Association for Information Systems

AIS Electronic Library (AISeL)

Wirtschaftsinformatik 2023 Proceedings

Wirtschaftsinformatik

10-9-2023

Can a Button Change your Purchase? – The Effect of the Accessibility of Consumer Reviews on Consumers' Online Purchase Decisions

Andrea Wrabel

Ulm University, Germany, andrea.wrabel@uni-ulm.de

Alexander Kupfer
University of Innsbruck, Austria, alexander.kupfer@uibk.ac.at

Steffen Zimmermann *Ulm University, Germany*, steffen.zimmermann@uni-ulm.de

Follow this and additional works at: https://aisel.aisnet.org/wi2023

Recommended Citation

Wrabel, Andrea; Kupfer, Alexander; and Zimmermann, Steffen, "Can a Button Change your Purchase? – The Effect of the Accessibility of Consumer Reviews on Consumers' Online Purchase Decisions" (2023). Wirtschaftsinformatik 2023 Proceedings. 62.

https://aisel.aisnet.org/wi2023/62

This material is brought to you by the Wirtschaftsinformatik at AIS Electronic Library (AISeL). It has been accepted for inclusion in Wirtschaftsinformatik 2023 Proceedings by an authorized administrator of AIS Electronic Library (AISeL). For more information, please contact elibrary@aisnet.org.

Can a Button Change your Purchase? – The Effect of the Accessibility of Consumer Reviews on Consumers' Online Purchase Decisions

Research Paper

Andrea Wrabel¹, Alexander Kupfer², and Steffen Zimmermann¹

¹ Ulm University, Institute of Business Analytics, Ulm, Germany {andrea.wrabel, steffen.zimmermann}@uni-ulm.de
 ² University of Innsbruck, Department of Information Systems, Production and Logistics Management, and Research Area Digital Science Center (DiSC), Innsbruck, Austria alexander.kupfer@uibk.ac.at

Abstract. This study investigates whether the accessibility of consumer reviews matters for consumers' purchase decisions. Current research does not provide guidance on how to access consumer reviews to improve consumers' decision-making. Moreover, there is no consensus on the actual implementation of the access (i.e., immediate access or explicit access by clicking) to consumer reviews on existing online shopping websites. Building on the anchoring-and-adjustment model of belief updating and using an experimental approach, we find that requiring participants to explicitly access consumer reviews (by clicking on a button) significantly improves their purchase decisions: When choosing between products of different quality, they better align their perceived product values with the actual product quality. As a result, they are more likely to purchase the high-quality product. These findings provide important insights for e-commerce retailers and policy makers, as they offer guidance on how consumer reviews should be accessible to support consumers' decision-making.

Keywords: Consumer Reviews, Review Accessibility, Online Purchase Decision.

1 Introduction

When making online purchase decisions, consumers are required to actively inform themselves about the quality of a product, as they typically have no prior experience with it. To learn about a product and its quality, however, consumers do not have to rely solely on information provided by the producer. Instead, they can use independent, more reliable, peer-generated information in the form of consumer reviews (Hajli et al., 2014).

Consumer reviews are part of most online shopping websites, but the design of the corresponding online review systems can vary. Such variations are known to influence consumers' perception of consumer reviews and consequently their decision-making

18th International Conference on Wirtschaftsinformatik, September 2023, Paderborn, Germany process when shopping online (Gutt et al., 2019). On online shopping websites, there seems to be a consensus on the immediate display – and thus accessibility – of aggregated review information (e.g., average rating) while the display and accessibility of consumer reviews themselves vary considerably. On Amazon, consumer reviews are displayed on the same page as the product information and are therefore immediately accessible. Other online shopping websites such as BestBuy or Zalando require customers to click on a link or button to access and see consumer reviews. Moreover, research to date also does not provide guidance on how to implement the access to consumer reviews on websites. To our knowledge, there is no study that investigates how the accessibility of consumer reviews influences consumers' decision-making process. We therefore state the following research question to address this gap:

RQ: How does the accessibility of consumer reviews on online shopping websites affect consumers' purchase decisions?

We address this question by conducting a between-subject experiment in which consumers choose between two products of different quality. The quality of the products is described in consumer reviews. Thus, participants that put more weight to consumer reviews make better purchase decisions. To investigate the effect of the accessibility of consumer reviews, we apply the following treatment variation: consumer reviews are either immediately accessible together with product information or only accessible by explicitly clicking on a button. Based on the analysis of our experimental study, we find that the accessibility of consumer reviews significantly affects consumers' purchase decisions via perceived product value as mediating variable. In particular, we find that our participants' perceived product value is better aligned with actual product quality when consumer reviews are only accessible by explicitly clicking on a button. As a result, consumers are more likely to purchase the high-quality product instead of the low-quality product.

Our study contributes to research on the design of online review systems. In contrast to existing studies that mostly focus on the presentation within the set of consumer reviews, we investigate the effect of the accessibility of (the entire set of) consumer reviews. Thus, we contribute to the understanding of a design aspect that has merely been addressed although it substantially varies across online shopping websites. Our findings provide important insights for e-commerce retailers and policy makers alike regarding consumers' evaluation of product quality (using consumer reviews) during their purchase decision.

2 Related Literature

Over the past years, consumer reviews have become one of the most important features on online shopping websites and now represent an important determinant for online purchase decisions (see e.g., Floyd et al., 2014; Babić Rosario et al., 2016, 2020; Gutt et al., 2019 for comprehensive overviews). In addition, online shopping websites often prominently display aggregated review information (i.e., average rating, rating distribution, volume). Besides the well-studied effects of aggregated review information (e.g., Chevalier and Mayzlin, 2006; Floyd et al., 2014), several studies also document

that the consumer reviews themselves and their respective textual comments influence consumers' purchase decisions (Hu et al., 2014; Lei et al., 2022; Liu et al., 2019; van Helversen et al., 2018; Ziegele and Weber, 2015). By observing that individual consumer reviews play a vital role for consumers, the latter studies actually "challenge the commonly accepted assumption of average ratings being the primary driver of consumers' purchase decisions" (Lei et al., 2022, p. 2393).

Furthermore, consumers are affected by the way consumer reviews are presented (Gutt et al., 2019). However, we identify that most studies investigate the presentation within the set of consumer reviews. They document that the presentation and composition of subsets (e.g., Jabr and Rahman, 2022; Kupfer et al., 2020) or the ordering of consumer reviews (e.g., Alzate et al., 2021; Huang et al., 2014; Kaushik et al., 2018; Liu et al., 2019; Sparks and Browning, 2011; Zhou and Guo, 2017) affect consumer behavior in terms of purchase intention and helpfulness votes. In contrast to the presentation within the set of consumer reviews, the way the entire set of consumer reviews is being accessed is, however, mostly unstudied. We are – to the best of our knowledge – only aware of a study by Camilleri (2020) who investigates whether it matters at what time aggregated review information is accessed. The author observes that consumers rely more on aggregated review information when it is presented after general product information.

Although Camilleri's (2020) study comes close to the understudied question on the effect of the accessibility of review information on a website, the findings cannot be transferred to our context: First, review information simply appears after other product information in Camilleri (2020). In our study, we examine the more common practice that review information is only accessible by explicitly clicking on a button. Second, we focus on the consumer reviews themselves rather than aggregated review information. As outlined above, research highlights the importance of consumer reviews due to their additional information content. We address this research gap by using an experimental setting that requires participants to examine consumer reviews.

3 Theoretical Background and Hypotheses Development

We build on the anchoring-and-adjustment model of belief updating by Hogarth and Einhorn (1992) to develop our hypotheses on the effect of the accessibility of consumer reviews on consumers' purchase decisions. This model is based on the idea that individuals first form an initial belief (anchor) which is subsequently adjusted due to the influence of succeeding pieces of information. Throughout the decision-making process, individuals may use one of the following strategies to process succeeding pieces of information and adjust their beliefs: a step-by-step or end-of-sequence strategy. When applying a step-by-step strategy, individuals adjust their beliefs after processing each piece of information. This strategy is induced whenever individuals have to express their belief after each piece of information and typically leads to recency effects (i.e., individuals put more emphasis on more recently processed information). The end-of-sequence strategy, on the other hand, implies that individuals only adjust their beliefs after processing all information which typically results in

primacy effects (i.e., individuals put more emphasis on earlier information). Finally, when individuals have to express their belief only once after receiving all information, their prevalent strategy depends on the complexity of information and tasks.

Translated to the context of making online purchase decisions, this means that consumers can as well apply different strategies to process succeeding information and adjust their beliefs about products. Further, we expect different strategies to be prevalent depending on the accessibility of consumer reviews: If consumer reviews are only accessible by clicking on a button and therefore appear in a second step, we expect that consumers implicitly evaluate the first received information (for themselves) to decide if they indeed want to access consumer reviews. Thus, a step-by-step strategy is more likely induced (even if they are not explicitly asked to express their beliefs) – implying the sole presence of recency effects. If consumer reviews are immediately accessible together with further information (e.g., product features), we expect that consumers apply either a step-by-step strategy or end-of-sequence strategy (implying that either primacy or recency effects are present). Relatedly, Camilleri (2020) found consumers to rely more on aggregated review information when presented after general product information (i.e., stronger recency effects) compared to when presented together. This supports our expectation of a stronger recency effect when consumers are required to explicitly access consumer reviews compared to when they immediately access them together with other information.

Stronger recency effects imply that consumers put more emphasis on the information seen most recently (i.e., consumer reviews). As consumer reviews help to reduce information asymmetries (Manes and Tchetchik, 2018; Park and Lee, 2009), consumers that put more emphasis on them can better learn about the quality of a product. While positive comments in consumer reviews typically indicate that a product is of high quality and lead consumers to more favorably evaluate a product, negative comments indicate a low quality leading to a less favorable evaluation (e.g., Hu et al., 2014; Huang and Chen, 2006; Lei et al., 2022; Liu et al., 2019; Ziegele and Weber, 2015). Hence, consumers that positively (negatively) evaluate a product consequently perceive the value of a product as higher (lower). In other words, consumers putting more emphasis on consumer reviews (due to explicitly accessing them) are expected to better align their perceived product value with the actual product quality. Accordingly, we state our first hypothesis as follows:

H1: Compared to immediately accessing consumer reviews, requiring consumers to explicitly access consumer reviews increases (decreases) the perceived product value of a high-quality (low-quality) product.

If consumers perceive a product to be of high (low) value, they are more likely to purchase (discard) the product. Thus, if consumers' perceived product value is better aligned with the actual product quality, they are expected to rather purchase a high-quality than a low-quality product. Thus, consumers exhibit a high decision accuracy by choosing a high-quality product. As a direct consequence of H1, we expect that

This observation holds for basic information and simple tasks (Hogarth and Einhorn, 1992). We expect this to be the case for typical online shopping situations, as nowadays consumers are familiar with purchasing a product online and also with consumer reviews.

consumers that put more emphasis on consumer reviews when explicitly accessing them exhibit a higher decision accuracy. Accordingly, we hypothesize:

H2: Compared to immediately accessing consumer reviews, requiring consumers to explicitly access consumer reviews indirectly increases decision accuracy via perceived product value.

Figure 1 shows the corresponding research model and summarizes our hypotheses: We expect the accessibility of consumer reviews to directly affect perceived product value (i.e., H1) which serves as a mediator for consumers' decision accuracy (i.e., H2).



Figure 1. Research Model.

4 Research Methodology and Experimental Design

To test our hypotheses, we conduct a scenario-based online experiment with a betweensubject design which we describe in the following section.

4.1 Scenario Description

During the experiment, the participants' main task is to purchase new noise-cancelling headphones that help them to concentrate while working from home. For this purpose, we implemented a scenario in which participants are forwarded to a fictive online shopping website offering two different headphones.

At first glance (i.e., without reading consumer reviews), both headphones appear to be similar. In particular, they have the same price and look, offer the same features, and exhibit the same aggregated review information (i.e., average rating, rating distribution, volume). The textual comments of the consumer reviews indicate, however, that one of the headphones is of higher quality than the other: The consumer reviews for the low-quality headphones highlight issues with the battery, microphone, and multi-device connectivity while these features work properly for the high-quality headphones. As the aggregated review information, however, are the same for both headphones, the quality differences can only be discovered by reading the consumer reviews. Overall, we show nine consumer reviews (six 5-star reviews, two 4-star reviews and one 3-star review) for each of the two headphones. While five consumer reviews are equivalent in their textual content and sentiment for both headphones, four of them indicate quality differences. The wording of the textual reviews was inspired by real consumer reviews

on headphones from Amazon. To avoid a potential bias due to the order of the consumer reviews, we randomize their order.²

To proceed with the experiment, participants are asked to purchase one of the offered headphones by clicking on the respective "Purchase" button. A pop-up window was displayed when participants clicked on the "Purchase" button that asks them to confirm their decision. This helps us to ensure that participants do not accidently click on the "Purchase" button. To avoid a potential order bias due to product placement, the order of the two headphones (left/right) shown on the online shopping website is randomized.

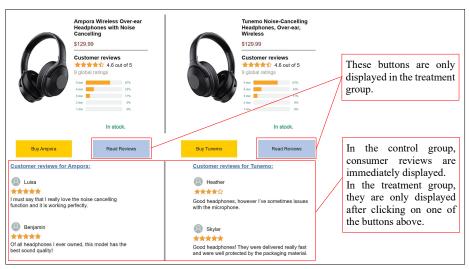


Figure 2. Excerpt of the Online Shopping Website.

4.2 Treatment Variation

To examine the effect of the accessibility of consumer reviews, we create two experimental groups: In the first group, consumer reviews are immediately accessible together with product information (control group). In the second group (treatment group), only product information is displayed when participants are forwarded to the online shopping website. Consumer reviews are only accessible by explicitly clicking on the respective "Read Reviews" button. Figure 2 shows an excerpt from the online shopping website. Note that after clicking on the "Read Reviews" button, participants in the treatment group have the same website view as participants in the control group. Participants in the treatment group, however, also have the possibility to directly purchase without clicking on the "Read Reviews" button and therefore without accessing and seeing consumer reviews.

² As both products obtain the same aggregated review information, we also need to include low-rated reviews for the high-quality headphones. These, however, focus on rather subjective side aspects which are not linked to product quality itself (i.e., color of hard case, amount of packaging material). For a detailed description of the consumer reviews, we refer to the supplementary material available on shorturl.at/kEY56.

4.3 Variables

As outlined in Section 3, we expect the accessibility of consumer reviews to affect consumers' purchase decisions. By letting participants choose between two headphones of different quality, we can directly measure decision accuracy which represents our dependent variable. We define decision accuracy (*Accuracy*) as a binary variable being one (zero) if participants choose the high-quality (low-quality) headphones.

After choosing between the headphones, we ask participants to state their willingness-to-pay for each of the two headphones. As the absolute willingness-to-pay might be participant-specific, we calculate the relative difference between the willingness-to-pay for both headphones as follows: $\Delta_{WTP} = \frac{WTP_{HQ} - WTP_{LQ}}{WTP_{LQ}}, \text{ where } WTP_{HQ} \ (WTP_{LQ}) \text{ represents the willingness-to-pay for the high-quality (low-quality) headphones. A higher <math>\Delta_{WTP}$ implies that the values of both headphones are perceived as more different.

At the end of the experiment, we ask participants about their demographics (i.e., age, gender, education, and income) as well as their familiarity with the topic in the scenario. In particular, we ask them whether they own, plan to buy or are not interested in noise-cancelling headphones, how often they shop online and how often they read consumer reviews when shopping online.

4.4 Implementation, Participants and Payment Structure

For implementing our experiment, we used the SoSci Survey platform. Before launching the experiment, we performed pretests with students and participants recruited via Amazon Mechanical Turk to improve the comprehensibility of our study as well as to minimize potential issues and ambiguities (Reynolds and Diamantopoulos, 1998).

Participants for the experiment were recruited from Amazon Mechanical Turk (US-based, no demographic filters, minimum approval rate of 90%) and, as outlined above, randomly assigned to one of the two experimental groups. To ensure that participants are attentive during the experiment, we implemented two attention check questions after participants stated their willingness-to-pay for both headphones. In particular, we asked participants based on true/false answer options about the price of the headphones and whether the headphones have a noise-cancelling feature. Note that these questions can be answered without reading the consumer reviews as otherwise, our final sample would suffer from self-selection.

All participants receive a base payment of \$0.10 for completing the experiment. Participants who correctly answered the attention check questions, receive additional \$0.50. To ensure that participants have an incentive to make meaningful decisions during the experiment, only participants who choose to purchase the high-quality headphones receive a bonus payment of \$0.50. On the instruction page of the experiment, we informed participants that their final payment ranges from \$0.10 up to \$1.10 and that it depends on their decisions during the experiment. Assuming that participants pay full attention to the experiment (i.e., they buy the high-quality headphones), their compensation would be equivalent to \$8.25 per hour when

calculating with our expected time of 8 minutes to finish the experiment. On average, fully attentive participants needed about 6.30 minutes to complete the experiment and since they bought the high-quality headphones received \$1.10 resulting in an average hourly wage of \$10.48.

5 Analysis and Results

In total, we recruited 767 participants for our experiment. 596 of them correctly answered the attention check questions. We checked the data for outliers and dropped 18 participants in total that made a very quick purchase decision (i.e., 7 seconds or less) or entered abnormal high or nonnumerical values for their willingness-to-pay. Our final dataset hence comprises 578 participants with 335 (243) participants belonging to the treatment (control) group. To check whether sample randomization was appropriate, we tested the control variables for differences between treatment and control group using a nonparametric Wilcoxon rank-sum test. None of the control variables except for *Education* did significantly differ between the groups. Thus, we examined *Education* by applying a Chi-square test to check for differences in the answer distributions between the groups and did not find a significant difference. Hence, we conclude that our sample randomization is appropriate.³

5.1 Main Results

To get a first impression of the effects of the accessibility of consumer reviews on our main variables Δ_{WTP} and Accuracy, we present the summary statistics in Panel A of Table 1. For the treatment group, in which participants are required to explicitly access consumer reviews, we observe a larger difference in the perceived values of both headphones. In more detail, participants of the treatment group perceive the value of the high-quality headphones as approx. 24% higher compared to the low-quality headphones while participants of the control group only perceive it as 17% higher. We also observe a higher decision accuracy for the treatment group (85.7%) compared to the control group (82.7%).

To examine the statistical significance of the effect of the accessibility of consumer reviews on the perceived product value (i.e., H1), we estimate an ordinary least squares (OLS) model using heteroskedasticity-consistent robust standard errors with Δ_{WTP} as dependent variable and a treatment dummy (Treat) as independent variable. Treat is defined as a binary variable being one (zero) if participants are assigned to the treatment (control) group. The result of this exercise is shown in Panel B of Table 1. The coefficient represents the difference in Δ_{WTP} between the experimental groups and is statistically significant (p < 0.05). For robustness, we re-estimated the model including con-

For a more detailed presentation of these results, we refer to the complete summary statistics included in the supplementary material available on shorturl.at/kEY56.

trol variables which confirms our observation (not tabulated). Thus, requiring participants to explicitly access consumer reviews indeed increases the difference in the perceived product values. Hence, we find support for H1.

To test whether the accessibility of consumer reviews affects decision accuracy via perceived product value (i.e., H2), we apply a mediation analysis using the PROCESS macro (Model 4) for R (Hayes, 2022). As suggested by Hayes (2022), we assess the statistical significance of indirect effects via a bootstrapping procedure. We base standard errors and 95% confidence intervals for the indirect effect on 5,000 biascorrected bootstrapping resamples. Results for the direct (first row) and indirect effect (second row) of the mediation analysis are shown in Panel C of Table 1. First, there is – as expected – no significant direct effect (i.e., $Treat \rightarrow Accuracy$). Second, we observe a positive and statistically significant indirect effect (i.e., $Treat \rightarrow \Delta_{WTP} \rightarrow Accuracy$). Hence, we observe a full mediation of the effect of the accessibility of consumer reviews on decision accuracy. For robustness, we re-estimated the mediation analysis including control variables and the indirect effect remains significant for 90% confidence intervals (not tabulated). Therefore, requiring participants to explicitly access consumer reviews results in a higher decision accuracy. Hence, we can confirm H2 as well.

Table 1. Main Results.

Panel A.	Summar	y Statistic	es							
	Treatment Group (n=335)				Control Group (n=243)				Diff.	
	Mean	SD	Min	Max	Mean	SD	Min	Max	in Me	in Means
Δ_{WTP}	23.9%	40.4%	-50%	288.9%	17.4%	28.8%	-34.6%	180.0%	6.59	% [*]
Accuracy	85.7%	35.1%	0	1	82.7%	37.9%	0	1	3.0	%
$Treat \rightarrow \Delta$	Λ_{WTP}				Effect 0.065**	SE 0.029				
Panel C.	Effect or	Decision	n Accura	асу						
					Effect	SE	LL	CI	ULCI	
$Treat \rightarrow Accuracy$					0.045	0.269	-0.4	183	0.572	
$Treat \rightarrow \Delta_{WTP} \rightarrow Accuracy$					0.840	0.435	0.1	08	1.820	

Notes: Statistical significance is based on a Wilcoxon rank-sum test (Δ_{WTP}) and Chi-square test (Accuracy) in Panel A. Panel B shows the results of an ordinary least squares regression with heteroskedasticity-consistent robust standard errors (SE). For Panel A and Panel B, *** denotes p < 0.01, ** denotes p < 0.05 and * denotes p < 0.10, respectively. Panel C shows the results of a mediation analysis with 95% confidence intervals. Confidence intervals (LLCI/ULCI = Lower/Upper Limit of Confidence Interval) of indirect effects in Panel C are based on 5,000 bootstrapping resamples and effects are presented in log-odds metrics because of the binary dependent variable (Accuracy). In Panel C, significant effects (p < 0.05) are indicated in bold.

5.2 Additional Insights

The findings in the previous section supports both hypotheses suggesting that requiring consumers to explicitly access consumer reviews improves purchase decisions. However, our experimental design can result in the fact that some of our participants do not explicitly access consumer reviews and therefore not see consumer reviews at all. We therefore provide additional insights on this aspect.

First, 58 participants (approx. 17%) of the treatment group did not access and therefore not even see consumer reviews, although they had an incentive to do so due to the incentive-compatible payment structure of our experiment. Using participants' demographics, we can examine the determinants of whether a participant explicitly accesses consumer reviews or not.⁴ For this purpose, we run a logit regression with *Accessed* as dependent variable, being one if participants explicitly access consumer reviews and zero otherwise, and participants' characteristics (i.e., our control variables) as independent variables. We observe that participants who infrequently purchase online (p < 0.1) or infrequently read reviews (p < 0.01) are most likely to not explicitly access consumer reviews. All remaining participant characteristics (i.e., age, gender, education, income, headphone usage) do not affect the likelihood to explicitly access consumer reviews.

Second, these 58 participants that did not access and therefore not see consumer reviews, could only randomly choose between the two headphones. In other words, they are not able to correctly evaluate product quality. This is actually the case and we find the average Δ_{WTP} of those participants to not be significantly different from zero (p > 0.1) and the *Accuracy* to not be significantly different from 50% (p > 0.1).

Third, when excluding those 58 participants, the positive effect of explicitly accessing the consumer reviews (treatment group) compared to immediately accessing them (control group) is – by definition – substantially stronger. In fact, we observe higher mean values for the treatment group ($\Delta_{WTP} = 28.0\%$, *Accuracy* = 91.3%) compared to the main results. This also has consequences for the statistical tests: For re-estimating the OLS model from Section 5.1 with the reduced sample, the coefficient increases considerable ($\beta = 0.106$, p < 0.01). Similarly, the mediation analysis also indicates a substantially larger treatment effect being significant for 99% confidence intervals. Thus, we can conclude that the positive impact of those participants that accessed consumer reviews substantially outweighs the effects of the participants that did not access them.⁵

For this analysis, only participants of the treatment group are considered, as the participants of the control group did not have to explicitly access consumer reviews.

Note that for this comparison, individuals that are likely to ignore reviews are already excluded in the treatment group (by not clicking on the button) but not in the control group. Hence, this comparison might disadvantage the control group as it could still include participants that do not read consumer reviews although they are immediately accessible. To approximate this potential self-selection for the entire sample, we generally exclude those participants that are likely to not click on the button (i.e., those who infrequently purchase online or infrequently read reviews) and re-run the analyses. With the reduced sample, our findings remain unchanged.

6 Discussion and Conclusion

Our study emphasizes that the accessibility of consumer reviews matters for consumers' purchase decisions. When consumer reviews are only accessible by explicitly clicking on a button, participants' perceived product value is better aligned with the actual product quality compared to the control group where consumer reviews are immediately accessible (i.e., H1). This, in turn, increases the likelihood to purchase the high-quality product rather than the low-quality product (i.e., H2). In other words, it positively impacts decision accuracy via perceived product value as a mediating variable. Importantly, this conclusion is based on the entire sample of the treatment group which also includes participants that did not access consumer reviews. Nonetheless, the positive effect of those participants that decided to explicitly access the consumer reviews outweighs the effect of those participants that did not access consumer reviews and that made, by definition, the worst decisions. To sum up, even though both experimental groups received the same overall information and the payment structure for participants was incentive-compatible, requiring them to explicitly access consumer reviews improves their purchase decisions.

6.1 Theoretical Contribution

This study adds to the understanding of how the design of online review systems affects consumer's purchase decisions. While many existing studies focus on the presentation within the set of consumer reviews, we are the first – to the best of our knowledge – to provide evidence on the accessibility of (the entire set of) consumer reviews. Guided by the anchoring-and-adjustment model of belief updating by Hogarth and Einhorn (1992), we observe consumers to put more emphasis on consumer reviews, if they are only accessible by clicking on a button indicating a (stronger) recency effect compared to immediately accessible consumer reviews. This may be due to a more likely induced *step-by-step strategy* of information processing and belief updating. In this context, we extend the findings by Camilleri (2020) as he neither investigated consumer reviews themselves nor that they are only accessible by explicitly clicking on a button. Hence, we contribute by providing additional evidence that the anchoring-and-adjustment model of belief updating is also applicable for the accessibility of consumer reviews.

6.2 Limitations and Future Research

Overall, our study has certain limitations which however might serve as starting points for future research. First, we provided study participants with an artificial online shopping situation. Even though we designed an incentive-compatible payment structure implying that participants' decisions had real monetary consequences for them, decisions in a real online shopping situation might be different. This might particularly be true for very expensive products or services as they are related to a substantial financial loss in case that the purchased product is of low quality. While A/B-testing might be a potential solution to test our hypotheses in the field, it might come with other issues (e.g., existing customers being confused by a new design). Second, we only hypothesize

that participants in the treatment group are more likely to apply the step-by-step strategy. Even though our findings are strongly supported by the anchoring-and-adjustment model of belief updating, future research might apply more fine-grained measurements like, for example, eye-tracking approaches. This might add further knowledge on how the accessibility of consumer reviews affects the way consumers process peer-generated information to evaluate product alternatives when making an online purchase decision. In addition, an eye-tracking approach could help to capture whether participants are reading consumer reviews at all and, if so, how intensely. This might be particularly worthwhile to deepen the understanding of the participants' behavior in the control group as the consumer reviews are immediately accessible. Finally, we only tested our hypotheses based on study participants that were using desktop devices. Given the recent research that highlights substantial differences between desktop and mobile usage due to different presentation of information (Fink and Papismedov, 2022), it remains unclear if our findings can directly be transferred to users with mobile devices. Therefore, future research might perform a similar study focusing on the difference between the presentation on desktop and mobile devices.

6.3 Practical Implications

Our results guide e-commerce retailers' decisions on how to implement the access to consumer reviews. If e-commerce retailers want their customers to be well-informed about a product's quality, they should require them to explicitly access consumer reviews (e.g., by clicking on a link or button), as this will more likely induce a step-bystep strategy for processing information resulting in stronger recency effects. While being well-informed about a product's quality not only increases consumer satisfaction (i.e., by choosing a high-quality product), it also saves e-commerce retailers' money and reduces carbon dioxide emissions due to fewer product returns. On the other hand, our findings also indicate that e-commerce retailers could implement the access to consumer reviews in a way that consumers' attention is drawn away from them. Especially e-commerce retailers offering low-quality products might apply such a strategy. Policy makers should be aware of this potential misconduct and could require providers of online review systems to support consumers in processing peer-generated information. This could imply, for instance, that consumer reviews must be accessible in a similar way across e-commerce retailers. Finally, our observation that one type of consumer is likely to neglect consumer reviews can also be transferred to other settings with information asymmetries (e.g., reading reviews for a bank account, doctor, hiking paths, etc.). Those who neglect information from consumer reviews are likely to make bad decisions in different situations in life when information asymmetries are present. Hence, policy makers should have an incentive to make inexperienced consumers aware of consumer reviews as an important means to reduce information asymmetries.

7 Acknowledgements

We thank the Austrian Science Fund (FWF): P32874-G for funding this research.

References

- Alzate, M., Arce-Urriza, M. & Cebollada, J. (2021), 'Online Reviews and Product Sales: The Role of Review Visibility', *Journal of Theoretical and Applied Electronic Commerce Research* **16**(4), 638–669.
- Babić Rosario, A., Sotgiu, F., Valck, K. de & Bijmolt, T. H. (2016), 'The Effect of Electronic Word of Mouth on Sales: A Meta-Analytic Review of Platform, Product, and Metric Factors', *Journal of Marketing Research* **53**(3), 297–318.
- Babić Rosario, A., Valck, K. de & Sotgiu, F. (2020), 'Conceptualizing the electronic word-of-mouth process: What we know and need to know about eWOM creation, exposure, and evaluation', *Journal of the Academy of Marketing Science* **48**, 422–448.
- Camilleri, A. R. (2020), 'The importance of online reviews depends on when they are presented', *Decision Support Systems* **133**, 113307.
- Chevalier, J. A. & Mayzlin, D. (2006), 'The Effect of Word of Mouth on Sales: Online Book Reviews', *Journal of Marketing Research* **43**(3), 345–354.
- Fink, L. & Papismedov, D. (2022), 'On the Same Page? What Users Benefit from a Desktop View on Mobile Devices', *Information Systems Research*.
- Floyd, K., Freling, R., Alhoqail, S., Cho, H. Y. & Freling, T. (2014), 'How Online Product Reviews Affect Retail Sales: A Meta-analysis', *Journal of Retailing* **90**(2), 217–232.
- Gutt, D., Neumann, J., Zimmermann, S., Kundisch, D. & Chen, J. (2019), 'Design of review systems A strategic instrument to shape online reviewing behavior and economic outcomes', *Journal of Strategic Information Systems* **28**(2), 104–117.
- Hajli, N., Lin, X., Featherman, M. & Wang, Y. (2014), 'Social Word of Mouth: How Trust Develops in the Market', *International Journal of Market Research* **56**(5), 673–689.
- Hayes A. F (2022), Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-Based Approach. Guilford Press.
- Hogarth, R. M. & Einhorn, H. J. (1992), 'Order effects in belief updating: The belief-adjustment model', *Cognitive Psychology* **24**(1), 1–55.
- Hu, N., Koh, N. S. & Reddy, S. K. (2014), 'Ratings lead you to the product, reviews help you clinch it? The mediating role of online review sentiments on product sales', *Decision Support Systems* **57**, 42–53.
- Huang, J.-H. & Chen, Y.-F. (2006), 'Herding in online product choice', *Psychology and Marketing* **23**(5), 413–428.
- Huang, L., Tan, C.-H., Ke, W. & Wei, K.-K. (2014), 'Do we order product review information display? How?', *Information & Management* **51**(7), 883–894.
- Jabr, W. & Rahman, M. S. (2022), 'Online Reviews and the Information Overload: The Role of Selective, Parsimonious and Concordant Top Reviews and their Valence', MIS Quarterly 46(3), 1517–1550.
- Kaushik, K., Mishra, R., Rana, N. P. & Dwivedi, Y. K. (2018), 'Exploring reviews and review sequences on e-commerce platform: A study of helpful reviews on Amazon.in', *Journal of Retailing and Consumer Services* **45**, 21–32.

- Kupfer, A., Maier, R., Zimmermann, S. & Thiele, J. J. (2020), 'Do Featured Consumer Reviews Matter?', *International Conference on Information Systems 2020 Proceedings*.
- Lei, Z., Yin, D., Mitra, S. & Zhang, H. (2022), 'Swayed by the reviews: Disentangling the effects of average ratings and individual reviews in online word-of-mouth', *Production and Operations Management* **31**(6), 2393–2411.
- Liu, X., Lee, D. & Srinivasan, K. (2019), 'Large-Scale Cross-Category Analysis of Consumer Review Content on Sales Conversion Leveraging Deep Learning', *Journal of Marketing Research* **56**(6), 918–943.
- Manes, E. & Tchetchik, A. (2018), 'The role of electronic word of mouth in reducing information asymmetry: An empirical investigation of online hotel booking', *Journal of Business Research* **85**, 185–196.
- Park, C. & Lee, T. M. (2009), 'Information direction, website reputation and eWOM effect: A moderating role of product type', *Journal of Business Research* **62**(1), 61–67.
- Reynolds, N. & Diamantopoulos, A. (1998), 'The effect of pretest method on error detection rates', *European Journal of Marketing* **32**(5/6), 480–498.
- Sparks, B. A. & Browning, V. (2011), 'The impact of online reviews on hotel booking intentions and perception of trust', *Tourism Management* **32**(6), 1310–1323.
- van Helversen, B., Abramczuk, K., Kopeć, W. & Nielek, R. (2018), 'Influence of consumer reviews on online purchasing decisions in older and younger adults', *Decision Support Systems* 113, 1–10.
- Zhou, S. & Guo, B. (2017), 'The order effect on online review helpfulness: A social influence perspective', *Decision Support Systems* **93**, 77–87.
- Ziegele, M. & Weber, M. (2015), 'Example, please! Comparing the effects of single customer reviews and aggregate review scores on online shoppers' product evaluations', *Journal of Consumer Behaviour* **14**(2), 103–114.