When does electronic word-of-mouth matter? A study of consumer product reviews

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Abstract

Online consumer product reviews, a form of electronic word-of-mouth (eWOM), have attracted increased attention from researchers. This paper examines the persuasiveness of eWOM. Drawing on regulatory focus theory, the authors propose that the consumption goals that consumers associate with the reviewed product moderate the effect of review valence on persuasiveness. Data from lab experiments and actual online retailers suggest that consumers who evaluate products associated with promotion consumption goals perceive positive reviews to be more persuasive than negative ones (i.e., a positivity bias). Conversely, consumers who evaluate products associated with prevention consumption goals perceive negative reviews to be more persuasive than positive ones (i.e., a negativity bias).

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1. Introduction

In recent years, a growing number of consumers publish product/service reviews on the Internet. This new form of electronic word-of-mouth (eWOM) has received increased attention from researchers. Prior studies examine what leads to eWOM (e.g., Hennig-Thurau et al., 2004; Ho and Dempsey, in press) and how eWOM affects the business bottom line, including product sales (e.g., Chevalier and Mayzlin, 2006; Liu, 2006), customer value and loyalty (Gruen et al., 2005), and the success of new product introductions (e.g., Clemons et al., 2006). Yet few studies, with two noted exceptions (i.e., Park and Lee, 2009; Sen and Lerman, 2007), focus explicitly on how users of eWOM evaluate its usefulness.

The objective of this paper is to examine the effects of eWOM valence on eWOM persuasiveness. Drawing on regulatory focus theory (Higgins, 1997), which distinguishes between promotion and prevention goals, the authors propose that a contextual variable—the consumption goal that consumers associate with the reviewed product—moderates the effect of review valence on persuasiveness. Specifically, in evaluating products closely associated with a promotion consumption goal (e.g., photo-editing software used to create ideal pictures), consumers perceive positive reviews to be more persuasive than negative ones. In contrast, in evaluating products closely associated with a prevention consumption goal (e.g., antivirus software used to avoid a computer crash), consumers perceive negative reviews to be more persuasive than positive ones. Data from both lab experiments (Study 1) and actual online retailers (Study 2) strongly support the proposed relationships.

This paper intends to make several contributions to marketing literature. First, this paper extends WOM research to a virtual environment. Traditional WOM literature often relies on social cues (e.g., relationship to WOM communicator) to explain WOM persuasiveness (Knapp and Daly, 2002). Yet, in a virtual environment, these contextual cues are unavailable (Gupta and Harris, in press). The lack of social cues in eWOM forces consumers to evaluate eWOM persuasiveness solely based on content characteristics (Walther, 1996). This research adds to the literature by examining eWOM evaluation processes in the absence of social cues.

Second, the findings of this paper clarify, in part, the equivocal findings regarding the effects of WOM valence on persuasiveness. Some studies find that consumers perceive negative messages, in general, to be more persuasive than positive ones (e.g., Arndt, 1967; Laczniak et al., 2001; Mizerski, 1982; Yang and Mai, in press). Other studies, however, find rather the opposite (e.g., Gershoff et al., 2003; Skowronski and Carlson, 1987, 1988). In light of these mixed findings, researchers have called for the examination of additional variables (Gershoff et al., 2003). Drawing on regulatory focus theory, this paper introduces a new contextual variable and aims to bridge the gap in prior literature.

2. Conceptual framework

Typically, consumers evaluate product information (e.g., product reviews) in order to help them fulfill their consumption goals. In this

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process, self-regulation is likely to affect how consumers evaluate information. Self-regulation refers to the processes through which people set their goals, choose behavioral strategies to achieve these goals, and assess progress toward these goals (Carver and Scheier, 1998). According to regulatory focus theory (Higgins, 1997), people strive to achieve their goals through two distinct modes of self-regulatory system: promotion and prevention.

When people focus on their “ideal goals” (e.g., aspirations), they develop the promotion system and rely on eagerness behavioral strategies to move closer toward positive end states. In contrast, when people focus on their “ought goals” (e.g., obligations), they develop the prevention system and rely on vigilance strategies to stay away from negative end states. Although people usually possess both regulatory systems, they tend to have predispositions such that one regulatory system is dominant in directing behaviors. In certain situations, however, people can override their predispositions, and activate a regulatory system that better fits with the contextual goal. The contextual change of self-regulatory system provides flexibility in self-control strategies. In fact, research suggests that regulatory focus is more of a contextual motivational state as opposed to a strict motivational trait characterizing an individual’s personality (Pham and Avnet, 2004).

Prior research suggests that consumers tend to compartmentalize products associated with promotion or prevention consumption goals into separate mental categories (Zhou and Pham, 2004). Creating separate categories, each with its own goals, provides a system that helps consumers allocate resources (e.g., time, attention) to achieve conflicting goals. Thus, the compartmentalization makes the control of consumption behaviors more effective (Thaler, 1999). For example, with respect to financial decisions, Zhou and Pham (2004) suggest that consumers rely on the promotion system to regulate the achievement of financial gains and the prevention system to regulate the avoidance of financial losses. Over time, through repeated product usage and/or exposure to product usage information, consumers learn to mentally associate products with distinct promotion or prevention goals. For instance, common stocks are more representative of promotion, whereas certificates of deposit are more representative of prevention.

In the context of product review evaluation, consumers may activate the regulatory system that is congruent with the consumption goal. More specifically, consumers may develop two separate systems to process information: one that calls on the promotion system to identify useful information for achieving desirable outcomes and the other that calls on the prevention system to identify useful information for avoiding undesirable outcomes. In effect, the consumption goal that consumers associate with a product operates as a contextual variable to activate consumers’ regulatory foci.

Further, the activated regulatory foci affect the way that consumers perceive product related information. Numerous prior studies show that different self-regulatory systems can generate biases in consumers’ perceptions (e.g., Aaker and Lee, 2001; Chernov, 2004; Kim, 2006; Lee and Aaker, 2000, 2004; Pham and Avnet, 2004; Poels and Dewitte, 2007; Yeo and Park, 2006). For example, Aaker and Lee (2001) find that consumers with promotion (prevention) foci perceive benefit-framed ads as more (less) persuasive than risk-framed ads. Pham and Avnet (2004) reveal that people with promotion foci perceive affective information (e.g., feelings experienced during an ad exposure) as more diagnostic than substantive information (e.g., the strength of ad claims).

In this research, the authors argue that consumers’ regulatory foci, activated by a specific consumption goal, motivate these consumers to give different weights to positively vs. negatively valenced messages. Consumers with promotion foci are more concerned with advancement and achievement through product consumption. Positive product reviews provide information about satisfactory experiences with the product, and thus represent opportunities to attain positive outcomes. These reviews are more congruent with consumers’ promotion foci and, therefore, are likely to be more persuasive than negative ones (i.e., a positivity bias). On the other hand, consumers with prevention foci are more concerned with the avoidance of negative outcomes. Negative product reviews provide information about dissatisfactory experiences with the product, and thus represent opportunities to avoid negative outcomes. These reviews are more congruent with consumers’ prevention foci and are likely to be more persuasive than positive ones (i.e., a negativity bias). Thus, the authors hypothesize:

H1a. For products associated with promotion consumption goals, positive reviews are more persuasive than negative ones.

H1b. For products associated with prevention consumption goals, negative reviews are more persuasive than positive reviews.

3. Pretests

The first pretest aims to identify products associated with promotion and prevention consumption goals. Twenty-three college students evaluate 35 different product stimuli and rate each product on two 7-point scales, anchored by: not enhancing/very enhancing and not protecting/very protecting. In the pretest, the authors define products with enhancing characteristics as “products that increase fun in life; these are things you like to have in order to feel good/happy”, and products with protecting characteristics as “products that increase safety in life; these are things you need to have in order to avoid negative consequences.” The goal is to identify stimuli with high discriminating scores on the promotion/prevention dimensions. The product stimuli selected for the main study are: 1) photo-editing software which is associated primarily with promotion goals ($M_{enhancing} = 5.7$, $M_{protecting} = 2.3$, $p < .001$) and 2) anti-virus software which is mainly associated with prevention goals ($M_{protecting} = 6.4$, $M_{enhancing} = 3.0$, $p < .001$).

The second pretest examines the assumption that products associated with different consumption goals can activate different regulatory foci. Seventy-five college students evaluate a new software product and then answer a short questionnaire. The authors randomly assign participants to one of two conditions. Half of the participants examine a photo-editing software product (i.e., promotion consumption goals condition) and the other half examines an anti-virus software product (i.e., prevention consumption goals condition).

The questionnaire includes 10 items measuring individuals’ regulatory tendencies in a shopping context (adapted from Higgins et al., 1997; Yeo and Park, 2006). Five items measure participants’ promotion orientation (i.e., “In evaluating this product, I am more concerned about achieving success rather than avoiding failure.” “When I evaluate this product, I first consider what is good about the product.” “When evaluating this product, I consider achieving positive consequences from using it.” “If I buy this product, I will feel excited about the purchase.” “When evaluating this product, I first consider aspects of this product that I like.” Cronbach’s alpha = .79). The other five items measure participants’ prevention orientation (i.e., “In evaluating this product, I am more concerned about avoiding failure rather than achieving success.” “When I evaluate this product, I first consider what is bad about the product.” “When evaluating this product, I consider preventing negative consequences from using it.” “If I buy this product, I will feel safe about the purchase.” “When evaluating this product, I first consider aspects of this product that I dislike.” Cronbach’s alpha = .76). The dependent variable is the difference between the average of promotion items and the average of prevention items (Higgins et al., 2000). This variable indicates an individual’s overall tendency toward promotion orientation. A one-way ANOVA reveals a significant difference in the regulatory focus of participants who examine the anti-virus software product ($M = -0.5$ vs. those who examine the photo-editing software product ($M = 0.5$; $F(1, 71) = 6.45$, $p = .01$). These results provide evidence that consumers experience momentary states of promotion (prevention) focus after they examine products associated with promotion (prevention) consumption goals.
4. Study 1

This study tests hypotheses H1a and H1b. The authors expect that consumers will perceive positive reviews as more persuasive than negative ones for a product associated with promotion consumption goals. Conversely, for a product associated with prevention goals, consumers will perceive negative reviews as more persuasive than positive ones.

4.1. Method

The study uses a 2 (consumption goals: promotion vs. prevention) × 2 (review valence: positive vs. negative) between-subject design with a sample size of 150 undergraduate students. All study sessions take place in computer labs where participants can browse an ostensible Amazon.com website that the authors build for this study.

Participants first read an online shopping scenario involving the purchase of a software program. The product stimuli are two fictional brands: Digital Studio Professional 2007 (photo-editing program) in the promotion condition and E-Secure Professional 2007 (anti-virus program) in the prevention condition. After reading the scenario, participants click on a link to an ostensible Amazon.com page and examine the product and its reviews. Amazon.com is appropriate for this study for two reasons. First, this website offers a more realistic environment for the experiment compared to a fictional website because most participants are very familiar with this online retailer. Second, as a consequence of the retailer’s popularity, participants may examine products displayed on Amazon.com more naturally and may perceive related reviews as more credible than if examining the same products and reviews offered by a fictional online retailer.

Following the standard format of Amazon.com, the authors use four different Web pages for each of the four conditions. Across these pages, key attributes, including the product price, number of product features, Web page length, and number of graphics and links, remain constant. In each condition, participants see a picture of the product together with the price and shipping information, followed by a short product description, product features, and three reviews: two filler reviews and the focal review. Each page contains three reviews rather than one in order to simulate a more realistic online shopping environment. The filler reviews rate the product with three stars out of five and include a very broad product comment (e.g., “This product does what it is supposed to do”). In a pretest, respondents rate the filler reviews for the two products as moderately positive on a 7-point scale anchored by negative/positive ($M_{anti-virus} = 4.5$, $M_{photo-editing} = 4.8$, $p > .10$).

The positive (negative) focal review gives the product a rating of five (one) and describes six positive (negative) product features (e.g., ease of installation and use, effectiveness at protecting against viruses or editing pictures, compatibility with other software). All four focal reviews are similar in length, the number of facts, and the reviewer’s self-rated expertise. After examining the product and consumer reviews displayed on Amazon.com, participants complete a short questionnaire in which they evaluate one ostensibly randomly selected review (i.e., the focal review) on several dimensions. Finally, participants answer a few demographic questions.

4.1.1. Manipulation check

In order to assess the effectiveness of the review valence manipulation, participants rate the focal review on a single item scale from 1 (“negative”) to 7 (“positive”). As expected, the results from a 2 × 2 ANOVA with review valence and product category as independent variables show only a significant main effect of review valence, $F(1, 148) = 1265.76$, $p < .001$. That is, participants perceive the positive reviews to be more positive ($M_{anti-virus} = 6.5$, $M_{photo} = 6.5$) than the negative reviews ($M_{anti-virus} = 1.8$, $M_{photo} = 1.9$) across both products.

4.1.2. Dependent variable

To measure participants’ perception of the review persuasiveness, the authors use four 7-point semantic differential scales anchored by persuasive/not persuasive, convincing/unconvincing, important to me/not important to me, and helpful/not helpful (adapted from Burton and Lichtenstein, 1988; Mitchell and Olson, 1981; Pham and Avnet, 2004), and then average these four items to form a composite measure ($r_{Cronbach's alpha} = .83$). Higher scores reflect higher evaluations of perceived persuasiveness. The correlation matrix appears in Table 1.

4.2. Results

The results from a 2 × 2 ANOVA support the hypothesized interaction between review valence and consumption goals on perceived review persuasiveness, $F(1, 146) = 13.70$, $p < .001$, $\eta^2 = .0849$. None of the main effects are statistically significant at the 10% level. Table 2 shows the cell means for perceived review persuasiveness. Significant simple effects show that participants perceive the positive review to be more persuasive ($M = 5.8$) than the negative review ($M = 5.1$, $F(1, 146) = 9.52$, $p < .05$, $\eta^2 = .06$) when they evaluate a product associated with promotion consumption goals (i.e., the photo-editing software). On the other hand, participants perceive the negative review to be more persuasive ($M = 5.5$) than the positive review ($M = 5.0$, $F(1, 146) = 4.62$, $p < .05$, $\eta^2 = .03$) when they examine a product associated with prevention consumption goals (i.e., anti-virus software). These findings support both H1a and H1b. In sum, when evaluating product reviews, consumers show a positivity bias for products associated with promotion consumption goals and a negativity bias for products associated with prevention goals. These findings extend prior literature on the congruence between regulatory focus and biased information evaluation (e.g., Aaker and Lee, 2001; Keller, 2006).

5. Study 2

Study 2 examines consumer product reviews on Amazon.com to replicate the findings of Study 1. Study 2 extends Study 1 in two meaningful ways. First, unlike Study 1 in which the dependent variable is consumer perception, Study 2 uses a behavioral dependent variable—consumers’ votes on review helpfulness. Second, Study 1 is based on the data from controlled experiments, whereas Study 2 is based on the data from an actual retail website.

5.1. Data

For the purpose of this research, Amazon.com appears to be a good source to collect data. Amazon.com hosts one of the most popular forums to post consumer reviews. To review a product on Amazon.com, a consumer first gives an overall assessment using star ratings (from one to five), and then, in the content of the review, the consumer elaborates on the reasons for the assigned stars. After a review is posted, readers can rate the helpfulness of this review by answering the question “Is this review helpful to you?—Yes or No.” Over time, Amazon.com has accumulated a large number of product reviews as well as the helpfulness ratings of these posted reviews. Both types of data are instrumental to this research.

Table 1

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>SD</th>
<th>Convincing</th>
<th>Important to me</th>
<th>Helpful</th>
</tr>
</thead>
<tbody>
<tr>
<td>Persuasive</td>
<td>5.6</td>
<td>1.28</td>
<td>0.57</td>
<td>0.37</td>
<td>0.53</td>
</tr>
<tr>
<td>Convincing</td>
<td>5.5</td>
<td>1.17</td>
<td>1.00</td>
<td>0.36</td>
<td>0.70</td>
</tr>
<tr>
<td>Important to me</td>
<td>4.9</td>
<td>1.45</td>
<td>1.00</td>
<td>0.50</td>
<td>0.60</td>
</tr>
<tr>
<td>Helpful</td>
<td>5.6</td>
<td>1.23</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
</tbody>
</table>
that measures obtained from coding the review content are very noisy content. Prior research using similar data from Amazon.com indicates number of stars as a surrogate measure for the valence of review In this research, without analyzing review content, the authors use the number of stars a consumer uses as the overall assessment of a product.

5.3. Results
According to Table 4, the coefficient estimate for the interaction term (Consumption goals × Star ratings) is 0.42 (p < 0.001). This result suggests a strong moderating effect of consumption goals on the relationship between review valence and persuasiveness. Given the dummy variable coding (1 for promotion consumption goals and 0 for prevention consumption goals), the authors decompose the interaction effect into two simple effects: a) the effects of Star ratings for products associated with promotion consumption goals (−0.26 + 0.42 = 0.16), and b) the effect of Star ratings for products associated with prevention consumption goals (−0.26). The positive effect of review valence (0.16) suggests that, for products associated with promotion goals, an increase in Star ratings leads to a greater probability that consumers find a review as helpful (i.e., a positivity bias). Conversely, the negative effect of review valence (−0.26) indicates that, for products associated with prevention goals, an increase in Star ratings leads to a smaller probability that consumers find a review as helpful (i.e., a negativity bias). These results support H1a and H1b. Fig. 1 depicts this interaction effect with ln (odds ratio) as the dependent measure and Review length at its mean rating of a review. Table 3 presents the summary statistics of key variables.

5.2. Model
The dependent measure in this study is a dichotomous variable (consumers voted either “Yes” or “No” to the question “Is this review helpful to you?”). A binary logit model is appropriate in this context to model the likelihood that a consumer finds a review helpful. Specifically, in the modeling exercise, the authors suggest that three types of effect, namely product specific effect (e.g., the consumption goals associated with the product), review specific effect (e.g., review valence), and the interaction between review valence and product consumption goals, may determine review helpfulness.

In the process of model development, the initial model includes 7 independent variables (Sales rank, Number of available reviews of each product, Lifetime of review, Consumption goals, Star ratings, Consumption goals × Star ratings, and Review Length). Then, the authors gradually reduce the number of independent variables in order to identify the most parsimonious yet adequate model specification. The model selection process relies on several criteria: likelihood ratio test, AIC and SC statistics, and the percentage of concordant classification. The final model includes only four independent variables. Table 4 presents the estimates of this model.

The emphasis of the modeling exercise is the interaction term Consumption goals × Star ratings. Across different model specifications in the model development, the coefficient estimates for this interaction term are consistent (both in direction and effect size), suggesting the robustness of the results. In addition, model estimates obtained from different sub-samples (e.g., top and bottom 5 products among the 25 best sellers) are, in general, consistent with estimates obtained from the entire sample. The authors, therefore, base their conclusions on the estimates of the final model using the entire sample.

Table 3
Data description.

<table>
<thead>
<tr>
<th></th>
<th>Anti-virus software</th>
<th>Photo-editing software</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average stars</td>
<td>2.6</td>
<td>3.6</td>
</tr>
<tr>
<td>Average number of helpfulness ratings</td>
<td>10.6</td>
<td>19.4</td>
</tr>
<tr>
<td>Average number of typed characters</td>
<td>851.8</td>
<td>795.8</td>
</tr>
<tr>
<td>Average review lifetime (in days)</td>
<td>279.3</td>
<td>402.0</td>
</tr>
<tr>
<td>% of reviews without helpfulness ratings</td>
<td>5.2%</td>
<td>7.5%</td>
</tr>
<tr>
<td>Total number of product reviews</td>
<td>1265</td>
<td>752</td>
</tr>
</tbody>
</table>

Note: Standard deviations are reported in parentheses; “p < 0.05, “p < 0.01.

In addition, product reviews on Amazon.com do not appear to be heavily censored. Among popular retail websites (e.g., Amazon.com, circuitcity.com, buy.com, dell.com, and target.com), policies regarding review publishing are purposely vague about censorship. For example, Dell Inc.’s policy states that the company “reserves the right to remove or to refuse to post any (review) submission for any reason.” One author, however, has extensive experience of writing reviews online. Amazon.com has published and maintained all of this author’s reviews (including very negative ones). Based on this author’s judgment, Amazon.com appears to interfere with review publishing at a low level.

Consistent with Study 1, Study 2 examines two product categories: photo-editing software and anti-virus software. Within each product category, Study 2 includes all the product reviews of 25 best sellers. There are two considerations in using the best sellers, as opposed to a random sample of products. First, products chosen at random are likely to have a small number of product reviews and even a smaller number of helpfulness ratings, because product reviews concentrate on a small number of popular products. Second, collecting reviews from randomly selected products is, in effect, stratified random sampling, which gives more representation to products but less representation to product categories.

For each product review, the authors gather information for seven variables. 1) Sales rank: product ranks according to dollar sales in the category. 2) The number of available reviews of each product: the total number of product reviews to date since the introduction of the product. 3) Lifetime of a review: the longevity (in days) between the date of review publication and the date of data collection. 4) Consumption goals: a dummy indicator that turns to 1 for photo-editing software (i.e., promotion consumption goals) and 0 for anti-virus software (i.e., prevention consumption goals). 5) Star ratings: the number of stars a consumer uses as the overall assessment of a product. In this research, without analyzing review content, the authors use the number of stars as a surrogate measure for the valence of review content.

In the process of model development, the initial model includes 7 independent variables (Sales rank, Number of available reviews of each product, Lifetime of review, Consumption goals, Star ratings, Consumption goals × Star ratings, and Review Length). Then, the authors gradually reduce the number of independent variables in order to identify the most parsimonious yet adequate model specification. The model selection process relies on several criteria: likelihood ratio test, AIC and SC statistics, and the percentage of concordant classification. The final model includes only four independent variables. Table 4 presents the estimates of this model.

In this research, without analyzing review content, the authors use the number of stars a consumer uses as the overall assessment of a product. Drawing a simple random sample of all the published reviews is, however, extremely difficult. Given these considerations, product reviews of best sellers reasonably represent the population of all the reviews in a product category.

Table 2
Results of Study 1.

<table>
<thead>
<tr>
<th>Promotion consumption goal</th>
<th>Prevention consumption goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negative review (n = 38)</td>
<td>Positive review (n = 37)</td>
</tr>
<tr>
<td>Positive vs. negative review</td>
<td>Positive review (n = 40)</td>
</tr>
<tr>
<td>Positive vs. negative review</td>
<td>Positive review (n = 35)</td>
</tr>
<tr>
<td>Review persuasiveness</td>
<td>Review persuasiveness</td>
</tr>
<tr>
<td>(1.19)</td>
<td>(1.94)</td>
</tr>
<tr>
<td>(0.23)</td>
<td>(0.87)</td>
</tr>
<tr>
<td>(0.97)</td>
<td>(0.23)</td>
</tr>
</tbody>
</table>

Note: Standard deviations are reported in parentheses; “p < 0.05, “p < 0.01.

The dependent measure in this study is a dichotomous variable (consumers voted either “Yes” or “No” to the question “Is this review helpful to you?”). A binary logit model is appropriate in this context to model the likelihood that a consumer finds a review helpful. Specifically, in the modeling exercise, the authors suggest that three types of effect, namely product specific effect (e.g., the consumption goals associated with the product), review specific effect (e.g., review valence), and the interaction between review valence and product consumption goals, may determine review helpfulness.

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level (830 characters). Different values in Review length move both lines in Fig. 1 in the same direction but will not change their interaction.

In terms of effect size, the results suggest that, for products associated with promotion goals, a one-star increase in review rating increases the odds ratio by about 17% (exp(0.16)–1 = 0.17), whereas for products associated with prevention goals, the same change decreases the odds ratio by 23% (exp(–0.23)–1 = 0.23). In comparison, Review length, as a control variable, has a positive effect on review persuasiveness. A one-hundred-character addition in Review length increases the odds ratio by 5.13%.

In sum, the above results suggest that the consumption goals associated with a product moderate the effect of review valence on persuasiveness. Together, the results of Studies 1 and 2 offer strong empirical evidence from both inside and outside the lab setting to support H1a and H1b. Next, the authors discuss the implications of these findings.

6. General discussion

6.1. Conclusions and discussion

From the perspective of eWOM users, this paper explains how consumers evaluate valenced product reviews and how this evaluation relates to review persuasiveness. The results of this research show that consumers do not give equal weights to positive and negative product reviews. Rather, the consumption goals that consumers associate with the reviewed product trigger consumers’ regulatory foci, which, in turn, bias consumers’ evaluations of positively and negatively valenced product reviews. For products associated with promotion consumption goals, consumers show a positivity bias, whereby they rate positive reviews as more persuasive than negative ones. Conversely, consumers show a negativity bias for products associated with prevention consumption goals.

Word-of-mouth, online or off-line, is a form of interpersonal interaction. Prior research is inconclusive regarding the effects of message valence on persuasiveness with both positivity and negativity biases reported (e.g., Herr et al., 1991; Skowronski and Carlston, 1987). Some recent studies examine boundary condition variables (e.g., consumers’ prior impression, review extremity, product category) in order to shed light on these equivocal findings (e.g., Gershoff et al., 2003; Park and Lee, 2009; Sen and Lerman, 2007). The findings of this paper add to this growing body of literature by showing that consumer regulatory focus also matters. In the domain of product reviews, this research demonstrates that the moderation effect of product consumption goals partly explain the mixed effects of message valence on persuasiveness.

Throughout the paper, the authors are careful in describing the notion of consumption goals associated with a product. These goals are in the eyes of the consumer. Although the two types of consumption goals (i.e., promotion and prevention) can sometimes overlap in a product, this research focuses on situations where one of the two goals is dominant. Future research can examine the situation where one product closely associates with both promotion and prevention consumption goals. For example, the usage of a laptop computer may include both personal entertainment (i.e., a promotion goal) and backing up critical data (i.e., a prevention goal).

The authors draw conclusions based on the findings from two software products. Future research may replicate the findings of this paper using data from other product categories. This research does not examine the effects of review valence on consumers’ product attitude (e.g., Lacznia et al., 2001), product choice (e.g., Gupta and Harris, in press), or post-purchase attitude (e.g., Bone, 1995). Instead, this research examines a product review’s persuasiveness or usefulness for eWOM users. Lastly, in Study 2, the large sample size of collected product reviews increases the statistical power to reject the null hypothesis, which may raise the possibility of statistical significance but practical insignificance.

6.2. Managerial implications

The Internet has greatly empowered consumers in their ability to gather and disseminate product related information. Today, consumers can easily access peer-generated product information around the globe and can also influence numerous consumers by voicing their own experiences (Ward and Ostrom, 2003). Researchers who are aware of this new phenomenon call for new knowledge to understand consumer behavior in virtual communities and, more importantly, how firms can use this knowledge (Laroche, in press). This research attempts to explain eWOM usefulness in the eyes of consumers. The findings of this research offer implications to help managers embrace the notion of “consumer advocacy” in that firms should strive to provide useful and complete information to consumers in order to earn their trust and purchases (Urban, 2005).

In the context of consumer product reviews, the authors suggest that retail companies should not censor negative reviews. These reviews may be very helpful and persuasive to consumers, especially for products associated with prevention consumption goals. In addition, companies should, in fact, make a conscious effort to organize and present the most persuasive reviews to consumers, particularly when numerous reviews are available. For example, Amazon.com made several important changes in the presentation of product reviews during 2007–2009. The firm initially presented reviews according to their recency, then valence, then importance in Amazon’s eyes (called “Spotlight Reviews” by Amazon), and finally their helpfulness as rated by review readers. This paper explains why some reviews are more persuasive than others and thus provides theoretical underpinnings to companies’ intuitive efforts in providing relevant information. When marketers apply the findings of this research to other product categories, several generalizability issues warrant further discussion.

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Table 4

Results of Study 2.

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Model Estimate</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>1.29 (0.04)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Consumption goals</td>
<td>−0.93 (0.06)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Star ratings</td>
<td>−0.26 (0.01)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Consumption goals × Star ratings</td>
<td>0.42 (0.02)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Review length</td>
<td>0.0005 (0.00002)</td>
<td>&lt;.001</td>
</tr>
</tbody>
</table>

Note: Standard deviations are reported in parentheses.

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Fig. 1. Interaction effect between consumption goals and Star ratings (Study 2).
Vargo and Lusch (2004), in describing the service-dominant logic of marketing, view consumption as the interaction process between a customer and a product/service; through this interaction, the product/service renders its utility. All the products and services involve some extent of customer interaction, which creates value to customers and affects how consumers perceive the quality of the product/service. In fact, research suggests that the quality of a product/service involves at least two unique components: one refers to the technical outcomes delivered by a product/service, and the other refers to the interaction process through which the outcome is delivered (Anderson et al., 1997; Brady and Cronin, 2001; Lim and Chung, in press). For example, consumers’ quality perceptions of an anti-virus program depend on a) the program’s ability to defend computer systems and b) the consumers’ quality perceptions of a product/service (Brady and Cronin, 2001; Lim and Chung, in press). For example, although technical outcomes may be standard across customers (e.g., the software works or not), interaction experiences may vary greatly according to each unique consumption situation (e.g., consumer is or is not technology savvy).

The authors expect that these two components of quality will affect the way people use eWOM. In evaluating a product/service in which technical outcomes are dominant, consumers are more likely to seek information from professional sources (e.g., expert reviews) which offer more impartial information. In this case, consumer reviews may be less effective. On the other hand, in evaluating a product/service in which interaction processes are dominant, consumers are more likely to consult peer consumers’ experiences (e.g., eWOM) and rely on the variability of personal experiences to infer product/service quality. In fact, for many services, interaction processes are critical to consumers’ perceptions of quality (Parasuraman et al., 1985). In these areas, eWOM is perhaps particularly valuable to consumers.

Consumers have different motivations to read peer-generated product reviews. The most important motivation is perhaps making inferences of product/service quality (Hennig-Thurau andWalsh, 2003). For consumers, this research attempts to explain when eWOM matters to them. For managers, this research advocates the possibility of using eWOM system as a means of communication to interact with customers and at the same time collect customer intelligence (Godes and Mayzlin, 2004). Based on this intelligence, managers may choose to react to problems and/or enhance customer satisfaction.

References