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An Empirical Comparison of the Credibility on Customer Online Reviews and Product Tester Reviews

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Abstract: Especially when buying products online, the only information available is either from the manufacturer or from customers in the form of online reviews. Due to the increasing importance of online reviews, Amazon has a product tester program that writes product tester reviews in addition to previous customer online reviews. This study investigates the credibility of product tester reviews in the three core dimensions of credibility – competence, trustworthiness, and attractiveness. The authors compare customer reviews with product tester reviews in terms of their perceived credibility. Also, it is investigated whether the valence of the online reviews influences the credibility assessment. Based on an online experiment, a 2x2 between-subject-design is developed in an empirical analysis to gain empirical insights into the credibility of online reviews. The empirical analysis suggests the following main findings. Customers as authors of online reviews are rated as more credible. The authors of customer online reviews are perceived more competent, trustworthy and attractive by recipients compared to product testers. The valence of online reviews has no influence, except for the credibility dimension trustworthiness. The findings of this study enrich previous literature by showing online platforms with rating systems how customer reviews and product tester reviews are perceived by customers.

Keywords: Online Review, Credibility Dimensions, Product Tester Review, Customer Review, Source Credibility Model, Valence

1. Introduction

On the Internet, there is often a large amount of information about a single product. This wide variety of information makes it difficult for consumers to evaluate the credibility of the information [1]. Consumers try to obtain information from particularly credible sources in order to minimize risk in the context of their purchase decision [2, 3]. In addition to using manufacturer- and retailer-generated product information, internet users are able to read online reviews from other customers, who are familiar with the product [4]. If consumers feel not fully informed by the manufacturer or retailer, they miss information to decide. Because of this, more and more consumers prefer to rely on customer opinions rather than advertising information [5] and often value user-generated content (UGC) more credibly [6]. Online reviews can also be described as a form of electronic word of mouth (eWOM). The importance of this new form of word of mouth has greatly increased for consumers to minimize risk in the purchase process even in times of online commerce [1, 7, 8]. Likewise, the online reviews in combination with their valence influence the purchase of products [7] and sometimes they are the only source of information available [9]. Especially in the case of experience goods, there is hardly any other way to obtain experience ratings before consumption [8]. That is why both, research and companies, such as the online marketplace Amazon, are increasingly concerned with the optimization of online reviews [10, 11].

In Amazon's 'Amazon Vine' program, which is still relatively new in Europe, selected individuals receive free test products. The condition is that they write an online review about these products. In contrast to other online reviews, these product tester reviews are marked accordingly [12]. In this way, Amazon tries to control the marketing tool

of online reviews and offer consumers a credible source of information. Because product tester programs such as 'Amazon Vine' are still relatively new, it has not been investigated yet whether product tester reviews are perceived differently by consumers than customer reviews in terms of credibility. It is questionable whether the sole labelling that an online review was written by a product tester is explicitly perceived at all and whether this has an influence on the credibility assessment of the review author. Furthermore, the valence of online reviews has not been examined yet in this context. The question arises whether the credibility assessment of authors of online reviews are influenced by valence. This leads to the following research questions.

1) *Does a product tester review differ from customer reviews in the three core dimensions of credibility – competence, trustworthiness and attractiveness?*
2) *Does the valence of the online review influence the assessment of credibility?*

In order to answer the research questions, the theoretical background and the current state of research on the credibility of online reviews are presented below. On this basis, hypotheses are derived that are tested with the help of an extensive empirical analysis based on an online experiment.

2. Theoretical Background and Literature Review

2.1. Measuring the Credibility of Online Reviews

The credibility of online reviews is largely determined by informative and normative determinants [13]. Informative determinants include the strength of the argumentation, the credibility of the author, and the confirmation by the recipient's prior conviction. In contrast, the normative determinant is formed based on the recommendation consistency and the evaluation of the product [13]. Not only two factors, but three factors of source credibility were investigated by Wilson and Sherrell. One is the perceived characteristics of the author, such as expertise, trustworthiness, or attractiveness; the other is the message in general. The third factor is the medium or channel through which the online review is disseminated [14].

In this study, the focus is on the author's character traits ascribed by the recipient and the message, because credibility is assessed from the recipient's point of view. In summary, credibility assessment can be divided into three recipient-oriented areas: behavior-oriented, content-oriented, and source-oriented credibility assessment [15].

In behavior-oriented credibility assessment, an attempt is made to assess information as false or true based on the behavior and actions of the communicator or author. Therefore, nonverbal and extralinguistic behaviors are observed [15, 16]. With respect to online reviews, this area of credibility assessment is negligible. In the context of content-based credibility assessment, the focus is on the author's statements, which may include events that the author

experienced himself or invented [15]. The source-oriented credibility assessment is less concerned with content. This is of central importance with regard to the credibility of online reviews. As part of attitude research, it examines the conditions under which recipients attribute credibility to an author. In particular, the focus is on the influence of the available information about the author [17].

Probably the best-known model of source credibility (also called the Source Credibility Model) was established in 1951 by the authors Hovland and Weiss. They initially determined only a two-dimensional construct, which included the most important core dimensions of source credibility – competence and trustworthiness [18]. Based on this model, numerous other studies were conducted in the following years, in which the Source Credibility Model was extended by different dimensions [19-21]. Some authors developed up to 16 different dimensions, but it is still unclear how large the contribution of each dimension to the variance explanation is [3]. However, many authors agree that the dimensions of competence and trustworthiness are among the core dimensions of source-oriented credibility [3, 22]. Further research revealed that the author attractiveness dimension is also important in recipient credibility judgments [23-25]. Canning and West modified the third dimension of the Source Credibility Model by attributing attractiveness to the similarity, familiarity, and likeability of the author [24]. According to O'Hara, Netmeyer and Burton, the three credibility dimensions of competence, trustworthiness, and attractiveness are three different constructs that together map the credibility of an author [26]. The three dimensions are explained in more detail below.

Competence is not a character trait of an author, but a perceived trait by the recipient; actual competence does not reveal itself to the recipient [27]. Perceived characteristics of the author can be, for example, qualification, experience, knowledge, as well as ability [24]. For the following empirical investigation, this dimension is defined as follows: The perceived competence of an author is conditioned by the authors knowledge and experience with an object and the resulting generated abilities to make statements accurately.

In everyday life, the term trustworthiness is often used as a synonym for credibility. In the literature, a distinction is usually made between credibility and trustworthiness [5, 28]. Trustworthiness can be referred to as a subprocess of. Thus, it is essential to build trust with the recipient in order to appear credible. Important factors regarding trustworthiness are honesty, sincerity, reliability, and independence [20, 25, 29]. This leads to the following definition of trustworthiness: the perceived trustworthiness of an author is conditioned by the honest, reliable, and independent communication of a message.

The third dimension of credibility is attractiveness. McGuire sees attractiveness as similarity, familiarity, and liking between writer and recipient [30]. This view is also shared by Wilson and Sherrell [14]. According to Smith, Menon and Sivakumar, the following definition of attractiveness is derived for this study: The perceived

attractiveness of an author is conditioned by the shared values of the recipient and the author, which creates a sense of liking and familiarity in the recipient [5].

All the previous definitions indicate that the attribution of the credibility attribute lies with the recipient. Thus, the judgment of the recipient is a crucial factor in credibility assessment. Based on the previous definitions, delineations, and credibility models, the following definition of an author's credibility is provided: The perceived credibility of an author is conditioned by the perceived competence, trustworthiness, and attractiveness with which the author conveys a message to the recipient and thereby influences the recipient.

Another factor that influences the credibility of information is the valence of the information. The valence of an online review can be defined as the content orientation of the review in terms of positivity or negativity.

2.2. Current State of Research on the Credibility of Online Reviews

The competence of an author of an online review is very important for the attribution of credibility, since messages are more likely to be accepted from people who are considered to be more competent [19]. Similar results were also shown by Lafferty and Goldsmith. Their study used advertisements and brands to show that consumers' thinking about it immediately changed favorably when a person endorsed the product who was perceived as an expert. This positive stimulation was also noted in the next purchase through higher purchase intention [31]. Huang and Chen also showed that consumers prefer the opinion of experts with regard to online travel reviews. However, they also found that consumers' lack of expertise can be compensated by trustworthiness [28]. Similar findings are also provided by Lascu, Bearden and Rose and Mackiewicz, Yeats and Thornton [32, 33]. Fan and Miao also show that increased expertise and involvement leads to increased eWOM credibility [34].

With regard to the trustworthiness of authors of online reviews, according to Steffes and Burgee, the main challenge is to gain consumers' trust [1]. For customers to include online reviews as an aid in their purchase decision process, consumers have to trust the online review author [5]. The trustworthiness of the author already gives an indication of the credibility of the information in the online review [13]. However, it is difficult to implement because online reviews require more trust than traditional WOM communication due to their anonymous author. For this reason, authors of online reviews can be assessed more poorly [43]. Thus, the information can only be identified as true if the recipient trusts the author. Although trust is subjective, confidence can be built by simulating superficial characteristics of the author [3].

Regarding the importance of the attractiveness of online review authors, the following findings can be derived from the literature. Although online reviews are written by anonymous users, are quite capable of subjectively evaluating an author based on the online review [27]. Steffes and Burgee were able to prove that consumers, especially in online reviews, attach importance to the congruence of their character with that of the author [1]. By identifying with the author, the influence on the recipient increases [1]. However, if there are inconsistencies between the views of the author and the recipient, the author is more likely to be judged as untrustworthy by the recipient [13, 27]. If the writer is perceived as similar, familiar, and likeable, the writer is considered attractive [35].

Research is not only concerned with online review writers, but also with the valence of online reviews. For example, Mackiewicz found in a study that online reviews are not completely independent, they tend to be more positive [36]. The credibility of the information of an online review depends significantly on the valence of the online review [37]. However, this influence is only present if the information from the online review is identified as credible. According to Mudambi and Schuff, extreme online reviews are considered more untrustworthy than moderate online reviews [6]. In contrast, Forman, Ghose and Wiesenfeld take a different position. Their study found out that extreme online reviews have a greater impact than moderate online reviews [38]. These different results can be explained by the product categories studied. While Forman, Ghose and Wiesenfeld studied consumer durables [38], Mudambi and Schuff used experience goods [6]. Furthermore, Sen and Lerman determined that for utilitarian products, negative online reviews affect the credibility dimension trustworthiness more than the other dimensions [39]. For hedonistic products, on the other hand, positive online reviews tend to lead to higher trust [39]. These results are also supported by Reichelt, Sievert and Jacob. The authors justify the disbelief of positive online reviews by arguing that positive online reviews are more likely to arouse suspicion of being manipulated, especially when there are a large number of positive online reviews [40]. Negative online reviews are considered more credible, since companies have a significantly higher interest in positive online reviews that can improve their sales [40]. But consumers are also influenced by the combination of positive and negative online reviews. Lopes, Dens and De Pelsmacker found that adding positive information to negative online reviews, gives consumers a sense of information completeness [41]. Based on the preceding literature, it appears that in the context of product tester reviews, credibility has not been measured using the various credibility dimensions, nor has the valence of the review been included in the credibility assessment. This paper aims to fill this research gap.

3. Hypothesis Development and Conceptual Framework

People try to minimize their decision risk by imitating other people [28]. This behaviour can also be observed in the context of the purchase process. Consumers are interested in the product evaluations of others, because they assume that they have more and better information than they do due to

the consumption they have already made [42]. In order to obtain a similar level of information and to minimize the risk, consumers read online reviews before making purchases. Thereby, the consumer simultaneously evaluates the credibility of the author and the online review. The three-dimensional Source Credibility Model of Canning and West can be used to understand how consumers assess the credibility of online review authors [24].

According to the definition of competence from section 2.1, an author is considered competent if he or she can demonstrate knowledge and experience with a product. It can be assumed that this type of competence is primarily present among product testers. They are provided with products free of charge by companies in order to test them and subsequently write online reviews based on their experiences [12]. Product testers have the explicit task of engaging with the product. Customers tend to write an online review of a product more casually and for personal reasons [44]. It can be assumed that product testers are more likely to become a kind of expert as a result of consuming the product, since they have supposedly dealt with the product more objectively and to a greater extent than other customers. Another reason supporting this assumption is the labelling of a product tester review. By labelling the online review, the customer knows that the product tester has actually received the product. With a customer review, the customer can only assume whether the customer reviewer really bought and tested the product. Past studies, such as those by Smith, Menon and Sivakumar or Huang and Chen, have shown that people prefer the opinion of experts [5, 28]. Experts are said to have a certain expertise in a certain area, which increases the probability that the recommendations of experts will prove to be true [45]. The following initial hypothesis emerges from the above points.

H1a: The author of a product tester review is considered more competent than the author of a customer review.

The credibility of an online review is also influenced by the valence of the online review. Against the background of the exchange theory, people try to place the output of an interaction in an appropriate relationship to the input [46]. Since product testers receive the test products free of charge, they want to return an equally large contribution to the company according to the exchange theory in order to avoid cognitive dissonance. Based on this, it can be assumed that product testers tend to write positive online reviews in order to make a counter contribution for the free product. If, contrary to consumer expectations, a negative product tester review is written, it can be assumed that the perceived competence of the author is thereby underlined. The product tester disregards socially desirable behaviour and tries to pass on his gained expertise about the product to other consumers with the product tester review. As a result, his opinion gains weight, so that the perceived competence of the author is reinforced. Based on this, the following hypothesis can be formulated.

H1b: The effect that the author of a product tester review is considered more competent than the author of a customer review is reinforced by the negative valence of a product tester review.

Building on existing research [28, 32, 47], customers are believed to be less competent than product testers in terms of their ratings by recipients, but are said to be more trustworthy. Consumers do not have much trust in people who are paid for their product information [25]. Although product testers are not directly compensated, they are allowed to keep the test product for private use free of charge. Based on exchange theory, this can be viewed as a contribution from the company that is not matched by a contribution from the product tester. Consumers could assume that the product tester wants to contribute in the form of a benevolent online review due to the free product and that this is therefore not independent or truthful. The transfer of ownership of the products to be tested can thus diminish the trustworthiness of product testers, which leads to the following hypothesis.

H2a: The author of a customer review is considered more trustworthy than the author of a product tester review.

This effect could be reinforced by the valence of the online review. As already explained in the course of hypothesis H1b, it can be assumed on the basis of exchange theory that product testers feel obliged to write positive online reviews. This behaviour can be explained on the basis of the theory of cognitive dissonance [48]. According to this theory, people act as consistently as possible with their perceptions. They try to avoid cognitive dissonance by controlling their behaviour as a consequence of their personal opinion [48]. In terms of online reviews, this means that customers who perceive a product as positive will also write a positive online review of this product. A negative review in this context would lead to cognitive dissonance, since the customer would act contrary to his feelings. In the case of product testers, however, the component of reward is added. Regardless of how the product testers feel about the product, they are under pressure to receive a reward for their product tester review. A contribution was made by the company in advance that could influence the writing of a product tester review. The customers, on the other hand, have financed the product from their own money and thus have no obvious reason to write a false positive online review. It can be assumed that customers who have written a positive online review are attributed a higher trustworthiness by the recipient than product testers who have written a positive online review. The following hypothesis can be derived from that.

H2b: The effect that the author of a customer review is considered more trustworthy than the author of a product tester review is reinforced by the positive valence of a customer review.

In addition to competence and trustworthiness, the credibility of an author of an online review is also evaluated on the basis of attractiveness. There must be a certain degree of agreement between the author of an online review and the recipient, so that the message is accepted more convincingly and more quickly by the recipient [1]. This agreement or the attractiveness of the author is measured by the similarity, familiarity and sympathy between the recipient and the author of the online review. It can be assumed that there is a

higher similarity between consumers among themselves than between consumers and product testers. Since product tester programs are not yet such a common marketing tool, it is likely that there is little familiarity between consumers and product testers so far [49]. The labelling that the online review was written by a product tester poses some questions for consumers. It is still unclear to them under which exchange conditions the online review was written. For example, consumers do not know whether the product tester is only allowed to keep the test product, whether he or she has been given guidelines for writing the online review, or whether he or she receives a reward for a positive product tester review or a punishment for a bad product tester review. A higher familiarity is given to an author of a customer review, since here no other exchange conditions are present. Likewise, it behaves with the sympathy. The assumption that product testers write benevolent product tester reviews makes them seem less likeable than customers who independently create an online review. For the previously mentioned reasons, it can be assumed that consumers are more likely to identify with the author of a customer review than with a product tester [28]. This leads to hypothesis H3a.

H3a: The author of a customer review is perceived as more

attractive than the author of a product tester review.

Based on the theory of cognitive dissonance, it can be assumed, as in hypothesis H2b, that customers try to steer their behaviour consistently with their personal opinion. It can be assumed that customers write a positive review if they really liked the product. Based on the motives for writing an online review, it can be assumed that the customer has written the online review to help others or has followed his desire for interaction [44]. This would support the effect of the customer's attractiveness. With negative reviews on the other hand it can be assumed that the customers like to express their negative feelings and their disappointment of the product or also from the supplier. The motive of helping others is rather secondary. It can be concluded that the attractiveness of the author of a customer review is strengthened by a positive valence of the online review. Thus, the following hypothesis H3b can be formulated.

H3b: The effect that the author of a customer review is perceived as more attractive than the author of a product tester review is reinforced by the positive valence of the customer review.

The theoretical background and the hypotheses derived lead to the following Research Model (see Figure 1).
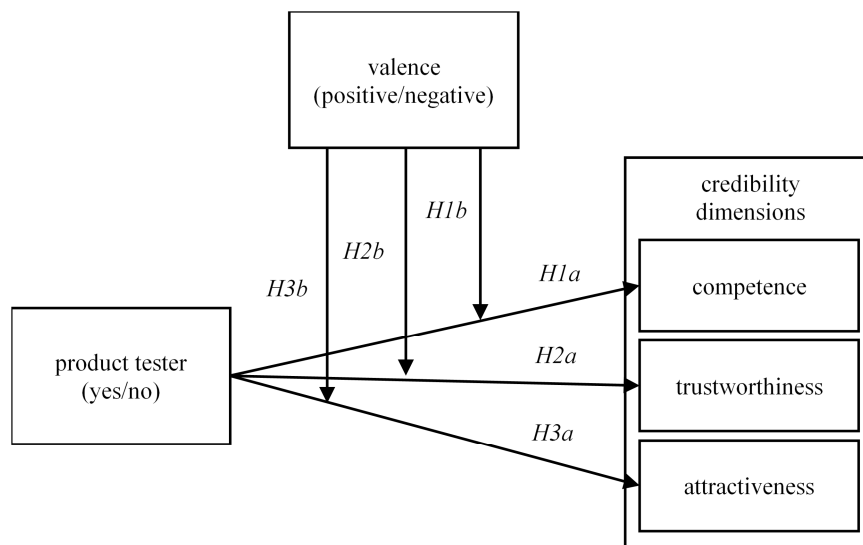

Figure 1. *The conceptual model.*

4. Research Design and Process

In order to be able to empirically test the previously established hypotheses, an online experiment was conducted. The SoSci Survey platform was used to conduct the online experiment. As part of the experiment, the participants were asked to put themselves in a purchasing situation at the online marketplace Amazon. To make the study as realistic as possible, real online reviews were used with some modification. The online reviews were manipulated with regard to the author (customer/product tester) and valence (positive/negative). The manipulation of whether an online review was written by a customer or a product tester was

realistically mapped with Amazon's original cue (see Appendix A). The green label 'Vine customer review of a cost-free product' [12] informed the participants that this online review was written by a product tester. To simulate a positive online review, five out of five stars were displayed on the star scale. In contrast, only two out of five stars were displayed for a negative online review. Similarly, the body text of the online review was manipulated according to valence. To be able to explicitly attribute the participants' responses to the manipulation, the same text was used in the positive and negative online reviews. The texts differed only in the valence of the words. This extreme form of manipulation was chosen following the research findings of Forman, Ghose and Wiesenfeld. As they showed in their

study, extreme online reviews have a greater impact on consumers than moderate online reviews [38].

The formulation and structure of the review questionnaire were created based on the hypotheses established before. In order to make the online experiment easy for the participants, the processing time was kept as short as possible and an attempt was made to design the online experiment as self-explanatory as possible. In order to test the comprehensibility and practicability of the questionnaire of the online experiment, a pre-test was conducted before the start of the field phase. Since the items cannot be changed after the start of the field phase, conducting a pre-test was essential to improve the structure and wording of the items. For this purpose, a test link was sent to selected individuals who, for various reasons, were predestined to review this online experiment before it began. In addition to subject matter experts, individuals who had little to no previous experience with online experiments were also selected. This was to test the comprehensibility of the questionnaire by inexperienced persons. The comments of the pre-test participants were directly stored digitally and could be used to optimize the online experiment.

After the pre-test was completed, the field phase began. The link to the online experiment was activated for the period from 19.12.2019 to 18.01.2020. This could be found online via search engines. In addition, the link was forwarded in social media such as WhatsApp or via private and business mails. After an explanation about the data protection regulation and a confirmation of the willingness to participate, the test persons were placed in a specific online purchasing situation. It was explained to them that they had found headphones on the online marketplace Amazon and were in the process of reading online reviews of this product. The participants were randomly assigned to different scenarios (see Appendix A). They were presented with either a positive customer review, a positive product tester review, a negative customer review, or a negative product tester review. This resulted in a 2 x 2 between-subject- design from which four experimental groups were derived (see Figure 2).
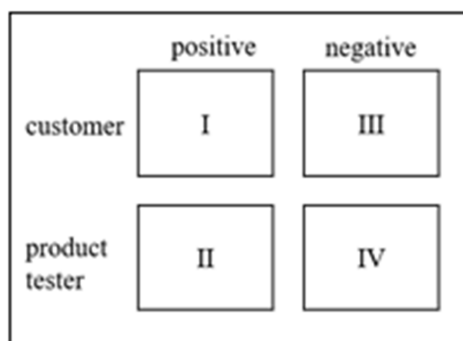

Figure 2. *The 2 x 2 between-subject-design.*

After viewing the online review, participants were asked to agree or disagree with various statements about the author's competence, trustworthiness, and attractiveness based on the review. Four items were asked for each of the three credibility dimensions. Since credibility is a three-dimensional construct, it can only be measured using a multi-item scale [15]. For this reason, the dimensions competence, trustworthiness and attractiveness were asked individually. The selected items are based on the Source Credibility Model of Canning and West presented at the beginning. This was followed by the reality and manipulation check as well as questions and statements about attitudes and experience with online reviews, product testers, and the internet in general. Finally, some demographic data were requested from the participants. In total, twelve items were used to test the hypotheses, three items to map realism, two items to test manipulation, nine person-related attitude and experience items, and three demographic items for measurement.

The items testing the hypotheses were all closed-ended questions and were answered using a Likert scale ranging from one ('strongly disagree') to seven ('strongly agree'). Thus, all variables used were interval scaled. This scale was chosen because it allows a simple response for the respondent and a comparable evaluation. For the reason that participants often have an individual tendency to respond systematically in questionnaires, two items in each queried dimension were semantically rotated. In addition, to avoid socially desirable answers and to query one's own subjective opinion in the online experiment, it was pointed out that there are no right or wrong answers.

For a general check of whether the situation described in the online experiment could be assessed as realistic as possible, the participants were asked on the basis of two interval scaled items whether they could imagine the situation described. A Likert scale from one to seven was used to check whether the manipulation of the online reviews had worked. For this purpose, the participants were first asked whether the author of the online review received the product for free and whether he or she was thus a member of 'Amazon Vine'. If there was a high level of agreement with this question, it can be assumed that the participant had previously read a product tester review. Accordingly, a participant who has previously read a customer review should answer this question with low agreement. The same principle was used to test the perception of the valence of the online review.

5. Empirical Results and Discussion

5.1. Descriptive Statistics

After completion of the online survey, a sample of n = 204 was available. In order to have the same number of participants in the experimental groups, discontinued experiments were not considered. Overall, 91.60 percent of the participants agreed that they were experienced in using the internet. Only 3.00 percent (tended to) disagree, while 5.40 percent were undecided. Based on these results, it can be confirmed that the goal of generating an online affine sample was achieved. Based on this, the data on reading online reviews are representative, as the participants are experienced internet

users. At this point, the importance of online reviews in the purchasing process also becomes clear once again, as 70.60 percent of the participants stated that they often or always read online reviews before making a purchase. Only 8.80 percent said they hardly ever or never read online reviews. This is also reflected in the participants' estimated usefulness of online reviews. 79.50 percent of the participants see online reviews as helpful. However, only 38.20 percent stated that they had already written an online review themselves. Experience in using product tester programs shows some differences. Product tester programs that are still relatively new, such as 'Amazon Vine', were known to 45.10 percent of the participants before the study. 54.90 percent of the participants said they had no experience with such programs. In addition, 85.80 percent said they had not (been) a product tester themselves or knew a product tester. In contrast, 10.30 percent of the participants knew a product tester and 3.90 percent said they had been a product tester themselves.

In summary, the sample is suitable for assessing the credibility of online reviews. The high participation of the younger generation as well as the attitude and experience in using the Internet and online reviews indicate a high online affinity of the sample. This is advantageous for answering the research question, as the participants are for the most part already familiar with the topic.

5.2. Reliability Testing and Factor Analysis

In order to check whether the manipulation was successful for the four experimental groups with the help of the manipulation check, two items were used for measurement. The first was to test whether the participants could recognize when an online review was written by a product tester and the second was to check whether the participants correctly perceived the valence of the online review.

To test whether the manipulation of the author of the online review was successful, participants were shown the following statement: 'The author of the online review received the product for free (member of 'Amazon Vine')'. For evaluation, a T-test for independent samples was conducted to measure the difference between the experimental group that read a customer review and the experimental group that had a product tester review. To perform a T-test for independent samples, the following conditions must be met:

The dependent variable is interval scaled.

1) The studied characteristic is normally distributed in the populations of the two groups.
2) The individual measured values are independent of each other.
3) The groups come from populations with approximately identical variance.

Since the consent of the participants to the question of whether the author of the online review received the product free of charge was recorded using a Likert scale from one to seven, this variable is interval scaled and fulfills the first condition of a T-test for independent samples. Due to the presence of a sample larger than $n = 30$, the central limit theorem could be applied. This states that the mean (MV) of

any distribution approaches the normal distribution with increasing sample size. Thus, the second condition for the execution of a T-test for independent samples is given. The third condition is also fulfilled, since the experiment was conducted online and the participants could not influence each other. The individual measured values are therefore independent of each other. To fulfill the fourth condition for a T-test for independent samples, variance homogeneity must be present in the groups. As the Levene's test showed, variance heterogeneity is present $(F(1,202) = 5.314; p = 0.022; n = 204)$. For this reason, a T-test with Welch Correction was performed. The T-test with Welch Correction found a significant difference in participants' perception of whether the previously read online review was written by a customer or a product tester $(t(181,666) = 6.813; p = 0.000$ / customer: MV = 3.30; standard deviation (SD) = 1.693 / product tester: MV = 5.29; SD = 2.389). Thus, the manipulation of the online review was successful with respect to the author.

The valence of the online review was also manipulated. The first three conditions for performing the T-test are fulfilled analogously to the previous manipulation check. The Levene's test again indicated variance heterogeneity in the groups $(F(1,202) = 3.934; p = 0.049; n = 204)$. Therefore, the T-test with Welch Correction was applied again. This revealed a significant difference in means, so that it can be assumed that the manipulation of valence in the online reviews was successfully perceived by the participants $(t(199,702) = 17.286; p = 0.000$ / positive: MV = 6.29; SD = 1.794 / negative: MV = 2.17; SD = 1.611).

In addition to the manipulation check, the questionnaire of the online experiment was also intended to determine how realistic the described situation was. This was to be checked with the help of a reality check. For this purpose, the participants were asked for their assessment on the basis of three interval scaled items from one to seven. For each of the three items, the average value was over 5.47 and thus well above the mean value of 3.5. The online experiment can therefore be regarded as being close to reality.

Factor Analysis was used to check whether the four items were suitable for measuring the respective credibility dimensions. Even though the three-dimensional Source Credibility Model is an established measurement instrument, the confirmatory Factor Analysis was to be used to check whether certain expected correlations exist between the different variables. It was initially expected that a construct for the competence, trustworthiness, and attractiveness of an author would emerge on the basis of each of the four items. The goal of the Factor Analysis is to structure and reduce the data accordingly. To test whether Factor Analysis is possible for all three dimensions, the Kaiser-Meyer-Olkin-test (KMO-test) and the Bartlett-test were performed. The values for the KMO-test were above the critical value of 0.6 for all three dimensions. The Bartlett-test also reached statistical significance for all three dimensions. Thus, a Factor Analysis can be performed for all three dimensions.

Based on the Factor Analysis, it was first possible to extract a factor according to the Kaiser Guttman Criterion for

the credibility dimension of competence. The four selected items can explain a total of 58.02 percent of the variance of the construct of competence. The item 'the author of the online assessment seems experienced' loaded highest on the construct (0.839). The lowest is the semantically rotated item 'the author of the online evaluation has not actually tested the product' loaded on the construct (0.597). This value is below the critical value of 0.70, indicating a low correlation between the item and the construct. The remaining two items loaded highly on the construct (0.808 and 0.779) compared to the critical value of 0.70.

For the dimension of trustworthiness, the Factor Analysis showed that the four items can explain a total of 58.87 percent of the variance in the construct of trustworthiness. All factor loadings are above the critical value of 0.70, with the item 'the author of the online evaluation does not seem very sincere' loading highest (0.794) and the item 'the author of the online evaluation was very honest' loading lowest (0.731) on the construct.

For the dimension of attractiveness, Factor Analysis yielded the following results. Overall, the four items explain 53.99 percent of the variance. Three of the four items have factor loadings greater than the critical value of 0.70. However, the item 'my opinion agrees with the values of the author of the online evaluation' only loaded on the construct of attractiveness with a value of 0.686.

In addition to the Factor Analysis, the reliability analysis should provide information about which items prove to be useful for the measurement instrument. The aim was to check whether the items queried, which represent the three constructs of competence, trustworthiness, and attractiveness, have internal consistency. Thus, it can be assessed whether the constructs are suitable for further analysis. For this purpose, the reliability coefficient Cronbachs alpha was calculated. The critical value for the reliability measure is 0.70 [54]. Table 1

shows the Cronbach's alpha values for each construct.

Table 1. *Cronbach's alpha of the three credibility dimensions.*

Credibility dimensions	Cronbach's alpha (> 0.70)
competence	0.751
trustworthiness	0.766
attractiveness	0.713

The Cronbach's alpha values for all three credibility dimensions are above the critical value of 0.70, so that the constructs can be retained for further analysis. Since the Factor Analysis showed that the items all loaded relatively high on the respective constructs, all items were retained for further calculations.

5.3. Hypothesis Testing

After the three constructs of competence, trustworthiness, and attractiveness has been tested using Factor Analysis and reliability testing, three T-tests for independent samples could be conducted to test hypotheses H1a, H2a and H3a. In order to conduct the T-tests, the conditions stated in Section 5.2 had to be met, as was previously the case for the manipulation check.

Since all three constructs were measured with a Likert scale from one to seven, the data are available interval scaled. A normal distribution of the respective dependent variable can be assumed, since the sample at this point is above n = 30 and thus the central limit theorem can be applied. The independence of the individual measured values is also given by the online experiment. With regard to the variance homogeneity in the groups, the Levene's test is not significant for all three dimensions, so that variance homogeneity exists in the groups. Thus, all conditions for the performance of the T-tests are fulfilled.

Table 2. *Results of the Levene's test for the three credibility dimensions.*

Credibility dimensions	Degrees of freedom (df)	F-value	Level of significance
competence	201	0.246	0,620
trustworthiness	201	1.445	0,231
attractiveness	200	0.209	0,649

The T-test for the dimension of competence found a significant difference at the 0.05 level between the experimental groups (see Table 3).

Table 3. *T-test for equality of means for the three credibility dimensions.*

Credibility dimensions	T	Degrees of freedom (df)	sig. (2-sided)	Mean customer	Mean product tester	Mean difference	Std. error of diffenrence
competence	2.235	201	0.026	4.79	4.40	0.388	0.174
trustworthiness	3.611	201	0.000	5.10	4.48	0.170	0.278
attractiveness	4.597	200	0.000	4.75	3.98	0.768	0.167

The results show for the dimension competence a different direction than expected. The competence is higher rated for an online review of a customer than for a review of a product tester. For this reason, hypothesis H1a must be rejected. For the dimension of trustworthiness, the T-test also revealed a significant difference between the experimental groups. The

trustworthiness of the customers was rated higher by the recipients than that of the product testers, so that hypothesis H2a can be provisionally confirmed. The T-test also shows a significant difference between the experimental groups for the attractiveness of the author. As hypothesized in H3a, the writer of a customer review will be perceived as more

attractive than the writer of a product tester review.

In order to test the remaining three hypotheses, which focus on the interacting effect of valence, a Two-Factor-Analysis of Variance (ANOVA) was conducted. The ANOVA for the construct of competence shows that the overall model is significant at the 0.05 level $(F(3,199) = 2.886; p = 0.037)$. As previously determined by the T-test, competence is assessed differently depending on the author $(F(1,199) = 5.066; p = 0.025)$. While the competence of product testers was only rated with an average of 4.40, the competence of customers was rated higher with an average value of 4.79. Figure 3 shows these mean values together with those considering the valence of the online reviews.

There is no significant correlation between the valence and the trustworthiness dimension $(F(1,199) = 2.149; p = 0.144)$. However, there is a significant interaction between the type of publisher and the valence of the online review $(F(1,199) = 8.127, p = 0.005)$. Looking at the interaction diagram in Figure 4, it can be seen that the type of author (customer/product tester) has a different effect depending on the valence (positive/negative) of the online review. For product testers, the trustworthiness of negative online reviews is rated higher (MV = 4.84) than that of positive online reviews (MV = 4.12). The opposite is true for customer reviews. The customer is rated more trustworthy (MV = 5.21) for a positive online review than for a negative online review (MV = 4.98). Based on this, hypothesis H2b can be provisionally confirmed.

The third dimension of credibility is the attractiveness of the author. The ANOVA performed on this dimension shows statistical significance for the overall model $(F(3,198) = 8.345; p = 0.000)$. Depending on the author, the attractiveness is assessed significantly differently by the recipient $(F(1,198) = 21.434; p = 0.000)$. As shown in Figure 5, product testers are rated less attractive (MV = 3.98) than customers (MV = 4.75).

The attractiveness dimension also shows no significant relationship with valence $(F(1,198) = 0.250; p = 0.617)$. Also not significant is the interaction effect of the author and the valence of the online review with attractiveness $(F(1,198) = 3.453, p = 0.065)$. The effect that the writer of a customer review is perceived as more attractive than the writer of a product tester review is not strengthened by the positive valence of the customer review. Thus, hypothesis H3b must be rejected. Table 4 summarizes which hypotheses can be provisionally confirmed and which must be rejected.

***Table 4.** Summary of the hypothesis testing.*

	Hypothesis	Hypothesis testing
H1a	The author of a product tester review is considered more competent than the author of a customer review.	not confirmed
H1b	The effect that the author of a product tester review is rated more competent than the author of a customer review is reinforced by the negative valence of a product tester review.	not confirmed
H2a	The author of a customer review is considered more trustworthy than the author of a product tester review.	confirmed
H2b	The effect that the author of a customer review is rated more trustworthy than the author of a product tester review is reinforced by the positive valence of a customer review.	confirmed
H3a	The author of a customer review is perceived as more attractive than the author of a product tester review.	confirmed
H3b	The effect that the author of a customer review is perceived as more attractive than the author of a product tester review is reinforced by the positive valence of the customer review.	not confirmed

5.4. Discussion

The results of the empirical analysis showed that in all three credibility dimensions – competence, trustworthiness, and attractiveness – customer reviews were able to achieve better values than product tester reviews. An interaction between the author and the moderator variable valence could only be demonstrated for the dimension trustworthiness. Thus, it can be stated that customers as authors of online reviews are rated as more competent, trustworthy, and attractive by recipients compared to product testers. The valence of online reviews has no influence, except for the credibility dimension trustworthiness. These results are consistent with the findings of the study by Forman, Ghose and Wiesenfeld, who found that consumers place more value on the credibility of the author than on the content of the online review [38]. This may be one reason why the valence of online reviews is also of secondary importance in the results of this study.

In the context of deriving hypothesis H1a, it was argued that product testers could be perceived as a kind of expert and thus be attributed a higher level of competence. This assumption could not be confirmed, as the participants rated the competence of the author of the customer review higher. One possible explanation could be that product testers, like other customers, only have a limited amount of information at their disposal [28]. All online reviews are written based on the same information, the same product. Product testers usually do not have higher technical qualifications than customers. Hypothesis H1b, which is based on H1a, also had to be rejected. The valence of the online review in connection with the author does not trigger a change in the recipient's perception of the author's competence. This can be explained by the subordinate importance of the content if a superficial source credibility of the author is given [3].

With regard to the dimension trustworthiness, both hypotheses (H2a and H2b) could be preliminarily confirmed. Authors of customer reviews were rated significantly more trustworthy than authors of product tester reviews. This effect is further strengthened by a positive valence of the online review. Consumers rated the trustworthiness of a product tester as lower if the product tester wrote a positive online review. If, on the other hand, the product tester has written a negative review, the trustworthiness is rated higher. Nevertheless, customers are rated significantly more

trustworthy as authors of online reviews than product testers, regardless of valence. If the consumer additionally notices a positive valence when reading the customer review, the perceived trustworthiness of the author of the customer review increases. This can be explained by the fact that, in comparison to product testers, customers have financed the product themselves and therefore have no obvious reason to write a false positive review.

With regard to the attractiveness dimension, it was assumed in hypothesis H3a that customers as authors of online reviews are attributed a higher attractiveness than product testers. This hypothesis was provisionally confirmed on the basis of the results of the empirical study. In contrast to the other two credibility dimensions, researchers do not agree on whether the attractiveness dimension is one of the core dimensions of source-oriented credibility. However, some authors elaborated that it is very important for assessing source-oriented credibility (5, 14, 23, 24, 25, 29, 50, 51]. For this study, the dimension of attractiveness was deliberately chosen alongside competence and trustworthiness because the product tester program is a new concept at its core. Especially with new programs it is important to check how similar, likeable, or familiar the author appears to the recipient. The fit of the product tester to the product as well as to the target group of the product is crucial for assessing the credibility of the author [49, 52]. In order for a message to be perceived as persuasive and credible, there must be a certain level of agreement between the author of the online review and the recipient [1]. The results of this study show that writers of product tester reviews are perceived as less attractive than writers of customer reviews. Due to the novelty of product tester programs, a higher level of trust can be assumed between customer review authors and consumers than between product testers and consumers. Within the sample, only 45.10 percent of participants were aware of product tester programs prior to the online experiment. Xia and Bechwati emphasize that an online review can only be credible if the situation described is familiar, as people value their familiarity with the old tried and true [53]. Due to the novelty of product tester programs, consumers lack some information to evaluate the credibility of product tester reviews. In the online experiment, only 3.90 percent of the participants reported that they (had) been a product tester themselves. Thus, 96.10 percent of the participants could only guess under which exchange conditions the product tester review was written. Although the attractiveness of customers as authors of online reviews is rated higher than that of product testers, this is not significantly influenced by the positive valence of the online review. This suggests that consumers place more value on the credibility of the author than on the content of the online review [see also 38].

6. Conclusion, Limitations, and Future Research

The focus of the study was the research question of whether a product tester review differs from customer reviews in the three core dimensions of credibility – competence, trustworthiness and attractiveness of the author. The results of the online experiment showed that authors of product tester reviews are perceived differently in terms of their credibility than authors of customer reviews. Product testers are perceived as significantly less credible than customers. With regard to the question posed at the outset as to whether the valence of the online review influences the credibility assessment, the empirical investigation revealed that the valence of an online review only acts as a moderator for the credibility dimension trustworthiness. Only for this dimension a significant interaction with the author of online reviews could be demonstrated. Thus, a positive online review can strengthen the trustworthiness of a customer review author.

The results have shown that labelled product tester reviews have no added value for the credibility of the author. For suppliers who make their products available for the program free of charge, this means that they send a lot of free products to product testers without increasing the credibility of the online reviews. Neither the competence, nor the trustworthiness or attractiveness is rated higher by recipients for product testers than for customers. Instead of using product tester programs, providers or marketplace operators should make more intensive efforts to ensure that paying customers write online reviews. Positive customer reviews would also be ideal. As the empirical study and the study by Sen and Lerman [39] have shown, positive customer reviews can promote the trustworthiness of online review authors. This is important for the success of online reviews as a marketing tool, as building trustworthiness is elementary [1].

Although an attempt was made to make the online experiment as realistic as possible, the empirical analysis is subject to some limitations. Since the data was collected with the help of an online experiment, the closeness to reality is lower than in a field experiment. In addition, there is the problem of self-selection of participants in online experiments. Since participants can decide for themselves whether to participate in the online experiment, the sampling is manipulated in advance. Furthermore, the results are limited by the choice of the product group. The illustrated scenarios were only conducted for the product headphones, which belong to the product group of small electrical appliances. Future research could elucidate whether the product group has an impact on the perception of credibility of the author of online reviews. Furthermore, this study is limited by the three selected dimensions of credibility. As already clarified in the context of the theoretical background, there is still no consensus in the research on credibility about the different credibility dimensions. The results of this study refer explicitly to the dimensions of competence, trustworthiness and attractiveness. Even though authors of product tester reviews were rated lower than authors of customer reviews in these three credibility dimensions, this cannot be easily transferred to other credibility dimensions, such as dynamism, objectivity, and comprehensibility. In

order to obtain valid results for credibility research, more studies should be conducted to structure and delineate the dimensions. With regard to online reviews, the elaboration and delineation of a credibility model would be an important element for further research.
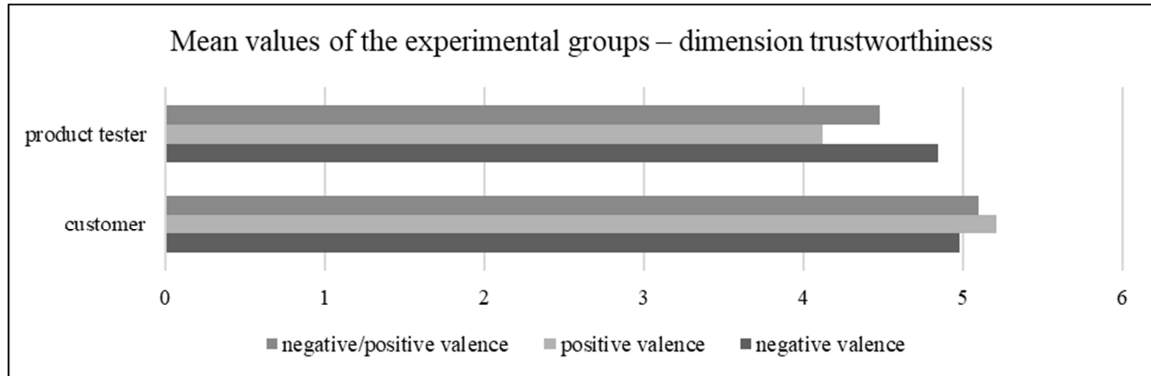
Appendix

Figure 3. Mean values of the experimental groups with regard to the dimension competence.
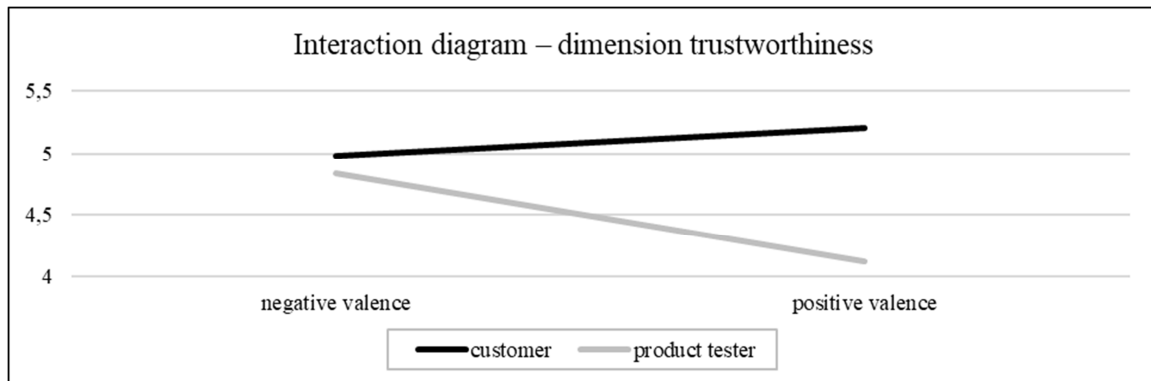

Figure 4. Interaction diagram of the variables author and valence for the dimension trustworthiness.
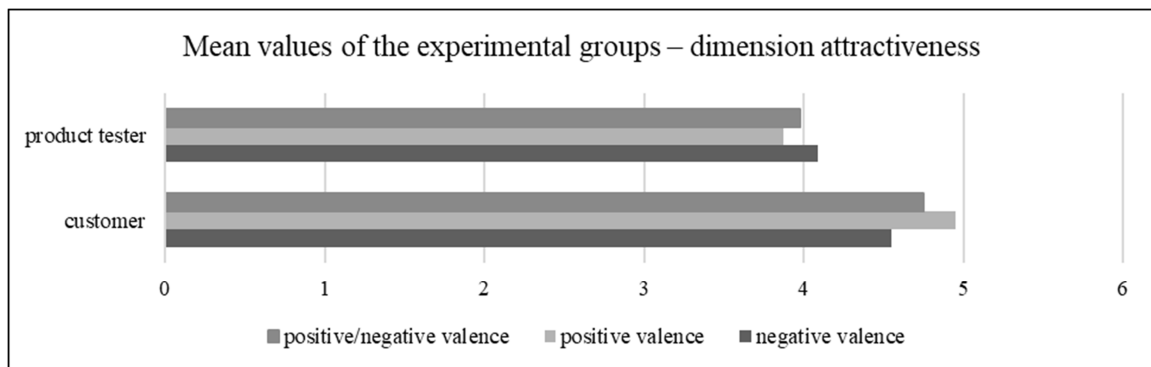

Figure 5. Mean values of the experimental groups with regard to the attractiveness dimension.

References

[1] Steffes, E. M. & Burgee, L. E. (2009). Social ties and online word of mouth. *Internet Research* 19 (1): 42–59.

[2] Goldberg, M. E. & Hartwick, J. (1990). The effects of advertiser reputation and extremity of advertising claim on advertising effectiveness. *Journal of Consumer Research* 17 (2): 172–179.

[3] Wathen, C. N. & Burkell, J. (2002). Believe it or not: Factors influencing credibility on the web. *Journal of the American Society for Information Science & Technology* 53 (2): 134–144.

[4] Filieri, R., Mcleay, F., Tsui, B. & Lin, Z. (2018). Consumer perceptions of information helpfulness and determinants of purchase intention in online consumer reviews of services. *Information and Management* 55 (8): 956–970.

[5] Smith, D., Menon, S. & Sivakumar, K. (2005). Online peer and editorial recommendations, trust, and choice in virtual markets. *Journal of Interactive Marketing* 19 (3): 15–37.

[6]   Mudambi, S. M. & Schuff, D. (2010). What makes a helpful online review? A study of customer reviews on Amazon.com. *Management Information Systems Quarterly* 34 (1): 185–200.

[7]   Kim, R. Y. (2020). When does online review matter to consumers? The effect of product quality information cues. *Electronic Commerce Research* 21: 1011–1030.

[8]   Murugan, S. & Nagarajan, P. S. (2017). Credibility perceptions of user generated content. *Journal of Business Management & Social Sciences Research* 6 (11): 118–121.

[9]   Edwards, S. (2006). From the guest editor: Special issue on electronic Word of Mouth and its relationship with advertising, marketing, and communication. *Journal of Interactive Advertising* 6 (2): 1–2.

[10] Chae, I, Stephen, A. T., Bart, Y. & Yao, D. (2017). Spillover Effects in Seeded Word-of-Mouth Marketing Campaigns. *Marketing Science 36* (1): 89–104.

[11] Driehaus, C. (2020). Produktbewertungen auf Amazon: Relevanz und Handlungsfelder für Unternehmen. In Stummeyer, C. & Köber, B. (Eds.), *Amazon für Entscheider*: 235–258.

[12] Amazon. (2022). What is Amazon Vine? [online] https://www.amazon.co.uk/vine/about (accessed 16 July 2022).

[13] Cheung, M. Y., Luo, C., Sia, C. L. & Chen, H. (2007). How do people evaluate electronic word-of-mouth? Informational and normative based determinants of perceived credibility of online consumer recommendations in china. *Proceedings of the Pacific Asia Conference on Information Systems (PACIS)*: 69–81.

[14] Wilson, E. J. & Sherrell, D. L. (1993). Source effects in communication and persuasion research: A meta-analysis of effect size. *Journal of the Academy of Marketing Science* 21 (2): 101–112.

[15] Eisend, M. (2006). Source credibility in marketing communication – A meta-analysis. *Marketing – Journal of Research and Management* 2 (1): 43–60.

[16] Twyman, N. W., Elkins, A. C., Burgoon, J. K. & Nunamaker, J F. (2014). A Rigidity Detection System for Automated Credibility Assessment. *Journal of Management Information Systems* 31 (1): 173–202.

[17] Tormala, Z. L. & Petty, R. E. (2008). Source Credibility and Attitude Certainty: A Metacognitive Analysis of Resistance to Persuasion. *Journal of Consumer Psychology* 14 (4): 427–442.

[18] Hovland, C. I. & Weiss, W. (1951). The influence of source credibility on communication effectiveness. *The Public Opinion Quarterly* 15 (4): 635–650.

[19] Ohanian, R. (1990). Construction and validation of a scale to measure celebrity endorsers' perceived expertise, trustworthiness, and attractiveness. *Journal of Advertising* 19 (3): 39–52.

[20] Tseng, S. & Fogg, B. J. (1999). Credibility and computing technology – Users want to trust, and generally do. But that trust is undermined, often forever, when the system delivers erroneous information. *Communication of the ACM* 42 (5): 39–44.

[21] Wirth, W. (1999). Methodologische und konzeptionelle Aspekte der Glaubwürdigkeitsforschung. In Rössler, P. & Wirth, W. (Eds.), *Glaubwürdigkeit im Internet*: 47–66.

[22] Singletary, M. W. (1976). Components of credibility of a favorable news source. *Journalism Quarterly* 53 (2): 316–319.

[23] Baker, M. J. & Churchill, G. A. (1977). The impact of physically attractive models on advertising evaluations. *Journal of Marketing Research* 14 (4): 538–555.

[24] Canning, L. & West, D. (2015). The celebrity spokesorganization. In Deeter-Schmelz, D. R. (Ed.), *Proceedings of the 2010 Academy of Marketing Science (AMS) Annual Conference*: 313.

[25] Ohanian, R. (1991). The impact of celebrity spokespersons perceived image on consumers' intention to purchase. *Journal of Advertising Research* 31 (1): 46–54.

[26] O'Hara, B. S., Netmeyer, R. G. & Burton, S. (1991). An examination of the relative effect of source expertise, truthworthiness, and likability. *Social Behavior and Personality* 19 (4): 305–314.

[27] Kim, K., Cheong, Y. & Kim, H. (2017). User-generated product reviews on the internet: the drivers and outcomes of the perceived usefulness of product reviews. *International Journal of Advertising* 36 (2): 227–245.

[28] Huang, J.-H. & Chen, Y.-F. (2006). Herding in online product choice. *Psychology & Marketing* 23 (5): 413–428.

[29] DeSarbo, W. S. & Harshman, R. A. (1985). Celebrity-brand congruence analysis. *Current Issues & Research in Advertising* 8 (2): 17–52.

[30] McGuire, W. J. (1985). Attitudes and Attitude Change. In Gardner, L. & Aronson, E. (Eds.), *Handbook of Social Psychology*: 233–246.

[31] Lafferty, B. A. & Goldsmith, R. E. (1999). Corporate credibility's role in consumers' attitudes and purchase intentions when a high versus a low credibility endorser is used in the ad. *Journal of Business Research* 44 (2): 109–116.

[32] Lascu, D.-N., Bearden, W. O. & Rose, R. L. (1995). Norm extremity and interpersonal influences on consumer conformity. *Journal of Business Research* 32 (3): 201–212.

[33] Mackiewicz, J., Yeats, D. & Thornton, T. (2016). The impact of review environment on review credibility. *IEEE Transactions on Professional Communication* 59 (2): 71–88.

[34] Fan, Y.-W. & Miao, Y.-F. (2012). Effect of electronic word-of-mouth on consumer purchase intention: the perspective of gender differences. *International Journal of Electronic Business Management* 10 (3): 175–181.

[35] Friedman, H. H., Santeramo, M. J. & Traina, A. (1978). Correlates of trustworthiness for celebrities. *Journal of Academy of Marketing Science* 6 (4): 291–299.

[36] Mackiewicz, J. (2007). Reviewer bias and credibility in online reviews. *Proceedings of the 2007 Association for Business Communication Annual Convention*: 1–8.

[37] Flanagin, A. J., Metzger, M. J., Pure, R., Markov, A. & Hartsell, E. (2014). Mitigating risk in ecommerce transactions: perceptions of information credibility and the role of user-generated ratings in product quality and purchase intention. *Electronic Commerce Research* 14 (1): 1–23.

[38] Forman, C., Ghose, A. & Wiesenfeld, B. (2008). Examining the relationship between reviews and sales: The role of reviewer identity disclosure in electronic markets. *Information Systems Research* 19 (3): 291–313.

[39] Sen, S. & Lerman, D. (2007). Why are you telling me this? An examination into negative consumer reviews on the web. *Journal of Interactive Marketing* 21 (4): 76–94.

[40] Reichelt, J., Sievert, J. & Jacob, F. (2014). How credibility affects eWOM reading: The influences of expertise, trustworthiness, and similarity on utilitarian and social functions. *Journal of Marketing Communications* 20 (1/2): 65–81.

[41] Lopes, A. I., Dens, N. & De Pelsmacker, P. (2022). Valence and attribute repetition in negative sets of online reviews: (When) can positive reviews overcome negative ones? *Journal of Electronic Commerce Research* 23 (1): 1–12.

[42] Bonabeau, E. (2004). The perils of the imitation age. *Harvard Business Review* 82 (6): 45–54.

[43] Ba, S. & Pavlou, P. A. (2002). Evidence of the effect of trust building technology in electronic markets: Price Premiums and Buyer Behavior. *Management Information Systems Quarterly* 26 (3): 243–268.

[44] Hennig-Thurau, F. T., Gwinner, K. P., Walsh, G. & Gremler, D. D. (2004). Electronic word-of-mouth via consumer-opinion platforms: What motivates consumers to articulate themselves on the internet? *Journal of Interactive Marketing* 18 (1): 38–52.

[45] Feick, L. & Higie, R. A. (1992). The effects of preference heterogeneity and source characteristics on ad processing and judgements about endorsers. *Journal of Advertising* 21 (2): 9–24.

[46] Homans, G. C. (1958). Social Behavior as Exchange. *American Journal of Sociology* 63 (6): 597–606.

[47] Banerjee, S., Bhattacharyya, S. & Bose, I., 1992. Whose online reviews to trust? Understanding reviewer trustworthiness and its impact on business. *Decision Support Systems* 96 (2): 17–26.

[48] Festinger, L. (1962). Cognitive dissonance. *Scientific American* 207 (4): 93–107.

[49] Dorst, F., Phieler, U., Haenlein, M. & Libai, B. (2019). Seeding as part of the marketing mix: word-of-mouth program interactions for fast-moving consumer goods. *Journal of Marketing* 83 (2): 62–81.

[50] Bearden, W. O., Netemeyer R. G. & Teel, J. E. (1989). Measurement of consumer susceptibility to interpersonal influence. *Journal of Consumer Research* 15 (4): 473–481.

[51] Chaiken, S. (1979). Communicator physical attractiveness and persuasion. *Journal of Personality and Social Psychology* 37: 1387–1397.

[52] Schlereth, C., Barrot, C., Skiera, B. & Takac, C. (2013). Optimal product-sampling strategies in social networks: How many and whom to target? *International Journal of Electronic Commerce* 18 (1): 45–72.

[53] Xia, L. & Bechwati, N. N. (2008). Word of mouse: The role of cognitive personalization in online consumer reviews. *Journal of Interactive Advertising* 9 (1): 108–128.

[54] Brosius, F. (2013). *SPSS 21*. mitp-Verlag. Germany.