**Analyzing Review Efficacy on Amazon.com: Does the Rich Grow Richer?**

**ABSTRACT:** This paper analyzes review efficacy on Amazon.com.Specifically, review efficacy is conceptualized as the readership and the helpfulness of reviews submitted on the website. Informed by the Matthew effect and the Ratchet effect— “the rich grow richer and the poor grow poorer,” the paper examines if reviews submitted by reputed reviewers are deemed more efficacious compared with those contributed by novices.A research framework is proposed to identify antecedents that could promote review efficacy. The antecedents include both quantitative and qualitative aspects related to review titles and descriptions. Three key findings are gleaned from the results. First, the antecedents of review readership are not necessarily identical to those of review helpfulness. Second, both titles and descriptions of reviews are related to review efficacy. Third, the antecedents of review efficacy are different for reputed and novice reviewers. The paper concludes by highlighting its theoretical contributions and implications for practice.

**Highlights**

* Review efficacy is conceptualized as review readership and review helpfulness.
* Review efficacy on Amazon.com is examined as a function of reviewer reputation.
* Properties of titles and descriptions of reviews are related to review efficacy.
* Antecedents of review readership are not identical to those of review helpfulness.
* Antecedents of review efficacy are different for reputed and novice reviewers.

**Keywords:** review readership; review helpfulness; Amazon.com; reviewer reputation

**1. Introduction**

The Internet has grown into a popular platform that supports not only e-commerce transactions but also the exchange of user-generated product reviews. As a result, it has become an important source of information helpful for pre-purchase decision making. However, the huge volume of reviews sometimes attracted by a single product can easily overwhelm users.

To minimize information overload, most review websites resort to social navigation, a functionality that prioritizes the submitted reviews based on users’ evaluations (Otterbacher, 2009). For example, Amazon.comaccompanies every submitted review with the question, “Was this review helpful to you?” Users who have read a given review respond to the question by clicking either Yesor No. The evaluations of the revieware summarized through annotations such as “x of y people found the followingreview helpful.”Eventually, reviews with relatively high helpfulnessare bubbled toward the topof the products’ information pages. Since thissocial navigation functionality has been increasingly used by users to decide which reviews to read (Huang et al., 2015),it has also become a subject of scholarly interest.

Despite several works in this area (e.g., Korfiatis et al., 2012; Mudambi&Schuff, 2010), three research gaps can be identified.First, most relatedworks focused onreview helpfulness but overlooked review readership. Review helpfulness is the ratio of the number of helpful votes to that of total votes attracted by a review. In contrast, review readership refers to the frequency with which a review is read and voted as being either helpful or unhelpful. Since the social navigation functionality depends on a voluntary voting mechanism, not all reviews are guaranteed to attract readership.This is especially because users are selective in deciding what to read, and what to overlook (Salehan& Kim, 2016). If a review fails to attract readership in the first place, it will have no chance of being voted as helpful. Hence, abetter understanding of social navigationrequires both readership and helpfulness of reviews to be taken into account. Together, review readership and review helpfulness are referred as review efficacy in this paper.

Second, even though some studies examined how reviewer reputation shaped review helpfulness (Ghose&Ipeirotis, 2011; Kuan et al., 2015), little research has been done on the extent to which review efficacyis clouded by the reputation of reviewers. This paper argues that reviews submitted by reputed and novice reviewers might not always attract the same level of either endorsement or scrutiny. On the one hand, as the adage goes “the rich grow richer and the poor grow poorer,” reviews contributed by reputed reviewers could be endorsed more readily than those submitted by novices. This is because users tend to rely on reviewers’ reputation as a heuristic to ascertain reviews’ quality (Wan, 2015). On the other hand, reviews submitted by reputed reviewers could come under the scanner even more than those submitted by novices. This is because reputed reviewers are inherently expected to submit high quality entries (Ngo-Ye & Sinha, 2014). These in turn suggest that the antecedents of review efficacy could be different for reputed and novice reviewers. Yet, the literature is currently silenton this possible distinction.

Third, even though reviews are mostly structured as titles and descriptions, the ways in which these two separate textual components predict review efficacyhave yet to be explored. Titles and descriptions of reviews play different communicative roles. Being succinct, titles are meant to attract readers’ attention and provide sufficient information to make a decent first impression. Descriptions, being lengthy, need to be not only informative but also comprehensible and reliablein order to inspire confidence (Ascaniis&Gretzel, 2012; Dor, 2003; Shie, 2010). Therefore, this paper argues that attractiveness and informativeness of titles coupled with comprehensibility, informativeness and reliability of descriptions could have a bearing on review efficacy. However, little efforts have been invested to empirically examine how these properties of titles and descriptions relate to review efficacy.

For these reasons, this paper investigatesthe antecedents of review efficacy, which encompasses readership and helpfulness of reviews, as a function of reviewer reputation. The antecedents include properties of both titles and descriptions. Specifically, the following research questions (RQs) are formulated for investigation:

**RQ 1.** How do the properties of review titles relate to review efficacy?

**RQ 2.** How do the properties of review descriptions relate to review efficacy?

**RQ 3.** How does reviewer reputation moderate the relation between the properties of review titles and review efficacy?

**RQ 4.** How does reviewer reputation moderate the relation between the properties of review descriptions and review efficacy?

The rest of the paper is structured as follows. The next section reviews the literature that culminates in a research framework which specifies the antecedents of review efficacy. Methods for data collection, measurement and analysis are presented next. This is followed by the results. The key findings gleaned from the results are discussed. The paper concludes by highlighting its limitations, contributions and implications.

**2. Literature Review**

*2.1. Related Works*

Works on antecedents of review helpfulness are aplenty in the literature. Majority of these works attempted to identify quantitative antecedents of review helpfulness.In one of the earliest works, Mudambi and Schuff (2010) noted that review helpfulness varies as a function of review rating and review length. Some of the most commonly examined quantitative antecedents in the follow-up research includereview rating (Baek et al., 2015),review length (Korfiatis et al., 2012), review readability (Krishnamoorthy, 2015; Liu et al., 2013) and reviewer reputation (Kuan et al., 2015; Scholz& Dorner, 2013).

Works identifying qualitative antecedents of review helpfulness are relatively scanty. This is perhaps due to the effort required in capturing and coding such information. Among the few works that focused on qualitative antecedents, some examined expertise claims and the listing of product aspects in reviews (Weathers et al., 2015), someanalyzed information density in reviews (Willemsen et al., 2011) while others studied how reviews provided a clear path to making purchase decisions (Mackiewicz& Yeats, 2014).

Even though reviews usually comprise both titles and descriptions, most studies related to review helpfulness focus only on descriptions. The omission of titles is significant because being conspicuous, they grab eyeballs more easily than descriptions do (Ascaniis&Gretzel, 2012).Among the handful of works that took into account the role of titles, the focus has been on length (Salehan& Kim, 2016)and attractiveness (Lee & Yang, 2015). Yet, the literature has yet to explicitly identify the properties of titles as well as those of descriptions to predict review helpfulness.

Amid efforts to better understand review helpfulness, some attention, albeit limited, seems to be trained on the antecedents of review readership (Kuan et al., 2015; Salehan and Kim, 2016). Scholars are perhaps beginning to realize that investigating helpfulness alone without considering readership fails to paint a complete picture of review efficacy.

Informed by this recent development, this paper argues that review efficacy encompasses both readership and helpfulness of reviews. After all, if a review fails to attract readership in the first place, it has no opportunity to be evaluated as being helpful. Moreover, to dovetail extant literature, this research considersboth quantitative and qualitative properties of review titles and descriptions to predict review efficacy.

*2.2. Theoretical Background*

The ways in which users process reviews could be explained through the lens of the dual process theory. This theory positstwo approaches to process reviews, namely, informational influence and normative influence. Under informational influence, users spend cognitive efforts to process reviews and make decisions. Under normative influence, users process reviews based on norms using heuristics (Deutsch & Gerard, 1955). This duality has been expressed in various forms such as deep versus shallow processing (Craik & Lockhart, 1972), controlled versus automatic processing (Schneider & Shiffrin, 1977), thoughtful versus mindless processing (Abelson, 1976; Langer et al., 1978), systematic versus heuristic processing (Chaiken, 1980), and central versus peripheral processing (Petty &Cacioppo, 1986).

Between the two, informational influence is more cognitively demanding than normative influence. To process reviews based on the former approach, users would need to invest their cognitive bandwidth on the information provided in titles and descriptions of reviews. On the other hand, the latter approach merely requires the use of mental shortcutsusing heuristic cues (Deutsch & Gerard, 1955; Petty &Cacioppo, 1986).

Specifically, when reviewer reputation isused as a heuristic cue, the Matthew effect and the Ratchet effect could kick in. The Matthew effect refers to the phenomenon of the rich continually growing richer, and the poor getting poorer. It works concurrently with the Ratchet effect, which refers to the phenomenon that once individuals become reputed, they rarely fall much below (Merton, 1968; Wan, 2015).

If the Matthew effect and the Ratchet effect were to hold good in the present context, reviews from reputed reviewers would be viewed more favorably vis-à-vis those from novices. This in turn would allow reputed reviewers to rule the roost on review websites. Entries contributed by them would garner greater attention, and hence attract more readership and helpfulness votes compared withentries submitted by novices even if contributions from both are equally compelling. Therefore, the roles played by the antecedents of review efficacy could be different for reputed and novice reviewers.

In this vein, some works found reviewer reputation to be a predictor of review helpfulness (Huang et al., 2015). Yet, others found that reputed reviewers did not always attract helpfulness votes (Zhu et al., 2014). Notwithstanding such inconclusive findings, the ways in which review efficacy could be clouded by the reputation of reviewers has yet to be empirically investigated.

*2.3. Research Framework*

This paper proposesa framework that specifies possible antecedents of review efficacybased on titles and descriptions. Titles are succinct devices meant to capture attention. They are often valued for their attractiveness and informativeness (Ascaniis&Gretzel, 2012; Dor, 2003; Shie, 2010). Descriptions are longer, and incorporate details that are not possible to be accommodated in titles. They are often valued for their comprehensibility, informativeness and reliability (Korfiatis et al., 2012; Mackiewicz& Yeats, 2014; Willemsen et al., 2011). Therefore, titles’ attractiveness and informativeness as well as descriptions’ comprehensibility, informativeness and reliability could have a bearing on review efficacy albeit differently for reputed and novice reviewers.

Attractiveness of titles entails properties that entice users to read on. It is conceptualized as length and persuasiveness. Length is a measure of the number of words used in titles. Persuasiveness refers to the extent to which titles evoke curiosity. Short and curiosity-evoking titlescould be received favourably by users(Ascaniis&Gretzel, 2012; Dor, 2003; Lee & Yang, 2015).

Informativeness of titles entails properties that measure their factual richness. It is conceptualized as product aspects, and lexical density. Product aspects indicate the extent to which titles highlight characteristics of the product under review. Lexical density is the ratio of content-bearing noun words to all words in titles. Titles that highlight key aspects of products, and are lexically dense could be deemed as being informative (Mackiewicz& Yeats, 2014; Shie, 2010; Willemsen et al., 2011).

Comprehensibility of descriptions entails properties that contribute to their ease of processing. It is conceptualized as length and readability. Length is a measure of the amount of words used in descriptions. Readability is a measure of the extent to which descriptions are easy to read. Descriptions that are not overly long but easy to read could be deemed comprehensible (Korfiatis et al., 2012; Lee et al., 2008).

Informativeness of descriptions is a measure of their factual richness. Similar to that of titles, informativeness of descriptions is conceptualized as product aspects and lexical density. Descriptions that highlight key aspects of products, and are lexically dense are deemed informative (Mackiewicz& Yeats, 2014; Richard et al., 2010; Willemsen et al., 2011).

Reliability of descriptions refers to the extent to which they could be depended upon by users. It is conceptualized in terms of positivity, negativity, advice and expertise. Positivity refers to the use of positive emotion words while negativity refers to the use of negative emotion words in descriptions. Advice refers to the extent to which descriptions offer explicit guidance on purchase decision-making. Expertise refers to the extent to which reviews contain information about the contributors’ knowledge and familiarity about the product under evaluation. Descriptions that are overly positive or negative may not be relied upon as unbiased (Tang et al., 2014). Nonetheless,those that offer advice for decision-making and contain claims of expertise are considered reliable (Mackiewicz& Yeats, 2014; Mudambi&Schuff, 2010). The proposed research framework is depicted in Figure 1.

**Review Titles**

*Attractiveness*Length, Persuasiveness

*Informativeness*

Product aspects, Lexical density

**Review Efficacy**

Review Readership

Review Helpfulness

Reviewer reputation

**Review Descriptions**

*Comprehensibility*

Length, Readability

*Informativeness*

Product aspects, Lexical density

*Reliability*

Positivity, Negativity, Advice, Expertise

FIG. 1. The proposed research framework.

**3. Methods**

*3.1. Data Collection*

Data were collected from Amazon.com (Chua & Banerjee, 2016). It was chosen because Amazon.com has long been considereda giant in e-commerce. Moreover, it pioneered the social navigation functionality of review helpfulness that still remains an integral feature of thereview website (Wan, 2015).Additionally, Amazon.com continues to be tapped by the scholarly community for data collection (Kousha&Thelwall, 2016; Kuan et al., 2015).

To ensure a well-balanced dataset, data were collected for two types of products, namely, search and experience. Search products are those whose quality is assessableobjectively on the basis of product specifications (Willemsen et al., 2011). Three search products chosen include digital cameras, cell phones and laser printers (Williamsen et al., 2011). In contrast, experience products are those whose quality is difficult to ascertain before use (Mudambi&Schuff, 2010). Three experience products chosenincludebooks, cosmetics and music albums (Huang et al., 2015; Mudambi&Schuff, 2010; Park & Lee, 2009).Across the six chosen products, 900 best seller product items were identified as follows: 200 digital cameras (100 each for digital SLR cameras as well as point-and-shoot digitalcameras), 300 cell phones (100 each for contract cell phones, no-contract cell phones, and unlocked cell phones), 100 laser printers, 100 books, 100 cosmetics, and 100 music albums.

For each of the sixchosen products, 10 product items that had attracted 30 to 100 reviews were randomly selected to yield 60 product items (6 products x 10 product items). Since these product items attracted less than 100 reviews, they did not seem too popular. Overly popular product items were avoided because they might be too familiar to users, thereby obviating the need to rely on reviews. Moreover, since the product items attracted at least 30 reviews, they did not seem too obscure. Overly obscure product items were avoided because they could be unlikely to receive much attention(Chua & Banerjee, 2016; Fang et al., 2016; Mudambi&Schuff, 2010).

From the 60 selected product items, a total of 2,307 available reviewswere collected. In particular, the following data items could be retrieved: review star rating, review title, review description, number of helpful votesas well as total number of votes attracted by the review, and number of helpful votes attracted by the reviewer. After eliminating 117non-English entries, 2,190 reviews (2307-117) were retained.

*3.2. Measures*

With respect to review efficacy, review readership was measured as the total number of votes received by a review. Review helpfulness was measured as the ratio of the number of helpful votes to that of total votes attracted by a review (Korfiatis et al., 2012; Kuan et al., 2015). The higherthe ratio for a given review, the greater is its helpfulness.

Reviewer reputation was measured as the totalnumber of helpful votes attracted by a reviewer (Duan&Zirn, 2012). This isbecause Amazon.com displays this information most conspicuously on reviewers’ home pages. Hence, it could easily be used as a heuristic to judge the efficacy of a review.The nature of reviewer reputation in the dataset of 2,190 reviews was as follows: *M* = 373.40, *SD* = 2530.91, *Q1*= 4, *Mdn* = 16, *Q3*= 70, *Min* = 0, *Max* = 65324. Even though median split is a common strategy to dichotomize a continuous variable, it could not be employed here due to the heavily skewed distribution. Hence, the dataset was pruned to retain data points with reviewer reputation equal or above the 75th percentile, and equal or below the 25th percentilein order to markedly distinguish between reputed and novice reviewers respectively.The pruned dataset comprised data points of 1,145 reviews (630 from reputed reviewers + 515 from novice reviewers), which was admitted for the final analyses.

With respect to attractiveness of titles, length was measured in terms of the number of words (Mudambi&Schuff, 2010). Persuasiveness of titles was measured with the help of qualitative coding (Lee & Yang, 2015). Three coders, who were graduate students of Information Systems in a large public university and were well-versed with the use of review websites, annotated titles on a scale of 1 (least persuasive) to 5 (most persuasive) in terms of their ability to evoke curiosity of the review.

With respect to informativeness of titles, indication of product aspects was measured qualitatively by the coders on a scale of 1 (lowest) to 5 (highest) in terms of the characteristics of products highlighted. Lexical density was measured as the ratio of the number of nouns to the total number of words. The higher the ratio for a given title, the greater is its lexical density (Stotsky, 1981; Willemsen et al., 2011).

With respect to comprehensibility of descriptions, length was measured in terms of the number of words (Mudambi&Schuff, 2010). Readability was measured by taking the average of commonly used metrics such as the Gunning-Fog Index, the Coleman-Liau Index,and the Automated Readability Index (Korfiatis et al., 2012). The lower the average for a given description, the higher is its readability.

With respect to informativeness of descriptions, indication of product aspects was qualitatively coded on a scale of 1 (lowest) to 5 (highest), as with that of titles described earlier. Lexical density was measured as the ratio of the number of nouns to the total number of words (Stotsky, 1981; Willemsen et al., 2011).

With respect to reliability of descriptions, positivity and negativity were calculated using the Linguistic Inquiry and Word Count tool as the proportions of positive words and negative words respectively (Pennebaker et al., 2007).Theextent to which descriptions offered advice for decision-making and contained claims of expertise were both measured qualitatively by the coders on a scale of 1(lowest) to 5 (highest).

The qualitative coding approach was informed by prior works (Landis & Koch, 1977; Oh et al., 2013). In the pilot coding exercise, the coders coded a randomly selected subset of 100 reviews distributed across the six products. The mean pair-wise inter-coder agreement in terms of Cohen’s Kappa for the qualitatively coded measures ranged from 0.60 to 0.80, confirming a substantial degree of agreement beyond chance (McGinn et al., 2004). Ambiguities were resolved through discussion. In the final coding exercise, the coders independently coded the remaining reviews.

*3.3. Data Analysis*

Data were analyzed using hierarchical ordinary least squares moderated multiple regression. The dependent variablereview efficacy was measured as review readership and review helpfulness separately. To account for the positively skewed nature of review readership, logarithm transformation was employed (Chen & Lurie, 2013; Tabachnick&Fidell, 1996).

Each dependent variable had four hierarchical models of independent variables. Model 1 includedfour control variables, namely, product type (0 = search, 1 = experience), reviewer reputation (0 = novice, 1 = reputed), review star ratings, and square of review star ratings. These are known to be related to review efficacy (Kuan et al., 2015; Mudambi&Schuff, 2010; Zhu et al., 2014). Square of review star ratings was computed after mean centeringand standardizing to avoid multicollinearity (Aiken & West, 1991; Chang & Chuang, 2011; Cohen et al., 2003).

Model 2 included four variables related to titles of reviews.These were length, persuasiveness, product aspects, and lexical density.

Model 3 included eight variables related to descriptions of reviews. These were length, readability, product aspects, lexical density, positivity, negativity, advice and expertise. To account for the positively skewed nature of description length, logarithm transformation was employed (Chen & Lurie, 2013; Tabachnick&Fidell, 1996).

Model 4 included the interaction variables.Taking reviewer reputation as a moderator, the interaction variables were created by multiplying each of the 12 variables related to reviews (4 for titles + 8 for descriptions) with reviewer reputation. Prior to multiplication, all variables were mean centered and standardized (Aiken & West, 1991; Chang & Chuang, 2011; Cohen et al., 2003).The values of variance inflation factor confirmed that multicollinearity was not a problem.

**4. Results**

*4.1. Descriptive Statistics*

As stated earlier, of the 1,145 reviews in the final dataset, 630 were contributed by reputed reviewers while the remaining 515 reviews were submitted by novices. The totalnumber of helpful votes attracted by reputed reviewers was 70 (*Q3*) or above. In contrast, the total number of helpful votes attracted by novice reviewers was four (*Q1*)or below.

Table 1 presents the descriptive statistics of the dataset. With respect to review efficacy, readership attracted by reputed reviewers (*M* = 46.88, *SD* = 85.61) outnumbered that received by novices (*M* = 5.26, *SD* = 15.19). Moreover, the helpfulness of the reviews contributed by reputed reviewers (*M* = 0.88, *SD* = 0.18) generally exceeded that of the entries submitted by novices (*M* = 0.70, *SD* = 0.37).

**TABLE 1. Descriptive statistics (*M* ± *SD*).**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Full dataset (*N* = 1,145)** | **Reviews by reputed reviewers (*N* = 630)** | **Reviews by novice reviewers (*N* = 515)** |
| Rating | 4.02 ± 1.36 | 4.08 ± 1.28 | 3.96 ± 1.43 |
| Title length | 4.74 ± 2.94 | 5.69 ± 3.10 | 3.87 ± 2.48 |
| Title persuasiveness | 2.18 ± 0.84 | 2.32 ± 0.93 | 2.04 ± 0.72 |
| Title product aspects | 1.38 ± 0.73 | 1.54 ± 0.85 | 1.24 ± 0.57 |
| Title lexical density | 0.53 ± 0.26 | 0.51 ± 0.25 | 0.55 ± 0.27 |
| Desc. length | 193.91 ± 284.78 | 314.71 ± 365.91 | 82.24 ± 80.23 |
| Desc. readability | 6.87 ± 3.72 | 9.65 ± 3.96 | 6.87 ± 3.72 |
| Desc. product aspects | 3.13 ± 1.43 | 4.16 ± 1.20 | 3.13 ± 1.43 |
| Desc. lexical density | 0.44 ± 0.18 | 0.36 ± 0.16 | 0.44 ± 0.18 |
| Desc. positivity | 6.09 ± 4.46 | 4.05 ± 2.34 | 6.09 ± 4.46 |
| Desc. negativity | 1.20 ± 1.76 | 1.28 ± 1.11 | 1.20 ± 1.76 |
| Desc. advice | 3.32 ± 0.78 | 3.72 ± 0.79 | 3.32 ± 0.78 |
| Desc. expertise | 2.91 ± 0.56 | 3.15 ± 0.47 | 2.91 ± 0.55 |
| #Helpful votes | 21.69 ± 61.44 | 41.80 ± 82.88 | 3.11 ± 14.14 |
| Review readership | 25.25 ± 63.80 | 46.88 ± 85.61 | 5.26 ± 15.19 |
| Review helpfulness | 0.79 ± 0.31 | 0.88 ± 0.18 | 0.70 ± 0.37 |

*4.2. Inferential Statistics*

Table 2 and Table 3 present the regression results for readership and helpfulness of reviews respectively. In each table, there were four hierarchical models of independent variables comprising control variables, title-related variables, description-related variables, and interaction variables respectively.Based on the final model, the proposed research framework explained 53.30% variance in readership, and 29.10% variance in helpfulness of reviews.

The properties of titles were not related to review readership. Nonetheless, length(*β* = 0.10, *p*< 0.05) and lexical density of titles (*β* = 0.17, *p*< 0.001) showed positiveassociations with review helpfulness(Table 3, Model 4). These results show that attractiveness (length) as well as informativeness(lexical density) of titles have a bearing on review efficacy.

With respect to descriptions, while length (*β* = 0.08, *p*< 0.05) was positively related to review readership, positivity (*β* = -0.07, *p*< 0.01) was found to have a negative association (Table 2, Model 4). Moreover, decision-making advice (*β* = 0.08, *p*< 0.05),and expertise claims (*β* = 0.19, *p*< 0.001) were positively related to review helpfulness (Table 3, Model 4). Theseresults show that comprehensibility (length) as well as reliability (positivity, advice and expertise) of descriptions have a bearing on review efficacy.

With respect tothe moderating role of reputation, two interaction terms showed significant positive relation with review readership (Table 2, Model 4). These included descriptions’ readability scores (*β* = 0.14, *p*< 0.001),and the presence of decision-making advice (*β* = 0.14, *p*< 0.001). Specifically, the correlation between readability of descriptions and review readership was stronger for reputed reviewers (*r* = 0.14, *p*< 0.01) compared with novices (*r* = 0.06, *p*< 0.05). Additionally, the correlation between the extent to which descriptions offered decision-making advice and review readership was positive for reputed reviewers (*r* = 0.13, *p*< 0.05) yet non-significant for novices (*r* = 0.05, *p*> 0.05). These results show that the ways in which comprehensibility (readability)as well as reliability (advice) of descriptions are related to review efficacy are different for reputed and novice reviewers.

Moreover, two interaction terms showed significant negative relation with review helpfulness (Table 3, Model 4). These included titles’ lexical density (*β* = -0.10, *p*< 0.05) as well as the extent to which descriptions claimed expertise (*β* = -0.08, *p*< 0.05). Specifically, the correlation between lexical density of titles and review helpfulness was non-significant for reputed reviewers (*r* = -0.01, *p*> 0.05) yet positive for novices (*r* = 0.18, *p*< 0.001).Likewise, the correlation between the extent to which descriptions claimed expertise and review helpfulness was weaker for reputed reviewers (*r* = 0.11, *p*< 0.05) compared with novices (*r* = 0.23, *p*< 0.001). These results show that the ways in which informativeness of titles (lexical density) as well as reliability of descriptions (expertise) are related to review efficacy are different for reputed and novice reviewers.For all the significant moderations, differences in the nature of the correlations between reputed and novice reviewers are summarized in Table 4. Overall, the antecedents of review efficacy appear to be clouded by reviewer reputation.

**TABLE 2: Hierarchical moderated multiple regression results for review readership.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Model 1** | **Model 2** | **Model 3** | **Model 4** |
| Product type | 0.05\* | 0.06\* | 0.08\*\* | 0.06\*\* |
| Reputation | 0.66\*\*\* | 0.64\*\*\* | 0.51\*\*\* | 0.52\*\*\* |
| Rating | -0.09\* | -0.08\* | -0.05 | -0.05 |
| Rating2 | 0.10\*\* | 0.10\*\* | 0.11\*\* | 0.10\*\* |
| Title length |  | 0.07\* | 0.02 | 0.01 |
| Title persuasiveness |  | -0.06 | -0.06 | -0.06 |
| Title product aspects |  | 0.09\* | 0.08\* | 0.02 |
| Title lexical density |  | 0.02 | 0.01 | -0.01 |
| Desc. length |  |  | 0.13\*\*\* | 0.08\* |
| Desc. readability |  |  | 0.12\*\*\* | 0.02 |
| Desc. product aspects |  |  | -0.01 | -0.02 |
| Desc. lexical density |  |  | 0.06\* | 0.04 |
| Desc. positivity |  |  | -0.08\* | -0.07\*\* |
| Desc. negativity |  |  | -0.01 | 0.02 |
| Desc. advice |  |  | 0.05\* | -0.05 |
| Desc. expertise |  |  | -0.01 | 0.03 |
| Reputation x Title length |  |  |  | 0.01 |
| Reputation x Title persuasiveness |  |  |  | 0.01 |
| Reputation x Title product aspects |  |  |  | 0.04 |
| Reputation x Title lexical density |  |  |  | 0.04 |
| Reputation x Desc. length |  |  |  | 0.04 |
| Reputation x Desc. readability |  |  |  | 0.14\*\*\* |
| Reputation x Desc. product aspects |  |  |  | 0.04 |
| Reputation x Desc. lexical density |  |  |  | 0.01 |
| Reputation x Desc. positivity |  |  |  | -0.02 |
| Reputation x Desc. negativity |  |  |  | -0.04 |
| Reputation x Desc. advice |  |  |  | 0.14\*\*\* |
| Reputation x Desc. expertise |  |  |  | -0.03 |
| **Incremental R2** | **46.20%** | **0.70%** | **3.80%** | **2.60%** |
| **Total R2** | **46.20%** | **46.90%** | **50.70%** | **53.30%** |

*Note.* \*\*\* *p*< 0.001. \*\* *p*< 0.01, \* *p*< 0.05, *N* = 2,190. Model 1 included control variables, Model 2 included variables related to review titles, Model 3 included variables related to review descriptions, and Model 4 included interaction variables.

**TABLE 3: Hierarchical moderated multiple regression results for review helpfulness.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Model 1** | **Model 2** | **Model 3** | **Model 4** |
| Product type | 0.11\*\*\* | 0.11\*\*\* | 0.11\*\*\* | 0.11\*\*\* |
| Reputation | 0.25\*\*\* | 0.23\*\*\* | 0.14\*\*\* | 0.14\*\*\* |
| Rating | 0.22\*\*\* | 0.21\*\*\* | 0.20\*\*\* | 0.21\*\*\* |
| Rating2 | -0.13\*\* | -0.14\*\* | -0.13\*\* | -0.12\*\* |
| Title length |  | 0.08\* | 0.05 | 0.10\* |
| Title persuasiveness |  | 0.05 | 0.04 | 0.08 |
| Title product aspects |  | -0.01 | -0.01 | -0.04 |
| Title lexical density |  | 0.12\*\*\* | 0.11\*\*\* | 0.17\*\*\* |
| Desc. length |  |  | 0.04 | 0.05 |
| Desc. readability |  |  | 0.01 | 0.05 |
| Desc. product aspects |  |  | 0.06\* | 0.05 |
| Desc. lexical density |  |  | 0.00 | 0.06 |
| Desc. positivity |  |  | -0.01 | 0.01 |
| Desc. negativity |  |  | -0.01 | -0.02 |
| Desc. advice |  |  | 0.07\* | 0.08\* |
| Desc. expertise |  |  | 0.14\*\*\* | 0.19\*\*\* |
| Reputation x Title length |  |  |  | -0.07 |
| Reputation x Title persuasiveness |  |  |  | -0.07 |
| Reputation x Title product aspects |  |  |  | 0.06 |
| Reputation x Title lexical density |  |  |  | -0.10\* |
| Reputation x Desc. length |  |  |  | -0.01 |
| Reputation x Desc. readability |  |  |  | -0.05 |
| Reputation x Desc. product aspects |  |  |  | 0.01 |
| Reputation x Desc. lexical density |  |  |  | -0.02 |
| Reputation x Desc. positivity |  |  |  | -0.01 |
| Reputation x Desc. negativity |  |  |  | 0.02 |
| Reputation x Desc. advice |  |  |  | -0.02 |
| Reputation x Desc. expertise |  |  |  | -0.08\* |
| **Incremental R2** | **22.00%** | **1.50%** | **4.40%** | **1.20%** |
| **Total R2** | **22.00%** | **23.50%** | **27.90%** | **29.10%** |

*Note.* \*\*\* *p*< 0.001. \*\* *p*< 0.01, \* *p*< 0.05, *N* = 2,190. Model 1 included control variables, Model 2 included variables related to review titles, Model 3 included variables related to review descriptions, and Model 4 included interaction variables.

**TABLE 4. Difference in the nature of the correlations for the significant moderations.**

|  |  |  |
| --- | --- | --- |
| **Relation** | **Reputed** | **Novice** |
| Desc. readability 🡪 Review readership | Positive (stronger) | Positive (weaker) |
| Desc. advice 🡪 Review readership | Positive | Non-significant |
| Title lexical density 🡪 Review helpfulness | Non-significant | Positive |
| Desc. expertise 🡪 Review helpfulness | Positive (weaker) | Positive (stronger) |

**5. Discussion**

Three key findings are gleaned from the results. First, the antecedents of review readership are not necessarily identical to those of review helpfulness. For example, antecedents such as length and positivity of descriptions were significantly related to review readership (Table 2, Model 4) but showed non-significant associations with review helpfulness (Table 3, Model 4). Conversely, antecedents such as lexical density of titles and decision-making advice in descriptions were significantly related to review helpfulness (Table 3, Model 4) but showed non-significant associations with review readership (Table 2, Model 4). As hinted in the growing body of literature (Kuan et al., 2015; Salehan& Kim, 2016), this paper confirms that the factors that make a review likely to be voted as helpful cannot be assumed to stimulate readership. This in turn highlights the merit of investigating the antecedents of review readership and review helpfulness separately.

Second, both titles and descriptions have a significant bearing on review efficacy. With respect to antecedents related to titles, little scholarly works have been done thus far. Nonetheless, by finding significant relations between several title-related antecedents and review efficacy (e.g., Title lexical density in Table 3, Model 4), this paper supports the presumption that titles play crucial communicative roles in reviews (Ascaniis&Gretzel, 2012; Salehan& Kim, 2016). Even though short titles were expected to be viewed favorably (Ascaniis&Gretzel, 2012; Dor, 2003), it was surprising to find that users preferred lengthy ones. Perhaps, short titles lack details that users were looking for. Additionally, the extent to which titles were lexically dense were positively related to review helpfulness. This suggests that reviews with lexically dense titles are necessary for heightening review efficacy.

With respect to antecedents related to descriptions, lengthy entries were likely to attract readership. Moreover, positivity was found to deter readership(Table 2, Model 4). Such possibilities have been echoed in prior works (Chen & Lurie, 2013; Salehan& Kim, 2016). Consistent with the literature (Mackiewicz& Yeats, 2014), decision-making advice and expertise claims in descriptions made reviews likely to be voted as helpful (Table 3, Model 4).

Between titles and descriptions, the former was found to explain relatively lesser variance in review efficacy. Titles explained 0.70% variance in review readership (Table 2, Model 2),and 1.50% variance in review helpfulness (Table 3, Model 2). In contrast, descriptions accounted for 3.80% variance in review readership (Table 2, Model 3), and 4.40% variance in review helpfulness (Table 3, Model 3). This means that even though titles play a role in determining review efficacy, descriptions remain more impactful.

Third, the antecedents of review efficacy can be clouded by reviewer reputation. Research on source credibility has consistently documented that information acceptance depends on perceived credibility of the source (Banerjee et al., 2017; Wan, 2015). Hence, it was expected that reviews’ efficacy was dependent on reviewers’ reputation. Interestingly, the interactions between reviewer reputation and some of the antecedents of review efficacy were positive for review readership (Table 2, Model 4) yet negative for review helpfulness (Table 3, Model 4). This suggests that users rely on reviewer reputation as a heuristic cue to decide whether to read a given review (Kuan et al., 2015; Scholz& Dorner, 2013). That is why the relation between descriptions’ readability scores and review readership as well as that between decision-making advice in descriptions and review readership were more positive for reputed reviewers vis-à-vis novices, thereby lending support for the Matthew effect and the Ratchet effect (Merton, 1968; Wan, 2015).

However, after deciding whether to read a given review, users perhaps resorted to an informational approach of information processing rather than a normative approach (Deutsch & Gerard, 1955; Petty &Cacioppo, 1986).This in turn might have enabled them to be quite stringenttoward reviews posted by reputed reviewers but lenient toward entries submitted by novices. As users were drawn to reading reviews by reputed reviewers, their expectation was perhaps sky high. When the expectation was not met, they did not rate reviews favourably. On the other hand, when users read reviews submitted by novice reviewers, their expectation was low. As a result, decent reviews submitted by novices might have pleasantly surprised reviewers, and prompted them to rate the entries as being helpful. This could be why the relation between titles’ lexical densityand review helpfulness, that between decision-making advice in descriptions and review helpfulness, as well as that between expertise claims in descriptions and review helpfulness were less positive for reputed reviewers vis-à-vis novices.

**6. Conclusion**

This paper investigated the antecedents of review efficacy on Amazon.com in terms of readership and helpfulness of reviews. The antecedents included aspects related to titles as well as descriptions of reviews. The ways in which the relation between the antecedents and review efficacy could be clouded by the reputation of reviewers were also analyzed.

*6.1. Addressing the RQs*

The four RQs that were submitted for investigation can be addressed as follows:

**RQ 1.** How do the properties of review titles relate to review efficacy?

Length and lexical density of titles were related to review helpfulness. Thus, attractiveness (length) as well as informativeness (lexical density) of titles had a bearing on review efficacy.

**RQ 2.** How do the properties of review descriptions relate to review efficacy?

Lengthand positivity of descriptions were related to review readership. In addition, decision-making advice, and expertise claims of descriptions were related to review helpfulness. Thus, comprehensibility (length) as well as reliability (positivity, advice and expertise) of descriptions had a bearing on review efficacy.

**RQ 3.** How does reviewer reputation moderate the relation between the properties of review titles and review efficacy?

Reviewer reputation moderated the relation between lexical density of titles and review helpfulness. Specifically, the relation between lexical density of titles and review helpfulness was stronger for novices than for reputed reviewers. Thus, the relation between informativeness of titles (lexical density) and review efficacy differed between reputed and novice reviewers.

**RQ 4.** How does reviewer reputation moderate the relation between the properties of review descriptions and review efficacy?

Reviewer reputation moderated the following three relations pertaining to descriptions: the relation between readability and review readership, that between decision-making advice and review readership, as well as that between review expertise claims and review helpfulness. With respect to review readership, the relations were stronger for reputed reviewers than for novices. However, with respect to review helpfulness, the relations were stronger for novices. Thus, the relation between comprehensibility (readability) as well as reliability (advice and expertise) of descriptions and review efficacy differed between reputed and novice reviewers.

*6.2. Limitations and Future Research*

These findings should be viewed in light of two limitations that future research should address.First, the dataset did not include reviews for products such as backpacks that serve as both search and experience concurrently (Girard & Dion, 2010). Future research could include such product categories to validate the generalizability of the proposed research framework.

Second, this paper conceptualized review readership as the frequency with which reviews are voted ignoring lurkers who might read the entries without voting. Future research could explore other methodological approaches such as interviews to identify factors that motivate users to vote reviews as either helpful or unhelpful, and those that deter users from voting.

*6.3. Theoretical Contributions*

The theoretical contributions of this paper are three-fold. First, it pushes the frontiers of knowledge related to review efficacy on Amazon.com. It extends works such as Chua and Banerjee (2016) by analyzing not only review helpfulness but also review readership on the website. It augments works such as Kuan et al. (2015) by taking into account antecedents related to both titles and descriptions of reviews. Furthermore, itadvancesworks such as Salehanand Kim (2016) by considering both quantitative (e.g., length) and qualitative (e.g., expertise)antecedents of review efficacy.The outcome is an empirically validated research framework more comprehensive than those found in previous works (Figure 1).

Second, this paper represents one of the earliest attempts to conceptualize the different communicative roles played by titles and descriptions of reviews. Drawing from the tacit evidences available in prior works (Ascaniis&Gretzel, 2012; Dor, 2003; Korfiatis et al., 2012; Mackiewicz& Yeats, 2014; Willemsen et al., 2011), it argues that titles are valued for their attractiveness and informativeness while descriptions for their comprehensibility, informativeness and reliability.Titles should be attractive to catch users’ attention. They should be sufficiently informative and succinct to inspire confidence. Conversely, descriptions need to be comprehensible so that they can be easily processed. They should be informative and reliable. This is because once users start reading descriptions, they expect to find relevant details to help them make purchase-decisions.

Third, this paper dovetails the literature by examining how reputed reviewers differ from novices in clouding the antecedents ofreview efficacy. Drawing from the dual process theory (Deutsch & Gerard, 1955; Petty &Cacioppo, 1986) as well the Matthew effect and the Ratchet effect (Merton, 1968; Wan, 2015), it demonstrates that the relation between the antecedents and review efficacy are not necessarily comparable for reputed reviewers and novice reviewers.Specifically, the paper shows that reviewer reputation is used as a heuristic cue to read reviewsbutnot to vote reviews as helpful. Users perhaps decide to read reviews submitted by reputed reviewers in order to economize the time for obtaining high quality information. They seem to evaluate the helpfulness of such reviews stringently. In contrast, reviews submitted by novices are not guaranteed to attract readership. Nonetheless, if read, the helpfulness of such entries is evaluated leniently.

*6.4. Implications for Practice*

On the practical front, this paper offers implications for reviewers. On the one hand, newbies joining review websitescould expedite the process of earning reputation in the online community by including lexically dense titles, and incorporating decision-making advice as well as claims of expertise in descriptions of their reviews. Such writing tactics seem to enhance the chances of reviews being voted as helpful. On the other hand, this paper recommends reputed reviewers to submit reviews of sufficient quality befitting of their status in the community. Else, their reviews might fail to attract helpfulness votes despite attracting readership.

For review websites, this paper offers insights into why some reviews are read while others remain ignored, and why some reviews are perceived as being helpful while others are not. These findings could be leveraged to formulate strategies in order to enhance review efficacy. Specifically, these websites could guide reviewers to write reviews in ways so as to enhance their chances of being read and voted as being helpful. Additionally, they could encourage users to read and evaluate reviews.Furthermore, review websites could find ways to facilitate a more even playing field for both reputed and novice reviewers so that entries from both attract comparable readership. These could improve the use of the review system for online shoppers as well as reviewers.

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