

Replication Experiment: Influence of Consumer Reviews on Purchase Intention

Soowon Jo

Hyuna Lee

Li Liu

Jiaqi Yu

6/16/2020

Project for BUSN 37907 (Spring 2020)

Behavioral Science Research Methods in Marketing

Introduction

Study 3 in Dai and colleagues (2020) experimentally tested whether people rely less on consumer reviews for experiential purchases than for material purchases in planned purchases. To implement the study in a more realistic setting, we asked participants to search for and read online user-generated reviews about their purchase and report the usefulness of these reviews in making their purchase decision. We also asked participants to report the extent to which the reviews reflected other consumers' assessments of the purchase's objective quality. In addition to the original study, this study further tested how consumer reviews would affect participants' purchase intentions by asking them to rate the likelihood of buying the product or experience before and after reading the reviews.

In this replication study, we confirmed that people are less likely to rely on consumer reviews for experiential purchases than for material purchases. Based on this finding, we hypothesized that consumers' purchase intentions will change more after reading online reviews for material purchases than for experiential purchases.

Method

Participants. We recruited 500 participants through MTurk and compensated each survey participant with \$2.25. We obtained the sample size based on a power analysis tool, G*Power, and ensured that we achieved a statistical power of 90% of the study. We excluded incomplete responses and responses from duplicate IP addresses, those who are under 18 years old, and those who fail the attention check. Similar to Dai and colleagues (2020), we excluded responses from those who did not write down valid numbers in the question that asks them the number of options discussed in the five reviews they read. Those who did not give a valid value for the expected cost were excluded from the analysis involving the expected cost. Responses from participants who did not specify a purchase, or who did not complete the search task were

also excluded from the analysis. As a result, we had 269 valid responses ($M_{\text{age}} = 36.44$, $SD_{\text{age}} = 10.7$, 1 unspecified; 37% female).

Purchase Type Manipulation. Participants were randomly assigned to describe either an experiential or material purchase they intended to make in the coming year that costs at least \$50. Participants in the experiential condition were instructed to think of a purchase that “involves spending money with the primary intention of acquiring a life experience—an event or series of events that you personally will encounter or live through.” Participants in the material condition were instructed to think of a purchase that “involves spending money with the primary intention of acquiring a material possession—a tangible object that you obtain and keep in your possession” (adapted from Van Boven & Gilovich, 2003). Since experiential purchases may be more hedonic or have fewer reviews available than material purchases, we instructed participants in both conditions to list one fun and enjoyable purchase that had online consumer reviews available.

Reliance on Consumer Reviews. Participants searched for five online user-generated reviews about the purchase they had specified. They then copied and pasted the review texts into the survey. They were told to look for reviews from any websites and list the websites where they found the reviews. Given that participants spent a similar There was no evidence that participants in the experiential condition ($M = 169.83$ seconds, $SD = 118.34$) spent more or less time than the material condition ($M = 181.71$ seconds, $SD = 188.53$; $t(253) = 0.63$, $p = .53$, $d = .07$). Participants then rated how helpful the reviews were (1 = “not at all,” 7 = “extremely”), how useful the reviews were (1 = “not at all,” 7 = “very much”), and how much they would rely on these consumer reviews for their purchase decision (1 = “not at all,” 7 = “very much”). The primary dependent variable, reliance on consumer reviews, was measured by averaging the ratings for these three items ($\alpha = .92$).

Purchase Intentions. As an extension of the study in Dai and colleagues (2020), we also studied the effect of reading online reviews on the change in purchase intention for the material and experiential purchases. This new metric (difference in purchase intention) helps us control for the unobservable confounding variables better than using the original metric (“helpfulness” score after reading reviews). In the survey, we asked participants to rate the likelihood of the purchase before and after they were requested to read reviews online (1 = “not at all,” 7 = “extremely”).

Quality Assessment Beliefs. We asked participants to indicate the extent to which the reviews they read reflected other consumer’s objective and subjective assessments of the purchase’s quality (1 = “not at all,” 7 = “a great deal”). The measure was adapted from Spiller and Belogolova (2017).

Manipulation Check. We asked the participants how much the purchase was material or experiential to the participants (1 = “purely material,” 9 = “purely experiential”).

Other Measures. For controls, we asked participants to indicate the number of different purchase options across the five reviews they read and listed. They also rated how

knowledgeable they were about the purchase (1 = “not at all,” 7 = “very much”) and indicated how much money, in dollars, they would pay for the purchase. To estimate whether the purchase was intended for either immediate or distant consumption, we asked them to indicate when they were planning to purchase the product. In addition, they rated how much they cared about their purchase decision, how important they considered the purchase, and how engaged they were in their purchase decision (1 = “not at all,” 7 = “very much”). We measured the purchase importance variable by averaging the responses to the last three items ($\alpha = .86$).

Results

Replication Results

Manipulation Check. We found similar results with the original study. The planned purchases were rated as more experiential in the experiential condition ($M = 7.58$, $SD = 1.99$) than the ones in the material condition ($M = 3.65$, $SD = 2.69$). The average rating for experiential purchases was significantly greater than the one for material purchases ($t(265) = 13.78$, $p < .0001$, $d = 1.64$).

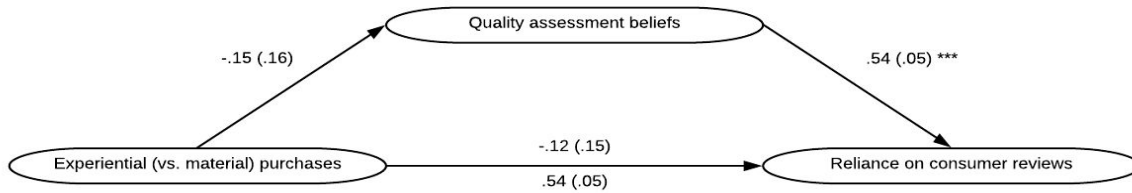
Reliance on Consumer Reviews. Similar to the original study, participants found reviews from websites such as Amazon, TripAdvisor, and Google. Generally, participants found the reviews to be useful ($M = 5.56$, $p < 0.0001$ vs. the midpoint of 4). Participants in the experiential purchases ($M = 5.45$, $SD = 1.60$) found the reviews to be less useful than the ones for material purchases ($M = 5.66$, $SD = 1.28$; $t(227) = 1.17$, $p = 0.122$, $d = .15$). Compared to the study by Dai and colleagues (2020), our results were less statistically significant.

Mediation by Quality Assessment Beliefs. As mentioned earlier, we conducted a mediation analysis to test whether quality assessment beliefs mediated the influence of purchase type on review reliance. Similar to the findings in the original study, we also found that participants considered reviews of experiential purchases ($M = 5.13$, $SD = 1.38$) as less likely to reflect the quality than those of material purchases ($M = 5.27$, $SD = 1.36$; $t(254) = 0.89$, $p = 0.19$, $d = 0.11$). However, the difference was not statistically significant at the 0.05 level. In addition, we also ran a 5,000-sample bootstrap analysis and calculated the indirect effect of purchase type on reliance on reviews via quality assessment beliefs. The estimate is $-.08$ ($SE = 0.09$) and the 95% bias-corrected confidence interval (CI) of the indirect effect is $([-0.26, 0.1])$. Since the interval includes zero and the p-value is large (0.37), there is not enough evidence that quality assessment beliefs mediated the influence of purchase type on review reliance (figure 1).

FIGURE 1

THE EFFECT OF EXPERIENTIAL (VS MATERIAL) PURCHASE TYPE ON

REVIEW RELIANCE IS MEDIATED BY QUALITY ASSESSMENT BELIEFS
(REPLICATION STUDY)

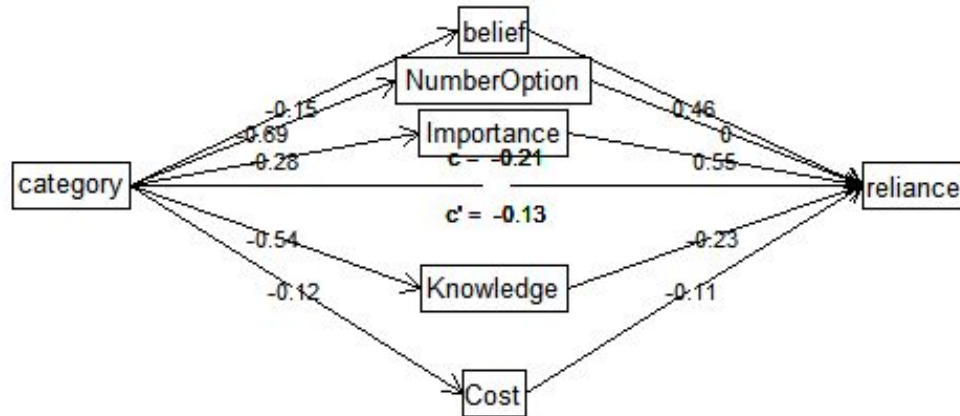


NOTE.—Unstandardized regression coefficients are shown, and standard errors are presented in parentheses. The coefficient above the path from purchase type to reliance on consumer reviews represents the total effect without the mediator in the model; the coefficient below the path represents the direct effect when the mediator was included in the model. Coefficients significantly different from zero are indicated by asterisks ($p < .05$, $**p < .01$, $***p < .001$).

Other Measures. Similar to the study in Dai and colleagues (2020), we found no significant results between experiential and material purchases in the number of options discussed by the reviews participants read ($M_{\text{experiential}} = 1.93$, $SD = 1.53$ vs. $M_{\text{material}} = 2.62$, $SD = 10.37$; $t(150) = 0.78$, $p = 0.43$, $d = .09$), log-transformed expected cost ($M_{\text{experiential}} = 5.09$, $SD = 1.29$ vs. $M_{\text{material}} = 5.21$, $SD = 1.20$; $t(243) = .76$, $p = .45$, $d = 0.1$). However, there were significant differences in purchase knowledge ($M_{\text{experiential}} = 5.07$, $SD = 1.62$ vs. $M_{\text{material}} = 5.60$, $SD = 1.11$; $t(202) = 3.09$, $p = .0022$, $d = .4$) and purchase importance ($M_{\text{experiential}} = 5.76$, $SD = 1.20$ vs. $M_{\text{material}} = 6.04$, $SD = 0.91$; $t(217) = 2$, $p = .03$, $d = 0.27$). Finally, we ran a multi-mediator model using these measures and quality assessment beliefs as mediators. Quality assessment beliefs remained as a strong significant mediator (indirect effect = 0.46, $SE = 0.053$, 95% CI = [0.35, 0.56]).

FIGURE 2

THE EFFECT OF EXPERIENTIAL (VS MATERIAL) PURCHASE TYPE ON
REVIEW RELIANCE IS MEDIATED BY QUALITY ASSESSMENT BELIEFS AND OTHER
MEASURES (REPLICATION STUDY)

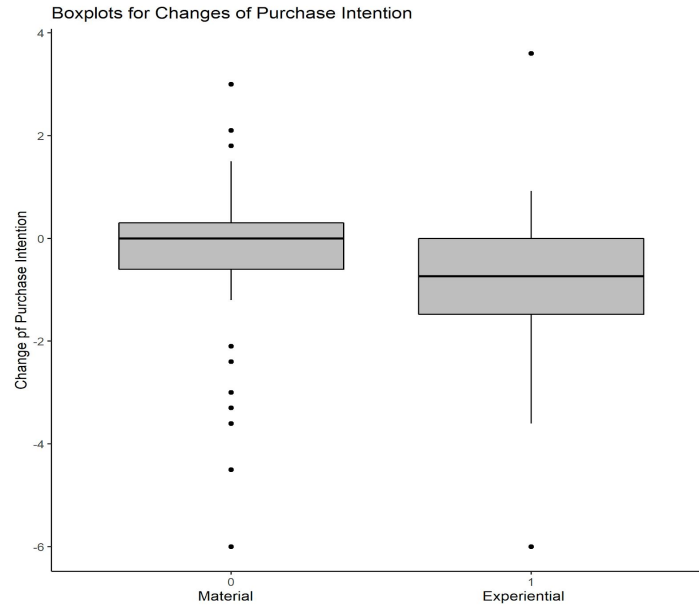


NOTE.—Unstandardized regression coefficients are shown. The coefficient above the path from purchase type to reliance on consumer reviews represents the total effect without the mediator in the model; the coefficient below the path represents the direct effect when the mediator was included in the model. The plot was produced automatically by the psych package in R.

Extension Results

Changes of Purchase Intention. We found the purchase intention decreased (figure 3.) for both the experiential ($M = -.80$, $SD = 1.27$, $p < .0001$ vs. no change) and material purchases ($M = -.25$, $SD = 1.33$, $p = 0.11$ vs. no change). In addition, the decrease of purchase intention was significantly larger in the experiential purchase condition than in the material purchase condition ($t(260) = 3.40$, $p = .0004$, $d = .42$).

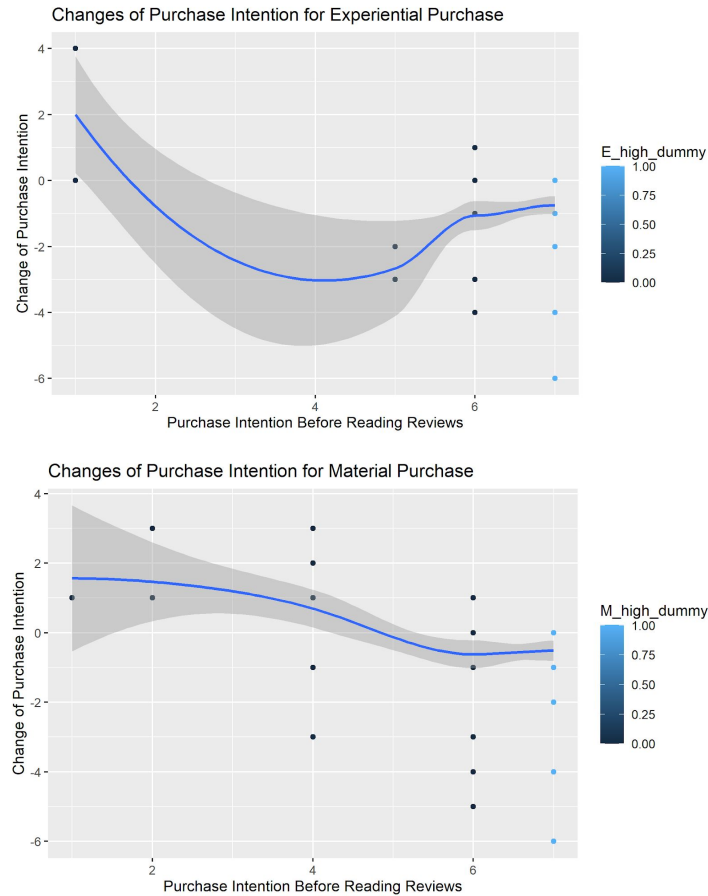
FIGURE 3.
BOXPLOTS FOR CHANGES OF PURCHASE INTENTION BEFORE AND AFTER
READING THE REVIEWS (EXTENSION STUDY)



Changes Conditional On Initial Purchase Intention. One issue of our new metric was that the amount of changes might be dependent on the initial purchase intention. As a result, we tested whether our previous results hold the same for subgroups with low or high levels of initial purchase intention. We divided the samples for both experiential and material groups into two subgroups based on whether the participant's initial purchase intention was above or below the mean. From figure 4., we found that the average changes were positive when initial purchase intentions were low and negative when initial purchase intentions were high for both experiential and material purchases.

Further, we ran statistical tests on the four subgroups. For the high initial purchase intention condition, we found no significant difference between experiential and material purchases in the changes of purchase intention ($M_{\text{experiential}} = -.75$, $SD = 1.20$ vs. $M_{\text{material}} = -.52$, $SD = 1.11$; $t(162) = -1.26$, $p = 0.21$, $d = .20$). For the low initial purchase intention condition, we found significant differences between experiential and material purchases in the changes of purchase intention ($M_{\text{experiential}} = -1.03$, $SD = 1.60$ vs. $M_{\text{material}} = -.07$, $SD = 1.67$; $t(76) = -2.86$, $p = .005$, $d = .58$), that participants' purchase intention changed more for experiential purchases.

FIGURE 4.
PLOTS FOR CHANGES OF PURCHASE INTENTION AT DIFFERENT INITIAL PURCHASE INTENTION LEVELS (EXTENSION STUDY)



Discussion

This study was a replication of Dai and colleagues (2020), in which the original authors found that people are less likely to rely on consumer reviews for experiential purchases than for material purchases because people believe that reviews are less reflective of the purchase's objective quality for experiences than for material goods. The current replication study confirmed the original finding that consumers rely more on reviews for material purchases than for experiential purchases. In the mediation analysis, however, the current study did not find that people considered experiential reviews as less likely to reflect the objective quality of the product than material reviews.

As an extension of Dai and colleagues (2020), we found that participants' purchase intentions changed more after reading reviews for experiential purchases than for material purchases overall, which was different from what we hypothesized. More specifically, for participants with high initial purchase intentions, there was no difference between the purchase intent for experiential purchases and material purchases; for participants with low initial intentions, their purchase intentions changed more for experiential purchases than for material

purchases. This result implies that purchase intention is more distinct from reliance on consumer review than we expected. We think this difference is caused by the fact that purchase intention is more similar to making choices, while reliance on consumer reviews is more similar to making evaluations. Past research found that consumers use different cognitive mechanisms when making choices compared to when making evaluations (e.g., Shocker et al. 1991; Kardes et al., 1993), which can result in diverging attitudes on reliance on consumer review and purchase intention.

In addition, we found that the purchase intention decreased for both the experiential and material purchases after reading reviews. This finding implies that, in general, reviews may discourage people from purchasing online products, whether they are material or experiential.

These findings illuminate the psychological processes underlying consumers' reliance on consumer reviews. Counterintuitively, though people may find reviews useful, reviews seem to hurt more than facilitating purchase behavior, making people more cautious about their decisions. With the added measure of purchase intention, we expanded the study from simply studying consumers' attitudes to more consequential decisions. This information can benefit businesses in that they can improve the algorithm for ranking consumer reviews, depending on whether the products they sell are material or experiential.

Limitations and Future Directions

One limitation in our study is that many participants did not put meaningful answers in the questions that 1) asked them to think of purchase and 2) asked them to search for and paste five online reviews. Many participants put meaningless words and sentences copied from the internet that did not answer the questions asked. To ensure the quality of results, we had to exclude a significant number of responses from the analyses, which may have caused systematic bias in the results. For example, those who were reluctant to complete open-ended questions were less likely to complete our survey. Though we replicated most of the findings in Dai and colleagues (2020), the answer quality issue is one that other researchers should be aware of. Potential solutions include replicating the study in an in-person lab setting and setting up bonus reward mechanisms that motivate participants to treat the open-ended answers more seriously.

Another limitation is that we inserted a purchase intention question before participants searched for online reviews. This change makes our design slightly different from the original design by Dai and colleagues (2020). In the original study, participants were not motivated to think about how much they wanted to purchase the product. We asked participants to think of purchasing intentions in our replication, which could result in participants having purchasing attitudes that are somewhat different from those recruited in the original study when answering other questions in the survey. Although our results replicated those of Dai and colleagues (2020), researchers conducting replication projects with extensions should avoid our approach.

Future research can include how consumers react to reviews for purchases that are both material and experiential. We noticed that certain purchases could not be simply categorized as either material or experiential. For example, a music player can be both a material and an experiential product—people do not consume the player itself, neither can they experience the music they like without the material player. In our study, participants may have categorized this type of consumption as either strictly material or experiential, which may have introduced confounds to the current research design. Do people have a preference for categorizing these purchases as material or experiential? If so, how do consumers' reliance on reviews differ for these purchases compared to purely material or experiential purchases? Exploring these questions would not only be theoretically interesting but also practically meaningful to marketers who cannot simply apply binary categorization (material vs. experiential) to their products.

References

- Dai, H., Chan, C., & Mogilner, C. (2020). People rely Less on consumer reviews for experiential than material purchases. *Journal of Consumer Research*, 46(6), 1052-1075.
- Kardes, F. R., Kalyanaram, G., Chandrashekar, M., & Dornoff, R. J. (1993). Brand retrieval, consideration set composition, consumer choice, and the pioneering advantage. *Journal of Consumer Research*, 20(1), 62-75.
- Shocker, A. D., Ben-Akiva, M., Boccara, B., & Nedungadi, P. (1991). Consideration set influences on consumer decision-making and choice: Issues, models, and suggestions. *Marketing letters*, 2(3), 181-197.
- Spiller, S. A., & Belogolova, L. (2017). On consumer beliefs about quality and taste. *Journal of Consumer Research*, 43(6), 970-991.
- Van Boven, L., & Gilovich, T. (2003). To do or to have? That is the question. *Journal of Personality and Social Psychology*, 85(6), 1193.