Stimulating Online Reviews by Gamification and Financial Incentives

For Money, and for Fun: Exploring the Effects of Gamification and Financial Incentives on Motivating Online Review Generation

Completed Research

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Abstract

Online reviews can serve as an important strategy to counter and mitigate the negative effects of information asymmetry which can lead to selecting a sub-optimal product or the wrong product. Prior research has demonstrated that financial incentives can motivate online review generation. However, the literature has largely ignored the growing use of gamification to encourage online review generation. In this paper, we propose using a combination of gamification and financial incentives to stimulate online reviews. We employed a randomized experiment to compare the effectiveness of gamification and financial strategies to improve the quantity, the quality, and the valence of online reviews. We found that combining gamification and financial incentives leads to the largest volume of reviews. But the relationship between gamification/financial incentives and the quality of the online reviews was not statistically significant. The results also suggested that the underreporting issue, where potential reviewers do not review because of time constraints and the effort required, can be mitigated by providing gamification and financial incentives. This study has important theoretical and managerial implications.

Keywords

Online reviews, Gamification, Financial incentives, Review quantity, Review quality, Underreporting.

Introduction

The rise of information technology has nurtured the growth of online markets and the accompanying online communities (Huang et al. 2017). In the last decade, consumers have benefited from the convenience and efficiency brought by IT-enabled products. While the availability of information for product choice has certainly improved, information asymmetry is still a problem in online markets (Dimoka et al. 2012). Online reviews can serve as an important instrument to counter information asymmetry, because reviews, particularly when the content is helpful and abundant, provide consumers with the requisite insight to evaluate products and services effectively (Yoo et al. 2015). Online communities such as TripAdvisor and Yelp, have built substantial review communities, partnered with social network website (e.g. Facebook), and encouraged users to share reviews with their friends (Sun et al. 2017). The net result is that online reviews lead to significant market outcomes for many businesses (Kumar et al. 2018).

However, since writing reviews for products or service is essentially a voluntary behavior, low frequency and low quality of contributions are a serious concern (Sun et al. 2017). Many platforms employ strategies, such as providing rewards, to boost the review generation. For example, Best Buy has offered monetary incentives to attract reviewers. Offering monetary incentives is a good strategy and has received attention from the research community, because of its effectiveness in stimulating reviews (Burtch et al. 2017; Khernam-nuai et al. 2018; Sun et al. 2017).
Gamification strategies, which also involve incentivizing, by providing rewards in the form of a badge or points, have also received attention as a way to motivate users’ contributions. For example, Yelp introduced “Yelp Elite Squad”, a badge recognizing users for their active contribution and high-quality reviews.\(^1\) Stackoverflow.com, a leading Q&A site, built a system consisting of a set of badges to motivate members’ contribution.\(^2\) We are aware of a few research examining the effect of gamification on the users’ activities in terms of the frequency of their contribution (Chen et al. 2018; Li et al. 2012). However, the literature is not clear about the role of gamification on the quality and the valence of online reviews. There is also lack of research on the combination effects of gamification and financial incentives. Understanding this problem is very important because it can guide firms to adjust their strategy for motivating consumers. Identifying this gap that remains in the literature, we ask the following research question: What are the roles of gamification and financial incentives on the process of online review generation regarding review quantity, review quality, and review valence?

We developed five hypotheses in accordance with our research question. To test the hypotheses, we conducted a randomized experiment through a two-stage design on Amazon Mechanical Turk. Specifically, in the first stage, we asked participants to complete a survey about demographics, personality and psychological needs. At the end of this survey, we invited participants to provide feedback for our survey in a redirected link, where the second stage of the experiment took place. For the second stage, subjects were assigned randomly to one of four incentive conditions: No incentives, Badge only, Money only, and Badge + Money. The percentage of subjects who provided feedback, the length of review, the emotion embedded in review were captured to measure the review quantity, review quality, and review valence, respectively. The comparison among group means of each condition were tested.

Our study makes several contributions to the literature. First, we contribute to the extensive research on stimulating online reviews. Previous research has explored the motivating effect of monetary incentives (Khern-am-nuai et al. 2018), as well as the impacts of social factors such as social norms (Burtch et al. 2017) and social connectedness (Sun et al. 2017) on review generation. In our paper, we investigate the impact of gamification, specifically, the use of badges on the process of generating online reviews.

The second contribution is related to the emerging but promising literature on gamification. Gamification has been found to help engage customers (Harwood and Garry 2015), students (Aparicio et al. 2019), and exercisers (Hamari and Koivisto 2015). However, the role of gamification on soliciting online reviews is still not receiving attention. We are filling this gap by explicitly studying the effect of gamification on multiple characteristics of online reviews. To our knowledge, this is the first paper to examine the effects of both gamification and financial incentives on generating online reviews.

**Literature Review**

**Online Review Generation**

Online reviews have become an important research focus for many IS scholars. In a study examining the effects of financial incentives and social norms on stimulating online reviews, Burtch et al. (2017) found that the combination of financial incentives and social norms yields the greatest motivation for review generation in terms of review volume and review length. Similarly, Sun et al. (2017) investigated the motivating effect of monetary rewards on user-generated contents and also the moderating effect of social connectedness on that relationship. Interestingly, the research showed that there was an overall decrease in total contributions after introducing monetary rewards; less-connected members contributed more by 1,400%, while more-connected members contributed less by 90%. Leveraging observational data from two online shopping platforms, Khern-am-nuai et al. (2018) revealed that after the introduction of monetary incentives, reviews became significantly more positive, however, the quality of reviews decreased. They also found that monetary incentives decreased the level of participation, but not the quality of the contribution.

Many platforms employ gamification design to increase reviewer contributions. Game elements, such as leaderboards and points, can improve the performance of online reviewers (Jung et al. 2010). For example,

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knowledge-creation sites such as Stack Overflow and Wikipedia, as well as educational sites such as Khan Academy give badges to users for their contributions and activities (Anderson et al. 2013). In this paper we focus on the interplay between using financial incentives and gamification strategies as motivation mechanisms.

**Gamification**

The burgeoning popularity of video games in the past decade or so has inspired business and organization to apply the paradigm of gaming in other contexts such as learning and work, where the concept of gamification emerged. Gamification is defined as using game elements and techniques in non-game contexts (Deterding et al. 2011). Despite being a nascent field, gamification has been trending across various disciplines including information systems (Liu et al. 2017), computer science (Anderson et al. 2013), marketing (Harwood and Garry 2015), and education (Hamari et al. 2016).

A large body of research on gamification has focused on its affordances in terms of motivation and engagement. For example, Wang et al. (2017) looked into two specific gamification elements: badges and mayorships, which relates to the expertise of users. They found that badges and mayorships can signal that online review contributor has knowledge that is useful and effective in generating relevant content. They also found that the impact of badges on perceived word-of-mouth effectiveness is larger than that of mayorships. Another study found that people “work out for likes”, meaning that positive recognition, social influence, and reciprocity have a positive impact on people’s willingness to exercise as well as their attitudes to use gamification services (Hamari and Koivisto 2015). In an educational context, Aparicio et al. (2019) found that gamification played a crucial role in the success of massive open online courses. Harwood and Garry (2015) empirically examined the role of gamification approach on online customer engagement and behavior. They demonstrated that gamification drove and incentivized responses such that customers exhibited relational behaviors similar to gameplay engagement.

We are aware of only two research projects studying the motivating effect of gamification design on online user engagement. Chen et al. (2018) found that a badge, for peer recognition in an online community, could boost users to a highest state of motivation to contribute in that community. Another study examined the value of badges on user activities in StackOverflow.com (Li et al. 2012). They showed that badges would motivate users to contribute more. Of particular interest, is that they found just earning a badge, even when the badge had a negative meaning, was associated with more user activities on website.

**Underreporting Bias of Online Reviews**

Our study is also related to the underreporting bias of online reviews. Underreporting bias happens when consumers would not write online reviews, due to the extra time and effort needed, even if they have abundant insights into usefulness and features of a product or service (Hu et al. 2017). This can be a problem, because consumers with extreme ratings are more likely to write reviews than those with moderate product ratings (Hu et al. 2017). The review valence refers to the positive or negative orientation of the information contained in a review (Kusumasondja et al. 2012; Qiu et al. 2012). In many instances, the valence of a review can be significantly biased towards either extreme due to the issue of underreporting.

A handful of papers have examined this issue (Dellarocas and Narayan 2006; Hu et al. 2009; Jiang and Guo 2015; Khern-am-nuai et al. 2018; Moe and Schweidel 2012). Particularly, Moe and Schweidel (2012) found that positive ratings environments increase incidence of posting, whereas negative ratings environments decrease incidence of posting. Hu et al. (2017) revealed that consumers do realize the existence of underreporting bias of online reviews, but they cannot fully account for this issue due to bounded rationality. In addition, they found that firms can respond to this self-selection issue by adjusting their pricing strategy.

Firms can act in various ways to mitigate the problem of underreporting and the resulting biased valence, by stimulating online reviews. Therefore, in this paper we seek to contribute to the literature by comparing the review valence before and after the treatments of gamification and financial incentives.

**Hypothesis Development**
**Review Quantity**

Gamification consists of three elements: (1) the gamification objects, which are the affordances implemented in a system; (2) the psychological outcomes lead by objects; and (3) the behavioral outcomes predicted by psychological experience (Koivisto and Hamari 2019). The behavioral outcomes should be further reflected by the dual goals of instrumental and experiential outcomes (Liu et al. 2017). Previous research has found that badges and leaderboards, two commonly used gamification elements, could positively affect the psychological need of competence and the perceived task meaningfulness (Sailer et al. 2017).

Among all gamification designs, badges provide users with special privileges, and sometimes certain badges can entitle users to review others’ contributions in the community. In this paper we explicitly study the impact of badges on review generation. We argue that users attracted by badges are motivated to complete the voluntarily task because of psychological needs of competence and the experience of enjoyment.

Economic theory states that rational individuals are driven by utility, meaning that online behavior of individuals should be affected by financial incentives (Burth et al. 2017). Prior studies showed that financial incentives could motivate behaviors online. For example, Fradkin et al. (2015) found that monetary rewards were effective in stimulating users to write reviews on Airbnb website. Cabral and Li (2015) suggested that the rate of feedback increased when a rebate was given to buyers on eBay. Hence, we propose that financial incentives play a role in stimulating online reviews.

We also consider the possibility of combining gamification and financial incentives to motivate online reviews. Since both psychological needs and utility driven goals provide motivation, and there is no explicit overlap between the effects of both mechanisms, we hypothesize that providing both badge and monetary awards will duplicate the stimulation effects related to online review generation. We further hypothesize that this combination effect will be larger than either the effect of just providing a badge or the effect of solely providing money. Hence:

*H1a. Providing a badge only, providing money only, and providing badge and money together, all lead to a larger quantity of reviews, compared to simply asking for reviews.*

*H1b. Providing badge and money together leads to a larger quantity of reviews, compared to providing badge only and providing money only.*

**Review Quality**

Beyond review quantity, review quality is also an essential characteristic of online reviews. Review quality typically refers to the effort made by the reviewers, as reviews of better quality require more time and effort (Khern-am-nuai et al. 2018). By examining product reviews retrieved from Amazon, Mudambi and Schuff (2010) found that review depth has a positive effect on the perceived helpfulness of the review. Pan and Zhang (2011) found similar evidence by examining the effect of review characteristics on review helpfulness. The literature has demonstrated that the rewards recipients may develop a sense of gratitude towards the reward giver (Wood et al. 2011), and they tend to exert more effort on review generation to show their appreciation (May 1987). We therefore hypothesize that providing rewards in the form of a badge or money, or the combination of both, will increase the quality of reviews compared to simply asking for reviews.

However, providing badge and money together does not necessarily lead to high quality reviews. There is a long stream of research discussing human motivation, and one of the commonly used theoretical lens is self-determination theory. This theory classifies human motivation as either intrinsic motivation or extrinsic motivation, depending on whether a behavior is conducted for the sake of the activity itself or for reasons external to the activity. (Deci and Ryan 2000; Koivisto and Hamari 2019; Ryan and Deci 2000). While previous research has indicated several drivers that intrinsically motivate people to expand effort on the tasks, such as the need for uniqueness and attention, the extrinsic rewards are often found to have undermining influence on the contribution (Khern-am-nuai et al. 2018). Gamification is considered an intrinsic motivation (Liu et al. 2017), and monetary awards is driven by extrinsic motivation (Burth et al. 2017). Thus, we propose that providing badges, an intrinsic motivation, will lead to the highest quality of the reviews due to more time and efforts exerted in the task. In contrast, we posit that only providing money will not lead to as high quality reviews as only providing a badge. Lastly, providing badge and money
together will also suffer by undermining effect of extrinsic rewards, which will result in lower quality reviews, compared to providing a badge only. The above discussion leads to the following two hypotheses.

\textbf{H2a. Providing a badge only, providing money only, and providing a badge and money together, all lead to higher quality of reviews, compared to simply asking feedback.}

\textbf{H2b. Providing a badge only, lead to higher quality of reviews, compared to providing money only and providing a badge and money together.}

\textbf{Review Valence}

As noted earlier, underreporting bias existing in online reviews can be problematic because consumers with moderate reviews are less likely to offer reviews. This will translate to bimodal extreme reviews. A natural way of mitigating this issue is to provide rewards to attract reviewers who would otherwise not contribute (Khern-am-nuai et al. 2018). Aligning with our earlier hypotheses on review quantity and review quality, we speculate that by providing badge only, money only, as well as badge and money together will attract those particular reviewers with moderate opinions, who otherwise would not participate had we not provide any forms of rewards. These groups of reviewers, when writing reviews, will express relatively moderate levels of emotions, i.e. review valence, compared to the emotional expression of reviewers who were simply asked for providing feedback. Hence:

\textbf{H3. Providing badge only, providing money only, and providing badge and money together, lead to lower review valence, compared to simply asking for feedback.}

\section*{Method}

\textbf{Participants, Procedure, and Treatments}

To test the hypotheses and draw insights, we conducted a randomized experiment on Amazon Mechanical Turk (AMT). AMT is an efficient and cost-friendly online crowdsourcing marketplace (Ghose et al. 2014). The literature has shown the validity and effectiveness of AMT as a platform for conducting experiments (Chan and Wang 2017; Huang et al. 2018). We recruited 480 subjects from AMT for the study.

<table>
<thead>
<tr>
<th>Conditions</th>
<th>Descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>We would appreciate your feedback to improve our survey. Please take a minute to write a comment.</td>
</tr>
<tr>
<td>Badge</td>
<td>We would appreciate your feedback to improve our survey. Please take a minute to write a comment. You will receive a &quot;Top Contributor&quot; Badge for providing us with feedback!</td>
</tr>
<tr>
<td>Money</td>
<td>We would appreciate your feedback to improve our survey. Please take a minute to write a comment. You will receive extra $0.045 as a bonus for providing us with feedback!</td>
</tr>
<tr>
<td>Badge + Money</td>
<td>We would appreciate your feedback to improve our survey. Please take a minute to write a comment. You will receive extra $0.045 as a bonus and receive a &quot;Top Contributor&quot; Badge for providing us with feedback!</td>
</tr>
</tbody>
</table>

\textbf{Table 1. Treatment Conditions}

The experiment procedure consisted of two stages. In the first stage, the subjects were asked to respond a survey about their demographics, their personality, and their psychological needs. We collected demographics information on age, gender, race, education, and household income. The personality variables were measured using 10 items from the Big-Five personality test (Gosling et al. 2003). The psychological needs constructs were measured using a scale based on self-determination theory (Deci and
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Ryan 2000; Gagné 2003). A question asking “What year it is” was added to ensure the quality of the response by identifying subjects who were not paying attention. Seven responses were removed as a result of failing the quality checking.

The first stage of the experiment serves two purposes: (1) the survey creates a platform for us to connect with subjects, and the survey itself is a “product” that the subjects can write feedback for; and (2) we use the demographics obtained in this survey to conduct the randomization tests to ensure there are no systematic differences of subjects across the groups in the second stage.

In the second stage of the experiment, we invited the subjects to provide feedback related to how the survey in the first stage could be improved. The subjects were randomized into one of four groups at the end of the survey: Control, Badge, Money, Badge + Money, and the number of subjects in each group are 77, 80, 157, and 159, respectively. The four treatment conditions are summarized in Table 1. The money rewards were sent to subjects in Money group and Badge + Money group via API, a tool provided by AMT for processing tasks involving multiple subjects. The “Top Contributor” badge, as shown by Figure 1, were given when subjects in Badge group and Badge + Money group finished writing reviews.

![Figure 1. The “Top Contributor” badge given to qualified subjects](image)

**Randomization Test**

We conducted randomization tests by employing pairwise Tukey’s HSD tests of self-reported demographic variables across treatment groups. The subjects were randomly assigned to each of four conditions, thus we report six pairwise tests for each demographic variable. The demographic variables include subjects’ age, gender, race, education, and household income. The results of Tukey’s HSD tests were reported in Table 2, where we found no pairwise comparisons were significant for any of the variables in our study.

<table>
<thead>
<tr>
<th>Pairwise Test</th>
<th>Age</th>
<th>Gender</th>
<th>Race</th>
<th>Education</th>
<th>Household Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Badge vs. Control</td>
<td>0.66</td>
<td>1.91</td>
<td>0.57</td>
<td>0.09</td>
<td>1.44</td>
</tr>
<tr>
<td>Money vs. Control</td>
<td>2.06</td>
<td>1.58</td>
<td>0.33</td>
<td>0.83</td>
<td>1.69</td>
</tr>
<tr>
<td>Badge + Money vs. Control</td>
<td>0.88</td>
<td>2.52</td>
<td>0.74</td>
<td>0.31</td>
<td>1.39</td>
</tr>
<tr>
<td>Money vs. Badge</td>
<td>1.33</td>
<td>0.62</td>
<td>0.32</td>
<td>0.73</td>
<td>0.05</td>
</tr>
<tr>
<td>Badge + Money vs. Badge</td>
<td>0.13</td>
<td>0.32</td>
<td>0.09</td>
<td>0.22</td>
<td>0.27</td>
</tr>
<tr>
<td>Badge + Money vs. Money</td>
<td>1.47</td>
<td>1.15</td>
<td>0.5</td>
<td>0.63</td>
<td>0.39</td>
</tr>
<tr>
<td>Observations</td>
<td>473</td>
<td>473</td>
<td>473</td>
<td>473</td>
<td>473</td>
</tr>
</tbody>
</table>

Notes: Values represent Tukey’s HSD pairwise test statistic – critical value for p < 0.05 is 3.66.

**Table 2. Tukey’s Pairwise Tests of Pre-Treatment Balance**

**Dependent Variables**

We have three outcomes of interest: (1) review quantity, measure by the percentage of the feedback provision, which is the ratio of the quantity of reviews provided and the total number of the subjects in
Thus, h2b is not supported.


difference between the review length of high providing badge and money together. H2b stated that reviews that were Badge group higher review quality providing badge only and providing money only. We found only partial support for H2b, which predicted that providing badge and money together lead to higher volume of reviews compared to simply asking for feedback, we observe that subjects in the Badge group (p < 0.05), the Money group (p < 0.001), and the Badge + Money group (p < 0.001) are more likely to provide feedback than the those in the Control group.

H2b proposed that providing badge and money together lead to higher volume of reviews compared to providing badge only and providing money only. We found only partial support for H2b, that subjects in the Badge + Money group are more likely to provide feedback than the Badge group (p =0.06), but there is no statistically significant difference between the Badge + Money group and the Money group (P > 0.1) regarding volumes of the review.

H2a predicted that providing badge only, money only, and providing badge and money together all lead to higher review quality compared to simply asking for feedback. Consistent with H2a, participants in the Badge group (p < 0.01), the Money group (p < 0.01), and the Badge + Money group (p < 0.001) wrote reviews that were longer than those in the Control group.

H2b stated that providing badge only will lead to longer reviews compared to providing money only and providing badge and money together. Figure 3 illustrates that the review quality in the badge group was the highest among all conditions. However, there is no statistically significant difference in terms of average review length of the Badge group and the Money group (P > 0.1). Neither did we find statistically significant difference between the review length of the Badge group and that of the Badge + Money group (P > 0.1). Thus, h2b is not supported.

![Figure 2. Percentage of Subjects Who Provided Feedback in Each Condition](image1)

![Figure 3. Average Length of Feedback Provided in Each Condition](image2)

Results

Our analysis begins with a model-free consideration of the differences in our three dependent variables for the four groups. Figures 2, 3, and 4 plot group means and standard errors of percentage of subjects providing feedback, length of review, and emotional tone of review, respectively. In the Control group, 15.6% of the subjects provided feedback, the average length of the reviews is 10.9, and the average emotional tone of the reviews is 99.0. In the Badge group, 30.0% of the subjects provided feedback, the average length of the review is 23.0, and the average emotional tone of the reviews is 86.5. In the Money group, 36.9% of the subjects provided feedback, the average length of the review is 20.7, and the average emotional tone of the reviews is 90.3. In the Badge + Money group, 40.3% of the subjects provided feedback, the average length of the review is 22.5, and the average emotional tone of the reviews is 93.9.

We tested our hypotheses using pairwise comparisons of group means. Consistent with H1a, which predicted that providing badge only, money only, and providing badge and money together all lead to a larger volume of reviews compared to simply asking for feedback, we observe that subjects in the Badge group (p < 0.05), the Money group (p < 0.001), and the Badge + Money group (p < 0.001) are more likely to provide feedback than the those in the Control group.

Consistent with H2a, participants in the Badge group (p < 0.01), the Money group (p < 0.01), and the Badge + Money group (p < 0.001) wrote reviews that were longer than those in the Control group.

H2b stated that providing badge only will lead to longer reviews compared to providing money only and providing badge and money together. Figure 3 illustrates that the review quality in the badge group was the highest among all conditions. However, there is no statistically significant difference in terms of average review length of the Badge group and the Money group (P > 0.1). Neither did we find statistically significant difference between the review length of the Badge group and that of the Badge + Money group (P > 0.1). Thus, h2b is not supported.
Finally, H3 stated that comparing to simply asking for feedback, providing badge only, providing money only, and providing badge and money together all lead to lower review valence. From Figure 4, we found that the emotional tone in the Control group is higher than that of the other groups. We further tested this hypothesis by comparing the emotional tone of each group, and found that the emotional tone in the Control group is larger than that in the Badge group (P < 0.1) and that in the Money group (P < 0.1), but not that in the Badge + Money group (P > 0.1). Therefore, H3 was partially supported.

![Figure 4. Average Emotional Tone of Feedback Provided in Each Condition](image)

**Discussion**

In this study, we examined the stimulating effect of gamification, as well as the combined effect of gamification and financial incentives on online review generation. Through a randomized experiment conducted on Amazon Mechanic Turk, we found that providing the badge only, monetary rewards only, and the combination of the badge and money can lead to higher volumes of reviews compared to simply asking for feedback. We also found that the badge and monetary rewards, together, will result in a higher volume of reviews than providing the badge only, but not higher than providing money only. These results reveal the preferences of consumers with regard to different type of rewards that lead to generating reviews. Adding money to gamification can lead to a higher volume, but not the other way around. This suggests that financial incentives should prioritize gamification as the strategy to stimulate review generation.

In reference to review quality, compared to simply asking consumers to write reviews, providing badge only, providing money only, and providing badge and money together will all lead to higher quality of reviews. Figure 3 illustrates that providing badges only will lead to the highest quality of reviews. However, contrary to our hypothesis, we did not find significant differences between the review length for our three treatment groups. This may actually be a good thing, since it appears that the amount of the financial incentives can be reduced and the quality of the reviews will not be compromised.

Lastly, we found that when providing badge only or money only, the resulted review valence is lower than the review valence when simply asking for feedback. This result supports using both financial rewards and gamification to alleviate the underreporting issue.

**Implications and Future Research**

Our study contributes to literature in following ways: first, it extends the discussion of review generation by integrating financial incentives and gamification (Burtch et al. 2017; Khern-am-nuai et al. 2018). The second contribution is that review valence was improved using both financial and gamification strategies (Zhou and Duan 2016). Lastly, we contribute to the literature on gamification by studying the stimulating effects of a specific gamification design, badge, on review generation. This is a topic that has been largely overlooked by prior research.

This research has several important implications for practitioners and mangers. Budget management is crucial for business especially startups companies. While paying consumers for their online reviews contributions does work, and the review volumes will indeed increase, this strategy can be costly. We found that reviews can be solicited by using smaller financial incentives. This is a definite benefit for small startups who are looking for cost-efficient strategies. For mature companies with excessive cash, using the strategy...
of combining gamification and financial incentives may lead to an optimal solution of stimulating online reviews.

This study also has limitations, which open up several opportunities for future research. First, the subjects recruited in the experiment are online workers, who are being paid to respond a survey. Although the subjects were invited to provide feedback for a “service”, we also acknowledge that it was not a “shopping” context. Future research can explore our research question in an online shopping website using either observational data or experiment design. Secondly, there are 473 valid responses in our study, which is indeed sufficient to draw conclusion. However, we suggest future study to recruit more participants. A larger sample of solicited reviews can help to generate more robust results when considering review quality and review valence as outcomes of interest.

REFERENCES


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