intentions regarding a product or service.*

For a better overview, Figure 1 summarizes the hypotheses derived above and presents the research model of this study.

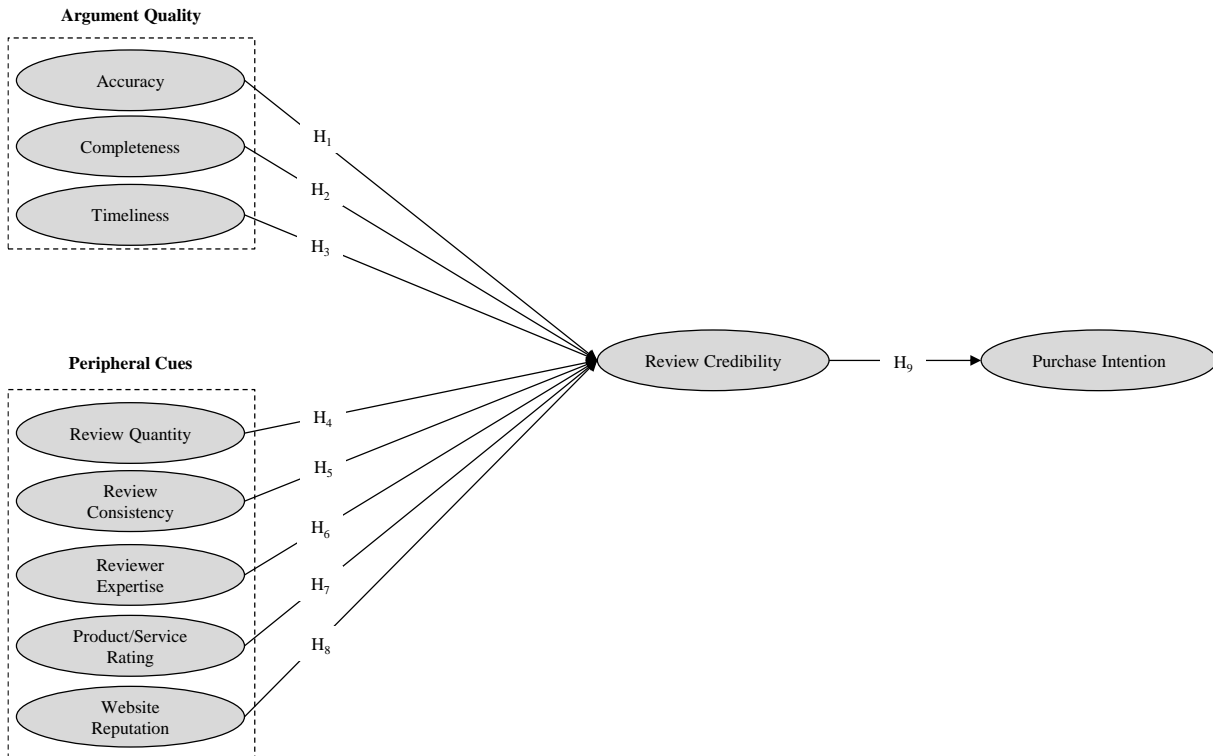


Figure 1: Conceptual Research Model

## 5. Data and Sample

For sampling and data collection a standardized online survey was applied. The data were collected from users of the review website Yelp. Since the ideal population of Yelp users (74 million monthly mobile visitors and 84 million monthly desktop visitors, cf. Yelp, 2017a) can hardly be reached, we apply a convenience sample, which is considered a common sampling approach under these circumstances in research (Bhattacharjee, 2012; Burns et al., 2014; Christensen et al., 2015). A convenience sample refers to a nonrandom sampling method and consists of participants that are easy to reach and thus conveniently available. In order to generate such a sample, we invited German-speaking Yelp users to participate in the study by means of text messages via Yelp's website, as well as postings in Yelp online forums and relevant social media websites. The total number of people surveyed was 292. In the course of our statistical analysis, we identified 10 survey participants as outliers by means of calculating Mahalanobis distances; these were excluded from the further analysis. Accordingly, the final study sample shown in Table 2 contained completed questionnaires of 282 participants for the empirical analysis.

Since the representation of the target population cannot be statistically measured, a convenience sample does not claim to reflect the population from which it is generated. While this does not necessarily imply that it is non-representative, it is advisable to make a qualitative assessment with regard to the target population, as far as this is possible, in order to draw conclusions about the representativeness of the sample (Waltermauer, 2008). Since sociodemographic data on Yelp users are hardly available, we could only perform such an assessment by means of a chi-square test of homogeneity with regard to gender distribution. The results of this test indicate that the sample can at least be considered as representative with regard to gender distribution.



Table 2: Sample Overview

<b>Characteristics</b>		<b>Sample (N = 282) [% ]</b>
Sex	Male	58.51
	Female	41.49
Age	16-20 years	2.13
	21-30 years	26.95
	31-40 years	50.71
	41-50 years	10.28
	51-60 years	7.45
	60 years and older	2.48
Yelp Usage	< once a month	35.82
	Once a month	23.05
	Once a week	12.41
	> once a week	28.72

Furthermore, the questionnaire development was subject to a systematic process, starting with a literature analysis aimed at identifying suitable measurement scales, which were adopted and where necessary, adjusted to the specific research context. Moreover, an Anderson-Gerbing test served to verify the fit between the constructs and their indicators (Anderson and Gerbing, 1991). A think-aloud test and final pretest with Yelp users ensured the understandability and usability of the survey. The variables used were measured by means of normalized seven-point Likert scales, ranging from 1 “strongly disagree” to 7 “strongly agree”. The appendix gives an overview of all constructs and measurement items applied, as well as the respective references. In order to evade potential biases, we developed the survey in compliance with methodological recommendations and took respective measures (Neuman, 2014). In doing so, we checked for a non-response bias by means of a Mann-Whitney U test, which did not show any significant differences between early and late respondents, thus indicating the absence of a non-response bias (Armstrong and Overton, 1977). Drawing upon previous research regarding common method bias, we took into account the respective procedural and statistical remedies (e.g., triangulation approach) proposed in the literature, concluding that this is of minor relevance in this study context, since the methodological matter as such and corresponding countermeasures are not regarded as an issue when it comes to investigating individual perceptual constructs, like in the study at hand (Brannick et al., 2010; Chan, 2009; Podsakoff, 1986; Podsakoff et al., 2003). This reasoning is supported by a Guttman-split-half reliability analysis, as the coefficient of 0.914 is higher than the cutoff value of 0.6. In addition, the results of a Harman’s one-factor test shown in Table 3 also speak against a common method bias, as no factor accounts for the absolute majority of the variance among the indicators (Harman, 1976).

Table 3: Harman's One-Factor Test

<b>Factor</b>	<b>% of Variance</b>	<b>Cumulative %</b>
1	14.242	14.242
2	12.134	26.377
3	9.450	35.826
4	9.446	45.272
5	8.530	53.802
6	7.484	61.286
7	7.404	68.690
8	7.366	76.056
9	7.008	83.064
10	5.069	88.133

## 6. Analysis and Results

The conceptual research model represents a complex system of correlative latent constructs that cannot be measured directly, requiring an accordingly sophisticated research method to empirically test the hypotheses. Therefore, we apply structural equation modeling (SEM) in this study, which is regarded as a suitable and well-established approach to examine complex relationships among latent constructs (Hair et al., 2010; Kline, 2011). Due to our confirmatory study design that seeks to explain data structures and empirically test corresponding hypotheses, we performed a covariance-based analysis, as suggested by methodological research (Chin and Newsted, 1999; Fornell and Larcker 1981). The estimation of the structural and measurement models was performed by means of AMOS 24.0 software.

### 6.1 Scale Reliability and Validity of the Measurement Models

In order to determine the constructs' goodness of measurement, we performed several reliability and validity tests of the individual measurement models in compliance with standard methodological research (Hair et al., 2010). More specifically, this analysis included the calculation of the item-to-total-correlation and Cronbach's Alpha, an exploratory and confirmatory factor analysis with the respective factor loadings and explained variance, as well as the calculation of the Fornell-Larcker criterion. Concerning scale reliability and convergent validity, the analysis of the individual measurement models summarized in the appendix shows that all constructs fulfill the required cutoff values of  $\geq 0.5$  for the item-to-total correlation (Bearden et al., 2011) and  $\geq 0.7$  for Cronbach's Alpha (Hair et al., 2010). In addition, the results of the exploratory factor analysis also meet the postulated cutoff values of  $\geq 0.5$  for the factor loadings and  $\geq 50$  percent for the variance explained (Hair et al., 2010). The confirmatory factor analysis conducted supported the proposed factor structure. Finally, discriminant validity of all constructs was confirmed by means of the Fornell-Larcker criterion. Table 4 illustrates that the criterion is met for all constructs since the average variances extracted (AVE), in boldface, are higher than the squared correlations between the constructs described below the AVE (Fornell and Larcker, 1981).

Table 4: Fornell-Larcker-Criterion

	1	2	3	4	5	6	7	8	9	10
Accuracy (1)	<b>0.770</b>									
Completeness (2)	0.619	<b>0.830</b>								
Timeliness (3)	0.498	0.596	<b>0.862</b>							
Review Quantity (4)	0.386	0.616	0.468	<b>0.796</b>						
Review Consistency (5)	0.393	0.437	0.442	0.479	<b>0.646</b>					
Reviewer Expertise (6)	0.610	0.634	0.578	0.484	0.453	<b>0.840</b>				
Product/Service Rating (7)	0.479	0.598	0.504	0.518	0.343	0.582	<b>0.843</b>			
Website Reputation (8)	0.420	0.626	0.441	0.533	0.366	0.637	0.656	<b>0.757</b>		
Review Credibility (9)	0.607	0.676	0.546	0.477	0.437	0.755	0.658	0.721	<b>0.900</b>	
Purchase Intention (10)	0.316	0.411	0.301	0.308	0.237	0.415	0.570	0.594	0.587	<b>0.848</b>

### 6.2 Testing of the Structural Model

The goodness of the overall model was assessed by means of the following criteria:  $\chi^2/df$  value, Goodness-of-Fit Index (GFI<sup>^</sup>), Adjusted Goodness-of-Fit Index (AGFI<sup>^</sup>), Tucker-Lewis Index (TLI), Comparative-Fit Index (CFI) and the Root-Mean-Squared-Error-of-Approximation (RMSEA). The corresponding values for the model at hand are described in the bottom part of the following Figure 2, indicating a good fit of the overall model, since the fit indices fulfill the cutoff values suggested by the methodological literature (Hair et al., 2010).

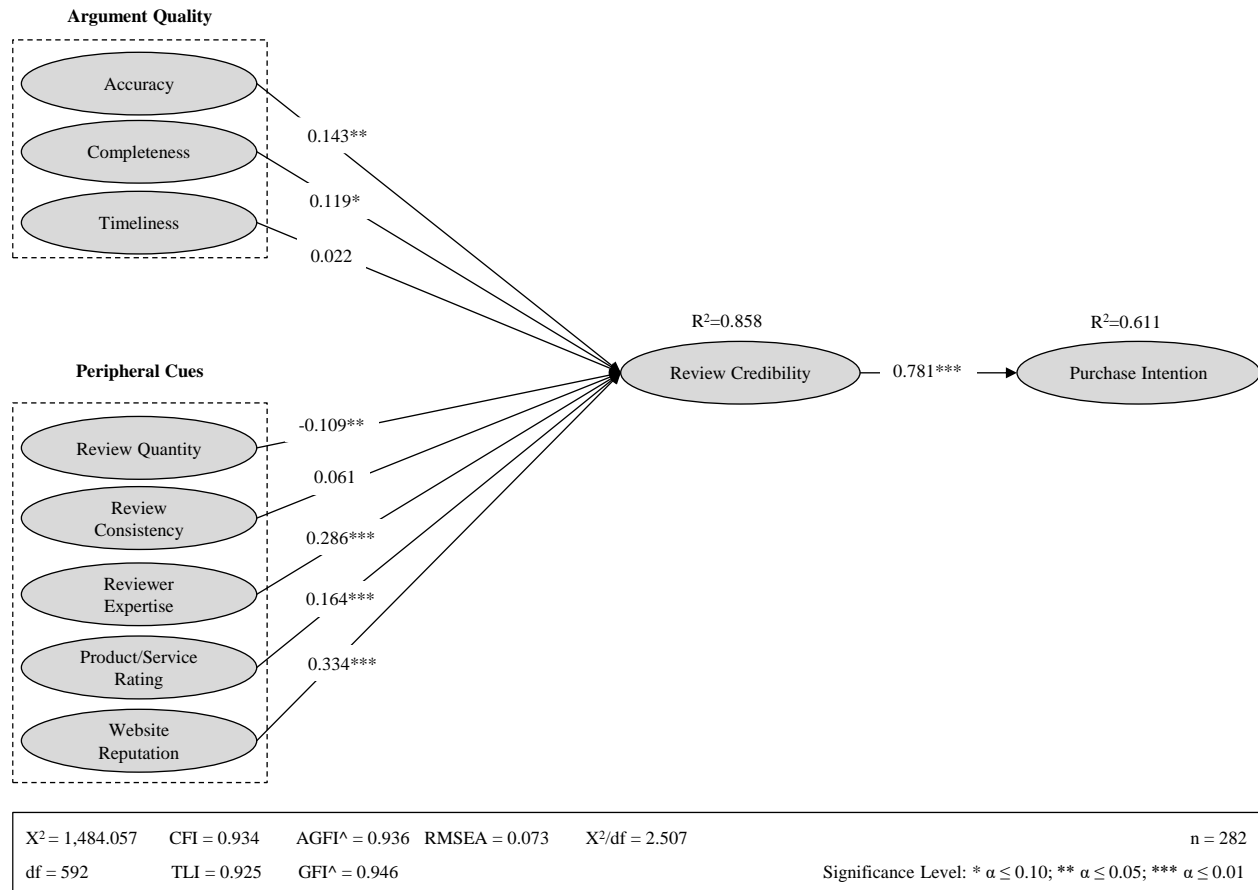


Figure 2: Structural Model

Figure 2 also summarizes the results with regard to the hypothesized structural relationships of the constructs, showing that seven out of nine path coefficients depicted on the respective arrows are statistically significant. Consequently, the results support the main hypotheses regarding the positive effect of accuracy, completeness, reviewer expertise, product/service rating and website reputation on review credibility. Interestingly, review quantity shows a significant negative effect on review credibility contrary to the hypothesized positive impact, while the path coefficients of timeliness and website reputation are not significant. More specifically, the highly significant and comparably high path coefficients of website reputation (0.334) and reviewer expertise (0.286) suggest that these determinants are particularly relevant in determining review credibility.

In addition, product/service rating (0.164), accuracy (0.143), completeness (0.119) and review quantity (-0.109) are also important determinants of review credibility. Furthermore, the high and highly significant path coefficient of 0.781 with regard to the relationship between review credibility and purchase intention supports the hypothesized positive impact in this connection, suggesting that review credibility is a major determinant of purchase intention. The explanatory power of the model is also very high, as the determinants together explain more than 85 percent ( $R^2 = 0.858$ ) of the variance of the dependent variable review credibility, which can be interpreted as more than substantial according to previous research (Chin, 1998). In addition, by explaining more than 61 percent ( $R^2 = 0.611$ ) of the variance of purchase intention, the coefficient of determination is also substantial for the effect relationship between review credibility and purchase intention.

## 7. Discussion and Conclusion

Given the growing skepticism among consumers towards the credibility of online reviews and the little research knowledge about what determines consumers' corresponding perception, the purpose of this study was to identify and examine determinants of online review credibility and its impact on consumers' purchase intentions. The study makes several contributions to research and practice in the field of e-commerce and social media. Drawing on elaboration likelihood theory, it contributes to theory in the context of e-commerce by presenting a comprehensive causal model for online review credibility consisting of an enriched set of factors that goes beyond previous research approaches,

comprising potential determinants based on argument quality (i.e. accuracy, completeness and timeliness of online reviews) and peripheral cues (i.e. review quantity, review consistency, reviewer expertise, product/service rating and website reputation). In this connection, the study provides empirical evidence of the determining role of major factors based on argument quality and peripheral cues in shaping consumers' perceptions of online review credibility, revealing the paramount importance of peripheral cues. The empirical validation of the coexistence as well as the differing but complementary impact of these dimensions is an essential outcome of this study. Due to its comprehensiveness, the causal model and the major determinants identified and confirmed hold great explanatory power for understanding what actually drives consumers' perceptions of online review credibility and subsequent purchase intentions, thus allowing to predict quite accurately corresponding consumer judgments and behavior. In this context, the valid and reliable multi-item measures developed may be of great use for related e-commerce research in the future.

A closer look at the study results reveals that six out of eight proposed determinants significantly influence consumers' perception of review credibility. In this connection, the findings suggest that consumers' credibility perceptions are particularly determined by peripheral cues as website reputation, product/service rating and reviewer expertise show the strongest positive effects. For instance, it seems that there is some kind of spillover effect between website reputation and review credibility, according to which consumers more likely trust an online review when they trust the respective website. These findings are most widely consistent with those of prior studies examining these factors in the context of online reviews (Chih et al., 2013; Fang, 2014). Based on these findings, consumers predominantly process online reviews through the peripheral route of information processing. Most interestingly, review quantity shows a significant negative impact on review credibility, contrary to the initially hypothesized direction of effect and prior research findings (Fan et al., 2013). According to this, consumers perceive a higher number of online reviews for a certain product or service as less credible.

As a result of the recently started public debate regarding fake online reviews and the respectively increased media coverage, one possible explanation of this contradictory finding may be found in the growing consumer interest in online reviews as such and, in particular, the increased awareness among consumers of fake reviews and companies' deceptive practices. Knowing that companies desire as many positive reviews as possible may make consumers feel suspicious of a great number of online reviews, as they suspect companies may have deceptively contributed to this multitude. As a result, they may perceive a higher number of reviews as less credible.

On the one hand, this result is certainly to be treated with caution, as it contradicts previous research on online reviews and thus demands further examination. On the other hand, it holds interesting implications for practitioners, as it turns upside down conventional corporate practice that usually seeks to promote the quantity of online reviews for a product or service. However, while all the above-mentioned peripheral cues have a significant impact, this is surprisingly not the case for review consistency. Thus, we cannot confirm the findings of prior studies that demonstrate a significant positive influence on review credibility (Cheung et al., 2012; Luo et al., 2015). Yet at the same time, previous research has shown that certain conditions or consumer characteristics moderate this effect, determining its significance or insignificance. More specifically, this effect was insignificant when recipients of online reviews had a high level of expertise or a low level of involvement (Cheung et al., 2012). Accordingly, it stands to reason that this may also pertain to a greater part of the participants in our study, thus causing an insignificant effect.

Nonetheless, altogether our findings show that review credibility is particularly a matter of peripheral cues. Besides these most influential determinants based on peripheral cues, there are also determinants based on argument quality that are of importance when it comes to review credibility. Here, accuracy shows the strongest influence, closely followed by completeness of an online review. The finding that accuracy and completeness are important aspects of argument quality is in line with previous empirical research (Filiari and McLeay, 2013; Jamil and Hasnu, 2013). Yet, this is – to the best of our knowledge – the first study that provides empirical evidence of their positive impact on review credibility; thus this finding is a further major contribution to e-commerce research and practice. However, we did not find a significant effect of timeliness on review credibility, although timeliness has been shown to play an important role with regard to the credibility of information in the context of the Internet (Abdulla et al., 2002). Both findings are not necessarily mutually exclusive, but rather may reflect that timeliness and completeness may be even more closely connected to each other than previously assumed (Cheung, 2014). According to this, consumers may perceive the timeliness of information as an integral part of completeness, which may have cannibalized the effect of timeliness on review credibility. Nonetheless, conceptualizing both factors as independent constructs is still reasonable and valid, especially because the statistical analysis has confirmed discriminant validity between both factors.

Overall, the circumstance that both determinants based on argument quality and peripheral cues affect review credibility in varying effect sizes supports the assumption that both routes of information processing proposed by the ELM may be triggered simultaneously and can differ in their intensity (Cheung et al., 2012; Luo et al., 2015).

Finally, the results also confirm a positive impact of review credibility on consumers' purchase intentions, demonstrating that review credibility and its determinants are important antecedents of the latter and not only conventional characteristics of online shopping and consumer characteristics affect consumers' purchase decisions (Cha, 2011). This finding is in general consistent with earlier research results that emphasize the significant role of review credibility in shaping consumers' purchase intentions (Chih et al., 2013; Lee et al., 2011). Yet, the study at hand goes beyond these approaches by illustrating the underlying causal chain in greater detail, thus revealing the crucial levers for increasing consumers' purchase intentions in this context.

Based on the overall findings of this study, several implications arise for marketing practice in the context of e-commerce and social media. In order to respond to the problem of dwindling credibility of online reviews, it is important for reliable companies to understand how consumers perceive and assess the credibility of online reviews, and particularly, to know what factors determine review credibility from the consumers' point of view. These consumer-oriented insights are of particular importance to businesses with a strong market orientation and customer focus in the context of e-commerce. Due to our comprehensive and integrative approach, we provide a broad spectrum of relevant determinants of online review credibility and thus many substantive starting points that marketing managers can address. To begin with, marketing managers should especially be aware of the dominant role of peripheral cues and seek to take advantage of the latter to increase review credibility. In particular, they should promote website reputation, for instance, by acquiring respective quality seals and displaying them prominently on their website. Likewise, they should also highlight reviewers' expertise, for instance, by using conspicuous symbols or icons. In addition, the use or more prominent display of product/service rating seems also promising to increase review credibility among consumers.

The most groundbreaking implication of this study refers to the conflicting effect of review quantity, as it turns upside down the conventional corporate practice of maximizing the number of online reviews for a product or service. According to this, marketing managers should be aware that too many reviews may be counterproductive and raise suspicion among consumers. When having reached a critical mass of reviews, they should no longer actively encourage consumers to contribute online reviews, but rather ensure a sufficient degree of quality, particularly in terms of accuracy and completeness of online reviews. However, despite the superior role of peripheral cues in determining review credibility, marketing managers should also consider the importance of factors of argument quality, in particular, the accuracy and completeness of online reviews. Here, for instance, marketing managers could offer customers of a certain product or service an incentive (e.g., vouchers, discounts or points for a customer bonus program) for writing an online review that meets certain requirements with regard to accuracy and completeness. Moreover, they could implement a monitoring system that is able to detect inaccurate or incomplete reviews and to respond to these reviews, for instance, by posting a comment to the respective review that serves as a corrective and provides the accurate or complete information.

Furthermore, the study findings can help businesses to reduce or eliminate the impact of forged online reviews on consumers' perceived credibility by serving as a reference point in designing and developing effective forgery and fraud detection techniques or measures with regard to online reviews. Although our study does not yield concrete measures on how to eliminate such influence, it provides the driving factors of review credibility from the consumer's perspective and thus the factors these measures should target from the consumer's standpoint. Accordingly, measures taken by providers should especially contribute to increasing or enhancing the accuracy and completeness of online reviews, as well as reviewer expertise, product/service rating and website reputation, thus supporting the factors that create credibility among consumers. Overall, it can be stated that grasping the determinants of online review credibility and its impact on consumers' purchase intentions is important to e-commerce research and practice, as it greatly contributes to our understanding of consumers' shopping behavior in the e-commerce context and thus helps to enhance the competitiveness of companies (Lin et al., 2018).

Despite these contributions to research and practice, this study is subject to some important limitations that require consideration, but at the same time may represent promising starting points for future research. This pertains particularly to those findings that conflict with previous research and the correspondingly derived initial assumptions of this study. In this connection, the non-significant effect of review consistency suggests to examine moderating variables, such as consumer expertise and involvement, which may determine the significance of its impact on review credibility as already pointed out earlier and might, as well, influence other effect relationships in this context. Moreover, as already mentioned, the conflicting effect of review quantity may be a consequence of dynamic developments surrounding the research issue, thus indicating the general drawbacks of cross-sectional studies that are not able to live up to impacts across time. Accordingly, the effect relationship between review quantity and review credibility requires further examination, for instance, by means of replication or longitudinal approaches in order to confirm or reject our findings and the underlying explanation. From a practical perspective, this is a highly relevant and urgent issue, as it has important strategic implications for companies with regard to online reviews of their products or services. Another

potential limitation pertains to the factor of accuracy, whose assessment requires a certain amount of information on the reviewed product or service from the recipient. In line with Jamil and Hasnu (2013), we assume that when searching online for a certain product or service and reading respective online reviews, consumers do have at least some background knowledge about that product or service in order to assess the accuracy of a corresponding review. Thus, we have not explicitly considered the case of consumers without respective knowledge in our study. However, it is entirely possible that some consumers may not have enough prior knowledge, so that it becomes difficult for them to assess the accuracy of information in the online review. In this case, information accuracy is very likely to be irrelevant, as the consumer cannot reliably evaluate it. Thus, information accuracy may not have a significant impact on review credibility in this situation.

As our results show a significant effect of information accuracy on review credibility, it can be concluded that the consumers in our study overall had sufficient prior knowledge about the product in the online review, thus supporting our assumption that consumers do have at least some background knowledge about the respective product or service in the online review. Nonetheless, the clarification of this issue demands further investigation, advising studies to examine prior knowledge as a moderator in the effect relationship between review accuracy and review credibility. Moreover, as prior research has yielded inconsistent findings on the role of consumers' involvement when processing online reviews and assessing their credibility (e.g., Cheung et al., 2012; Fan and Miao, 2012; Fan et al., 2013), future research should thoroughly examine how the relationship between each determinant and review credibility is affected by consumers' involvement.

Likewise, future research could address whether the negative effect of review quantity and review credibility is moderated by or even contingent on the valence of reviews. Although negative reviews were found to be perceived by consumers as less credible than positive reviews (Lim and van der Heide, 2015), it may be that review quantity in terms of a great number of negative reviews may not have a negative effect on credibility, because consumers would not expect companies to forge negative reviews for their own products or services. Given the above-mentioned bri-  
sance and practical implication of the negative effect of review quantity on review credibility, it is of great importance to examine a potential impact of review valence on this relationship.

Furthermore, although our study provides initial consumer-related suggestions regarding the question of how to eliminate the influence of forged online reviews on credibility, this issue remains highly underresearched and demands further examination, particularly from a provider perspective and perhaps also a more technical perspective when it comes to forgery and fraud detection techniques. As our study is able to give insight into the factors that drive credibility from a consumer perspective and thus the factors towards which these measures should be targeted from the consumer's point of view, it may not only serve as a useful point of reference for future consumer-oriented approaches but also for respective provider-oriented studies. Considering methodological aspects and the study sample, although our analyses suggest the absence of common method and non-response bias, a potential self-selection bias cannot be completely ruled out due to the procedure of data collection via review websites and respective social media. Finally, the generalization of the results is limited by the German study context and the particular review website Yelp. Future research could therefore investigate peculiarities across different cultural contexts and review platforms.

In general, as the credibility of online reviews is put increasingly into question and corresponding empirical research remains scarce, further studies are essential to empirically strengthen the study results and improve our understanding of determinants and consequences of online review credibility. The model and measurement instruments developed may serve as a foundation in this process. In summary, this study makes an initial contribution towards filling in the gap concerning our knowledge of what determines consumers' perception of online review quality and subsequent purchase intentions.

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## Appendix

## Scale Reliability and Validity of Exogenous and Endogenous Constructs

Factor	Indicators	ITK corr.	Factor load.	Cronb. A	Expl. var.	References
Accuracy	Online reviews on Yelp are accurate.	0.853	0.897	0.929	0.767	Nelson et al. 2005; Cheung et al. 2008; Filieri and McLeay 2013
	Online reviews on Yelp are thoroughly written.	0.856	0.901			
	Online reviews on Yelp are correct.	0.845	0.887			
	Online reviews on Yelp are precisely formulated.	0.784	0.817			
Completeness	Online reviews on Yelp contain all the information needed about the reviewed products/services.	0.873	0.901	0.951	0.831	Yang et al. 2005; Cheung et al. 2008; Luo et al. 2013
	Online reviews on Yelp contain very detailed information about the reviewed products/services.	0.898	0.931			
	Online reviews on Yelp contain a variety of information about the reviewed products/services.	0.890	0.921			
	Overall, online reviews on Yelp are comprehensive.	0.867	0.893			
Timeliness	Online reviews on Yelp are current.	0.907	0.947	0.949	0.862	Somers et al. 2003; Cheung et al. 2008; Cheung 2014
	Online reviews on Yelp are timely.	0.880	0.911			
	Online reviews on Yelp are up to date.	0.893	0.928			
Review Quantity	There is a great number of reviews from different authors about many products/services on Yelp.	0.894	0.941	0.938	0.803	Kang and Kim 2006; Zhang et al. 2014; Filieri 2015
	There is a variety of reviews about many products/services on Yelp.	0.905	0.952			
	There is a multitude of information about many products/services on Yelp.	0.899	0.939			
	The number of online reviews about products/services on Yelp is high.	0.720	0.735			
Review Consistency	Different online reviews about a product/service on Yelp are often consistent with each other in terms of content.	0.657	0.706	0.873	0.638	Cheung et al. 2012; Chang et al. 2015; Luo et al. 2015
	Different online reviews about a product/service on Yelp overlap to some extent with each other in terms of content.	0.736	0.804			
	There are a number of overlaps among different online reviews about a product/service on Yelp.	0.769	0.851			
Reviewer Expertise	Reviewers of online reviews on Yelp seem to possess sufficient knowledge.	0.882	0.926	0.940	0.839	Ohanian 1990; Folse et al. 2013; Fang 2014
	Reviewers of online reviews on Yelp seem to have enough insights to make an assessment.	0.883	0.927			
	Reviewers of online reviews on Yelp seem to be competent.	0.860	0.895			
Product/Service Rating	The rating of products/services on Yelp by means of stars has narrowed down the number of alternative products/services that are interesting to me.	0.874	0.900	0.955	0.842	Filieri and McLeay 2013; Filieri 2015
	The rating of products/services on Yelp by means of stars has allowed me to find products/services that satisfy my needs.	0.915	0.946			
	The rating of products/services on Yelp by means of stars has allowed me to find well-rated products/services.	0.909	0.940			
	The rating of products/services on Yelp by means of stars has allowed to me get a quick overview of products/services.	0.860	0.883			
Website Reputation	The website of Yelp is very popular.	0.833	0.879	0.924	0.755	Hsiao et al. 2010; Tams 2012; Chih et al. 2013
	The website of Yelp has a high reputation with good reason.	0.845	0.893			
	The website of Yelp is known for its high reputation.	0.848	0.896			
	The website of Yelp is trustworthy in my opinion	0.773	0.806			
Review Credibility	I think online reviews on Yelp are credible.	0.923	0.939	0.972	0.899	Cheung et al. 2012; Qiu et al. 2012; Luo et al. 2013
	I think online reviews on Yelp are factual.	0.923	0.939			
	I think online reviews on Yelp are reliable.	0.934	0.952			
	I think online reviews on Yelp are trustworthy.	0.944	0.963			
Purchase Intention	I intend to buy products/services about which I have read positive online reviews on Yelp.	0.910	0.939	0.957	0.851	Liu et al. 2009; Saxena 2011; Mir and Zaheer 2012; Hsiao et al. 2010; Chih et al. 2013
	If somebody asks me for advice on buying a product/service, I would recommend products/services about which I have read online reviews on Yelp.	0.904	0.932			
	As matter of principle, I inform myself before buying a product/service with the help of online reviews on Yelp.	0.867	0.888			
	In the future, I will buy products/services about which I have read online reviews on Yelp.	0.903	0.930			