How Online Review Valence and Product Type Affect Consumer Attitudes Through Ease of Consumption Imagery

Abstract

Online reviews are considered to be one of the determining factors for purchasing decisions, although they may not be as effective for products that require sensory stimuli for evaluation and cannot be properly conveyed in online environments. Generating consumption imagery could help mitigate the lack of sensory stimulation for different types of products, since consumers that can easily imagine themselves using a product in the future might better evaluate product and have greater purchase intentions, yet little is known about the role of mental imagery in the context of online reviews. This research addresses these concerns by conducting two experimental studies, demonstrating that the influence of review valences on consumers' attitudes is mediated by ease of generating consumption imagery. These effects are moderated by product type, but neutral reviews have weaker effects for experience products and stronger effects for search products. These findings contribute to review valence and mental imagery literature by extending current knowledge of neutral reviews and product type moderation of consumption visions.

Keywords: online review valence, product type, mental imagery

In the current transitioning world of retail, the rise of digital commerce has led to a growing number of consumers seeking and posting opinions about purchases on the internet (Pan & Zhang, 2011) – as of 2014, Amazon.com alone had over 80 million unique user reviews (McAuley, 2015). These user reviews are a manifestation of the so-called electronic word of mouth (eWOM), considered to be one of the determining factors of purchasing decisions (L. Tang, 2017), though its effects on consumer behavior may depend on review valence (i.e., positive, negative or neutral feelings), one of the most studied attributes of WOM (Chen, Wang, & Xie, 2011).

Online reviews are typically presented in written form (Park & Lee, 2009; Xu, Chen, & Santhanam, 2015), but can they be equally effective for all types of products? Some goods have experience attributes, like smells or textures, that are difficult to convey online and typically require physical inspection prior to purchase for evaluation (Luo, Ba, & Zhang, 2012; Park & Lee, 2009). But when direct product contact is not possible, consumers use their imagination to evaluate the product (Orús, Gurrea, & Flavián, 2017), and evoking mental imagery could help alleviate the lack of sensory stimulation needed for evaluating experience products (Maier & Dost, 2018). For instance, a person reading a review about Bluetooth headphones might imagine him or herself putting on the headphones and how comfortable they might feel, what the expected sound quality would be like and even picture wearing them during a jog.

However, despite evidence that product type moderates the effect of online review valence (Park & Lee, 2009; Sen & Lerman, 2007) and suggestions from recent studies in advertising and psychology research that the conditions of product type moderation be investigated from a mental imagery perspective (Orús et al., 2017; Yoo & Kim, 2014), not much is known about how consumption imagery can be affected by online reviews of different types of products and valences. Addressing this gap in the literature, this research aims to contribute to extant theory by exploring the possible mediating role of imagery for user reviews, since the extent to which consumers can clearly and easily imagine themselves using a product in the future might affect their purchase intentions (Petrova & Cialdini, 2005; Schlosser, 2003).

Additionally, we propose that this mediation is moderated by product type and can be beneficial for reviews of experience products that contain detailed textual descriptions, since words that refer to objects or materials readily evoke multiple experiences related to human senses and can facilitate imagination of consumption (Yoo & Kim, 2014). For instance, describing specific textures can make the material qualities of an object more vivid, such as how smooth and soft a bed sheet might feel against the skin (McCabe & Nowlis, 2003). Lastly, we also address the influence of neutral reviews on ease of consumption imagery, since neutral reviews contain less diagnostic information about advantages or disadvantages of product usage experiences and may decrease consumers' motivation to process information, according to (T. (Ya) Tang, Fang, & Wang (2014), and ignoring their could produce biased effects.

The remainder of this paper is organized as follows: a literature review of the effects of eWOM valence, product type and mental imagery on consumers attitudes and intentions, exploring how these variables interact; afterwards, two experimental studies are conducted in order to test the proposed hypotheses and their results are then discussed, along with their managerial implications, limitations and directions for future research.

Theoretical Background

Electronic Word Of Mouth Valence

Word of mouth (WOM) is recognized as an important driver of consumer behavior in marketing literature for more than 60 years (Kozinets, de Valck, Wojnicki, & Wilner, 2010). With the rise of internet communities, a new manifestation of WOM denominated *electronic word of mouth* (eWOM) has appeared, mainly manifested as user generated online reviews, defined as "…any positive or negative statement made by potential, actual, or former customers about a product or company, which is made available to a multitude of people and institutions via the Internet" (Hennig-Thurau et al., 2004, p. 39). In average, 47% of global consumers' online shopping behavior is influenced by reading reviews and comments, and this percentage can rise to 61% in emerging countries such as Brazil (PwC, 2017). Given its importance, researchers have conducted an extensive investigation of eWOM over the last two decades, mainly exploring how WOM influences purchase intentions, consumer attitudes and product sales (Cheung & Thadani, 2012), with valence (i.e., positive, negative or neutral sentiments in eWOM content) being one of most important attributes studied in the literature (Chen, Wang, & Xie, 2011).

While the influence of review valence has received considerable attention, findings on their effects have been considered equivocal (King, Racherla, & Bush, 2014) or not straightforward (Purnawirawan, Eisend, De Pelsmacker, & Dens, 2015), with prior studies reporting either negativity or positivity biases for attitudes towards the brand (Lee, Rodgers, & Kim, 2009), product types (Park; Lee, 2009), communication channels (Berger & Iyengar, 2013), sales (Floyd, Freling, Alhoqail, Cho, & Freling, 2014; You, Vadakkepatt, & Joshi, 2015) and purchase intentions (Baker, Donthu, & Kumar, 2016). These seemingly inconsistent prior findings probably result from the effects of WOM valence being complex and dependent of specific moderators (Pan & Zhang, 2011), such as consumers' prevailing uncertainty, that can increase due to negative eWOM information or also in online environments, since they offer limited cues for information processing and are unable to convey all sensory attributes for evaluating products (Park & Lee, 2009), like physical examination (McCabe & Nowlis, 2003).

Consumers can deal with uncertainty and limited sensorial input in digital retail environments using consumption imagery, since they can mentally imagine themselves consuming a product and experiencing its use prior to purchase, thus helping them deal with an uncertain future (D. Phillips, Olson, & Baumgartner, 1995). Given that eWOM recommendations are typically presented in a text-based format (Park & Lee, 2009), using consumption visions for product evaluation is especially relevant (Orús et al., 2017), since mental images of a product in these conditions is one of the few sources of information available to assist consumers in forming a judgment (Schwarz, 1990; Walters, Sparks, & Herington, 2012).

Ease Of Consumption imagery Mediation

Consumers can sometimes simulate mental images of future situations and consequences of product use by representing sensory information in working memory (MacInnis & Price, 1987, 1990). This specific form of mental imagery has been referred to as consumption visions (D. Phillips et al., 1995; Walters et al., 2012) or consumption imagery (Petrova & Cialdini, 2005) and enables consumers to imagine what it would be like to interact and consume the product. For example, consumers intending to buy a new car could picture themselves behind the steering wheel and driving to work, as well as anticipating what their friends reaction would be (D. M. Phillips, 1996).

Existing evidence suggests that the effects of consumption imagery can "lead to positive changes in attitudes, brand evaluations, and actual behavior" (Escalas, 2004, p. 37), with Yoo & Kim (2014) finding that positive emotions resulting from the elaboration of mental imagery increases behavioral intentions. Since purchase intentions are consumer's predictions about their own behavior, they are likely based on the ability to picture themselves consuming the product (Schlosser, 2003). Consumers' purchase intentions may also be influenced by the ease with which they can imagine their future experience with the product when they process information, however research in this direction lacks attention (Chang, 2013; Petrova & Cialdini, 2005). Recent studies have found strong correlations between ease of imagining the product and attitudes and purchase intentions (Orús et al., 2017) and shown that imagery fluency is an antecedent or precondition of mental imagery (Maier & Dost, 2018).

Using concrete wording is a way to elicit consumptions visions more easily, since words that refer to objects or materials such as "watermelon" or "leather" have tangible referents that readily evoke multiple sensory experiences related to sight, smell, touch and taste (Yoo & Kim, 2014). Increasing the description of specific touch properties can make the material properties of an object more vivid, such as not only describing the dimensions or color of a towel, but also how soft it might feel against the skin (McCabe & Nowlis, 2003). Concrete words may be even more effective than concrete pictures in evoking mental imagery, since in the absence of visual aids the individual has no choice but to use the imagination to visualize the product or situation described only by text (Babin & Burns, 1997; Walters, Sparks, & Herington, 2007). According to Holbrook & Moore (1981), when written descriptions are translated into mental images and judgments are based on those images, any differences between pictorial and verbal treatments might be diluted.

Despite evidence that detailed verbal descriptions of actual consumption of products may encourage consumers to form consumption visions (D. M. Phillips, 1996), extant research on mental imagery has mainly focused on product advertisements and has not yet investigated its mediation role in the context of eWOM, considered an important source of information for consumers that typically presents descriptions of personal opinions and experiences about products. Valence of information might also factor into consumption

imagery and may lead to a positivity bias in imagining future events, because individuals are disinclined to fantasize about negative future outcomes and more likely imagine positive ones (MacInnis & Price, 1987). According to Escalas (2004), consumers engaged in mental simulations of themselves using a product with positive outcomes usually do so in the form of stories with a narrative structure, resulting in positive affective responses and fewer critical thoughts, and may end up liking the product more than if they had engaged in an analytical evaluation of the product. This view suggests that consumer imagery stimulated by content of a positive nature would also be positive and result in positive affect (Babin & Burns, 1997).

For instance, when reading a positive review of a pair of running shoes, containing statements such as "comfortable for all day wear" or "durable in all sorts of climates, including rain and snow", the consumer might imagine going for a morning walk or jog and not having to worry as much if it starts to rain. These simulations with favorable outcomes would then lead to a more positive evaluation and attitude towards the product. But potentially negative stimuli, such as negative mental imagery of chores that might be elicited from reading about a washing machine, may lead to more negative evaluations (Maier & Dost, 2018).

The valence of eWOM may have minimal effects on product sales if consumers lack motivation, defined by T. (Ya) Tang et al. (2014, p. 44) as "consumers' desire or willingness to process product-related information". However, Orús et al. (2017) found that ease of imagining the product was higher for consumers with low motivation, who use their imagination to raise affection toward the product. Given that positive emotions resulting from the elaboration of mental imagery can increase behavioral intentions and lead to positive changes in attitudes (Escalas, 2004; Yoo & Kim, 2014), we expect that both positive and negative eWOM review valences can affect consumer's evaluations and attitudes towards the product, when mediated by how easy it is to imagine consuming or using said product. Thus, the following hypothesis is proposed:

H1: Ease of consumption imagery mediates the effects of review valence on consumer evaluations and attitudes towards the product.

The effects of review valence on consumer attitudes through ease of consumption imagery may also depend on the type of product being described in eWOM, since online products with high sensory requirements cannot be physically examined by consumers, making the purchase more difficult (McCabe & Nowlis, 2003). While past findings have shown that product type moderates the effect of review valence (Pan & Zhang, 2011; Park & Lee, 2009; Sen & Lerman, 2007), recent studies have suggested that the conditions of these effects should be investigated from a mental imagery perspective (Orús et al., 2017; Yoo & Kim, 2014), since product type could influence consumers to more easily form mental images of a product.

The Product Type Moderation

Products and services can be classified as having search or experience qualities. While search products can be evaluated using external information, such as user reviews, experience products have to be personally inspected prior to purchase (Nelson, 1974). Additionally, Holbrook & Moore (1981) classified products as utilitarian or hedonic, with the former referring to the functional, instrumental, and practical benefits of consumption offerings; the latter involves aesthetic, sensory, or symbolic benefits that must be sensed or experienced to be adequately judged. (Chitturi, Raghunathan, & Mahajan, 2008; Voss, Spangenberg, & Grohmann, 2003). Although conceptually different, marketing literature

alternates between these categorizations when referring to product types and can even combine them, such as in Lin, Lu, & Wu (2012).

According to Peterson et al., (1997), the Internet could be a poor substitute for traditional transaction channels for consumers who would like (or need) to experience the product prior to purchase. Experience goods have features that cannot be easily communicated online, with attributes like shape and textures that require physical inspection for quality evaluation (Luo et al., 2012). Some researchers differentiate search/experience products not only if consumers are able to inspect products prior to purchase, but also by how much they need to use their senses to evaluate goods with more experience qualities or if only second-hand information (more search qualities) will suffice, since product attributes differ across channels. For instance, the smell of flowers is considered a search quality offline, since it is possible to evaluate it prior to purchase, but this is not possible online (Weathers, Sharma, & Wood, 2007). However, the differences between search and experience goods can diminish on the Internet by enabling consumers to learn the experiences of others and to gather product information that is often difficult to obtain in offline settings (Huang, Lurie, & Mitra, 2009). As previously stated, eWOM is an important source of information for consumers and reviews were found to increase the likelihood of purchase with greater impact for experience than for search products by Huang et al. (2009), and the authors call for more details on how information is processed for each product type, though review valence was not investigated.

There is evidence that product type moderation of review valence on consumer attitudes indicates a negativity bias (i.e., trusting and paying more attention to negative information) for search products. The results of Sen & Lerman (2007) show that negative reviews hurt product attitude more in the case of products with search qualities, such as cell phones or smart cameras, than for experience or hedonic products. An opposite effect for experience products may occur, resulting in a positivity bias (greater skepticism and less attention payed to negative information). This could happen due to consumers likely looking forward to choosing a product that will make them feel good and being in a positive mood when judging hedonic attributes, thus discounting and paying less attention to negative information contained in the hedonic product review, because it is inconsistent with their current or anticipated mood. This effect, however, should not occur for evaluations based on utilitarian attributes (Adaval, 2001).

One of the main differences between search and experience goods is the level of uncertainty regarding the quality of products prior to purchase (Luo et al., 2012), and perceived risk and uncertainty increase along the search–experience product continuum (Purnawirawan et al., 2015), which may elicit a negativity bias due to consumers' aversion to risk (Pan & Zhang, 2011). Since online environments can't transmit sensory attributes such as smell or touch, they may also increase consumer uncertainty for experience goods, which could also be magnified even further from negative eWOM information (Park & Lee, 2009). But when actual consumption is not possible and some of the product benefits involve sensory stimulation, elaborated imagery could be useful as a sensory substitute experience (MacInnis & Price, 1987). Consumption visions enables consumers to deal with an uncertain future by providing images of themselves interacting with a product and experiencing its use (D. Phillips et al., 1995). Even without direct product experience, evoking mental imagery such as consumption visions could help consumers acquire enough information to make a purchase decision (Yoo & Kim, 2014) and thus alleviate the lack of sensory stimulation for experience products in online stores, as mental imagery also incorporates associated sensory experiences (Maier & Dost, 2018).

As previously mentioned, consumers are more likely to form consumption imagery when product attributes are depicted with vivid and detailed language (D. M. Phillips, 1996), such as more thorough product reviews. According to Petrova & Cialdini (2005), vivid information has been defined as concrete and image provoking, and the absence of vivid descriptions has a negative effect on product evaluations when consumers imagine product consumption. Experience products such as clothes may require a high degree of vivid information prior to purchase, but vividness and consumption imagery are thought to be less important when consumers focus on search characteristics and might actually be worthless to improve attitudes towards search products (Maier & Dost, 2018; Orús et al., 2017)

Therefore, while negative reviews are expected to cause more damage to product attitudes for search products, regardless of vivid information, online reviews for experience products might benefit from consumption imagery and negative information may even be discounted. However, recent studies suggest that focusing only on positive and negative product reviews while ignoring their neutral form produces a biased view of eWOM effects (T. (Ya) Tang et al., 2014), hence the seemingly asymmetrical moderating effects of product type on eWOM valence may also vary for neutral-valenced reviews and should be investigated.

Neutral valence

According to T. (Ya) Tang et al. (2014), neutral reviews can change consumers' attitudes and purchase behaviors through different underlying cognitive mechanisms and can be classified into two types: mixed-neutral reviews, which contain an equal amount of positive and negative information, and the indifferent-neutral form, containing neither positive nor negative information. The study by T. (Ya) Tang et al. (2014) found that indifferent-neutral reviews had a significant negative effect on sales of experience products (movie tickets) and call for a more in-depth exploration of the effects of neutral eWOM on product sales between search versus experience goods.

Some prior studies have analyzed neutral or moderately-valenced reviews and bring further evidence of a negativity bias for search products. When comparing the attitude towards the product from attribute-centric reviews for a search product (laptop), Wang, Cunningham, & Eastin (2015) found no significant differences between the positive and neutral reviews, but both were significantly different from the negative review, finding a ceiling effect for attitudes. This means that once the positivity outweighs the negativity in the review, how much the positivity degree varies is not important (Purnawirawan et al., 2015). As a result, while there is a possible negativity bias for search products, positive and neutral review conditions may not be significantly different.

For experience products, indifferent-neutral reviews contain less diagnostic information about advantages or disadvantages of product usage experiences and may decrease consumers' motivation to process information (T. (Ya) Tang et al., 2014). Since imagery depends on motivation being high to process imagery-inducing stimulus (Orús et al., 2017), this may hinder consumption imagery, leading to weaker effects for neutral experience reviews. As for negative experience reviews, consumers may discount negative information due to skepticism of reviewers' true motivations to write a negative opinions for an experience good, such as lack of impartiality for personal reasons (Sen & Lerman, 2007), and thus the effects of negative experience reviews may not differ from positive experience reviews. For search products, it is expected that negative reviews should hinder consumption imagery and lead to less favorable evaluations and attitudes, while an opposite effect should occur for positive and neutral reviews, though conditions may not differ due to a ceiling effect for positivity degree, leading to the following hypotheses:

H2a: Positive (vs. negative) reviews of search products result in stronger effects on consumers' attitudes and evaluations; For experience products, there is no significant difference between positive vs. negative reviews through ease of consumption imagery.

H2b: Positive (vs. neutral) reviews of search products have no significant differences for consumers' attitudes and evaluations through ease of consumption imagery; For experience products, positive (vs. neutral) reviews result in stronger effects on consumers' attitudes and evaluations through ease of consumption imagery.

H2c: Neutral (vs. negative) reviews of search products result in stronger effects on consumers' attitudes and evaluations; For experience products, neutral (vs. negative) reviews result in weaker effects on consumers' attitudes and evaluations through ease of consumption imagery.

Method

In order to test the proposed hypotheses, two experiments were conducted. The first study explored the indirect effects of eWOM valence (positive vs negative) on consumers' attitudes and evaluations when mediated by ease of imagining, using fictitious online reviews for a backpack. The second study expanded upon the first by adjusting the manipulated review for more extreme valences, introducing an indifferent-neutral review condition and testing the predicted moderation of product type (search or experience).

Experiment 1

The goal of experiment 1 was to verify if the ease of generating consumption imagery would lead to a more positive indirect effect of review valence on consumer evaluation and attitudes towards the product (H1). Two hundred and twenty-one individuals participated in an online survey via the Qualtrics platform and were randomly assigned to one of two conditions (eWOM valence: negative vs. positive) in a between-subjects design. Ninety-eight participants failed to fully complete the survey and thus were discarded from the data set. The final sample considered for the analysis in this study was 123 individuals (53% female, M_{age} = 29.2, SD = 8.70).

Participants were asked to evaluate information about a product sold online and randomly presented with a positive or negative user review of an unbranded backpack. Information about weight, internal size and build quality was presented on all conditions but varied according to their valence, using appropriate positive or negative forms. After seeing the reviews, participants were asked to rate their attitudes towards the product (Orús et al., 2017) on a 7-point semantic differential scale in terms of usefulness, pleasantness and desirability, among others (see Appendix A). Additional 7-point scales (Newman; Dhar, 2014) were presented for the participants to rate their willingness to buy the backpack and if they would pay a premium price for it, as well as answering how much they would be willing to pay for the backpack in relation to its average value, which were then averaged into a single indexed measure of evaluation (α = .897).

A 3-item measure was used to assess the ease of imagining the backpack (adapted from Orús et al., 2017): "*After seeing the product information, it is easy for me to (1) imagine how the product would perform/(2) picture myself using the product/(3) picture myself enjoying the product*"). Participants responded using a 7-point semantic differential scales ranging from 1 – Totally Disagree to 7 – Totally Agree. An index was created by averaging the three ease of imagining items (α = .807). In order to check how the eWOM review valence was perceived by the participants, two items were presented on 7-point scales. Answers for

the first item ("the opinions expressed on the product review were…") ranged from 1 – Very positive to 7 – Very negative, while the second item ("Overall, the review was more positive than negative") ranged from 1 – Totally Disagree to 7 – Totally Agree.

Initial analysis via an independent-samples t-test revealed an effective manipulation of review valence, showing that participants in the negative review conditions perceived the reviews as being more negative (M_{neg} = 1.91; *SD* = 1.01) when compared to the positive review conditions (M_{pos} = 5.99; *SD* = 1.14; t (121) = –20.9, p < .001, two-tailed).

Prior to testing the mediation predicted in H1, an independent-samples t-test was conducted to compare attitude scores for participants in the negative and positive conditions. A significant difference was found between negative reviews scores (M_{neg} = 3.28, *SD* = 1.05) and positive review scores (M_{pos} = 5.50, *SD* = 1.21; t (121) = –10.8, p < .001, two-tailed). Participants' attitudes towards the product was significantly higher when exposed to positive reviews than negative reviews, as expected. An additional t-test analysis was performed in order to test consumers evaluation measures, and results show a higher effect for positive reviews (M_{pos} = 4.19, *SD* = 1.46) than negative reviews (M_{neg} = 2.16, *SD* = 1.06; t (91) = –8.51, p < .001, two-tailed).

In order to test H1, that ease of consumption imagery would mediate the effect of eWOM valence on consumers' evaluations and attitudes towards the product, a bootstrapping analysis was performed (model 4 – Hayes, 2013). Results showed that review valence had a significant direct effect on consumers' attitudes towards the product (Coef = 1.95, CI = 1.55 to 2.34), as well as an indirect effect when mediated by ease of imagining (Coef = 0.28, CI = 0.11 to 0.49). When the dependent variable was evaluation (see table 1), results show a significant effect of eWOM valence on ease of imagining (Coef = 1.71, CI = 1.27 to 2.15) and an indirect effect through ease of imagining on evaluation (Coef = 0.31, CI = 0.12 to 0.56).

Experiment 2

One hundred and seventy undergraduate students voluntarily participated in this experiment in exchange for course credits and were randomly assigned to one of three conditions (eWOM valence: negative vs. neutral vs. positive) with a between-subjects design. Participants that spent less than 10 seconds on the manipulated review page of the survey were excluded, since this was the minimum estimated duration for an adequate attention span on each condition. The final sample considered for this study consisted of 157 individuals (54% female, M_{age} = 24.39, *SD* = 5.56). A pre-test was conducted with random students in order to create the indifferent-neutral review condition, which was written in a more straightforward descriptive manner but utilized words such as "normal", "average" and "adequate" to convey a sense of neutrality from the reviewer being ambivalent about the product. Pre-test results demonstrated that the review was perceived as being neutral/indifferent, averaging scores between 3 and 5 on a 7-point differential scale. As in the previous experiment, relevant information was presented on all conditions but now the negative and positive conditions were more extremely valenced, using for example "loved/hated" instead of "liked/disliked". Additionally, more concrete wording was provided, such as "all black with a compact design". Participants were invited to sit in a computer lab and answer an online survey on the Qualtrics platform, which randomly presented one of three conditions: extremely negative, indifferent-neutral and extremely positive reviews of an unbranded laptop backpack.

After seeing the review, participants were specifically asked to imagine that they were thinking of buying a backpack and to rate their attitude towards the product as well as their evaluations of the backpack, while also reporting how easy it was for them to imagine the backpack, all using 7-point semantic differential scales. Afterwards, participants were

presented with two items to assess experience qualities (*It's important for me to (1) see/(2) touch this backpack to evaluate its performance*; α = .712) and two items to assess search qualities (*I can adequately evaluate this backpack using only information provided by the manufacturer about its characteristics; I can evaluate the quality of this backpack simply by reading information about it*; α = .783), adapted from Weathers, Sharma, & Wood (2007). There were no distinctly manipulated conditions of product type, as the product used in this experiment (a backpack) does not clearly belong to a specific type (Xu et al., 2015), therefore the experience and search qualities of the product were measured by averaging responses to the items and afterwards computing a difference between the average responses, a procedure used by Weathers et al. (2007). Finally a spotlight analysis was performed and this resulted in two groups, coded *0 = Search* and *1 = Experience*.

A one-way between-groups ANOVA demonstrated a significant difference in review valence scores for the three groups: F (2, 154) = 141, $p < .001$; Post-hoc comparisons using Tukey HSD test indicated that participants in the negative review conditions perceived the reviews as being more negative (M_{neg} = 1.61; SD = .93) when compared to the neutral review ($M_{neutral}$ = 3.75; SD = 1.31) and positive review conditions (M_{pos} = 5.50; SD = 1.23;). We did not check for type of product due to the measurement nature of the variable. In order to test hypotheses H2a, H2b and H2c, another bootstrapping analysis was performed (model 7 – Hayes, 2013), with a 95% confidence interval (CI) obtained by running 10,000 samples, using an indicator coding for valence groups as *0 = negative, 1 = neutral* and *2 = positive* (negative condition as baseline), and a second coding model with the *neutral condition set to 0* as the baseline. Results showed that ease of consumption imagery did mediate the interaction effect of review valence and product type. The regression coefficients of partial effects and their *p*-values are shown in Table 1.

Table 1. *Regression Coefficients Of The Conditional Process Model*

	Ease of Imagery	**Attitude**	**Evaluation**
Neutral vs. Negative (X1)	1.28**	1.58***	1.08***
Positive vs. Negative (X2)	1.50***	2.75***	1.87***
Positive vs. Neutral (X3)	0.22	--	--
Product Type (Neutral =1)	0.80	--	--
Product Type (Neutral =0)	–1.38***	--	--
X1 × Type	–2.18***	--	--
X2 × Type	–1.57**	--	--
X3 × Type	0.61	--	--
Ease of Consumption Imagery	--	0.24***	0.37***
Constant	4.02***	1.66***	0.40
	R^2 = 0.15	R^2 = 0.57	R^2 = 0.58
	F(5, 151) = 5.38***	F(3, 153) = 68.2***	F(3, 153) = 35.3***

*$p < .05$; **$p < .01$; ***$p < .001$.

The relative indirect effects on consumers' attitudes and evaluations can be seen in Tables 2 through 4 and show that when the backpack was perceived as having more search attributes, positive reviews were easier to imagine and resulted in stronger indirect effects for both dependent variables when compared to negative search reviews; however, when the backpack was thought as an experience product, there were no significant differences between the positive and negative review conditions for the mediator and effects for attitudes (Coeff. = –0.015, CI = –0.21 to 0.19) and evaluations, thus supporting H2a.

Table 2. *Indirect Effects Of Review Valence On Attitude Through Consumption Imagery By Product Type*

Review Valence	Product Type	Effect	BootLLCI	BootULCI
Positive vs. Negative	Search	0.37	0.13	0.67
	Experience	–0.015	–0.21	0.19
Positive vs. Neutral	Search	0.055	–0.11	0.22
	Experience	0.20	0.005	0.48
Neutral vs. Negative	Search	0.31	0.089	0.61
	Experience	–0.22	–0.49	–0.014

Table 3. *Indirect Effects Of Review Valence On Evaluation Through Consumption Imagery By Product Type*

Review Valence	Product Type	Effect	BootLLCI	BootULCI
Positive vs. Negative	Search	0.56	0.25	0.89
	Experience	–0.024	–0.31	0.27
Positive vs. Neutral	Search	0.084	–0.16	0.32
	Experience	0.31	0.005	0.67
Neutral vs. Negative	Search	0.48	0.17	0.84
	Experience	–0.34	–0.69	–0.024

When comparing positive vs neutral reviews, there were no significant differences between conditions for the search product (Coeff. = 0.055, CI = –0.11 to 0.22), while the positive review (vs. neutral review) resulted in stronger indirect effects on consumers' attitudes and evaluations and easier generation consumption imagery for the experience product, fully supporting hypotheses H2b. Reviews of the search product in the neutral (vs. negative) conditions increased consumers' attitude towards the product as well as evaluations (Coeff. = 0.48, CI = 0.17 to 0.84), mediated by ease of consumption imagery; for the experience product, neutral (vs. negative) reviews were harder to imagine and decreased consumers' attitudes and evaluations, provide support for hypothesis 2c.

Results for the experience product type showed that although positive and negative reviews had no significant differences, as predicted in H2a, the neutral review made it harder to imagine product use and led to weaker outcomes when compared to both positive (supporting H2b) and negative (H2c) reviews. In contrast, negative reviews for the search product were significantly different from positive reviews, thus fully supporting H2a, while no significant differences were found between the same positive reviews and neutral reviews, as predicted in H2b likely due to a ceiling effect of positivity degree. Hypothesis 2c was also supported when results showed that the negative review of the backpack, when deemed as having more search attributes, resulted in weaker effects on consumers' attitudes and evaluations when compared to the neutral condition, indicating a possible negativity bias.

General Discussion

Past research has provided evidence that product type moderates the effect of eWOM valence, but little is known about how user reviews could be mediated through consumption imagery, which could be particularly useful as a sensory substitute for the evaluation of experience products in online environments. We addressed these concerns by conducting two studies.

The first objective of this research was to demonstrate that ease of consumption imagery mediates the effect of positive or negative online reviews on consumers' attitude towards the product and evaluations. Results supported our first hypothesis, showing that when reviews are positive and mental images of product consumption are easier to

imagine, consumers' attitudes towards the product are improved. These effects are linear, so negative reviews hinder imagination of product consumption and decreases attitudes and evaluations. However, extant literature suggests that product type may interact with ease of consumption imagery (Maier & Dost, 2018; Orús et al., 2017; Yoo & Kim, 2014) and also with neutral-valenced reviews, and thus a second study was conducted in order to explore these mechanisms.

The goal of study two was to test the moderating role of product type in influencing consumers to more easily form mental images of a product after reading positive, neutral or negative reviews and what effects this would entail. Valence of reviews were manipulated to be perceived as more extremely positive or negative, since extreme information has a greater influence on attitudes (Lee et al., 2009), while the neutral condition presented indifferent and undecisive information. A backpack was again utilized for the reviews, since it is relevant for the sample of undergraduate students and is considered an in-between product with search or experience attributes.

Results found support for all three proposed hypotheses: when respondents felt it was more important to see or touch the backpack in order to evaluate its performance (i.e. more experience qualities) instead of only relying on the presented information, results showed a U-shaped effect: the neutral review for experience attributes made it harder to imagine product use and led to weaker outcomes when compared to both positive and negative reviews, although these had no significant differences. In contrast, negative reviews for the search product were significantly different from positive reviews, while no significant differences were found between the same positive reviews and neutral reviews for the search product type.

These findings corroborate the extant literature on the moderating role of product type both on eWOM valence and ease of consumption imagery, while extending past research to show a moderated mediation model, with product type acting as a moderator of the indirect effect of review valence on consumers' attitudes and evaluations through ease of consumption imagery. Consistent with past studies (e.g. Sen & Lerman, 2007), our results indicated a negativity bias for search products, meaning the negative review information was more salient and caused more damage to product attitudes, as well as hindering the generation of consumption images, when compared to the positive condition. As a possible explanation, Maier & Dost (2018) suggested that mental images of using products with search characteristics, such as a washing machine, are less important than experience products, with some scholars deeming vivid information as being worthless to improve consumers' attitudes towards a search product (Orús et al., 2017; Weathers et al., 2007). An alternative explanation may lie on our choice of product (a backpack), that when perceived as having more search attributes may also create negative work-related feelings that increase with the vividness stimuli of the information (Maier & Dost, 2018).

Additionally, this study also found evidences of more asymmetric effects when the neutral-valenced condition is tested. For search products, the neutral review was perceived as more moderately positive, although there were no significant differences when compared to the extremely positive condition, showing a ceiling effect for evaluations and attitudes, also found by Purnawirawan et al. (2015). The authors argue that this may occur due to confirmation bias, when people are more likely to consider information consistent with their predispositions and give more weight to positive than negative reviews to form their attitudes, but the influence of positivity degree is unimportant once positivity outweighs negativity.

Regarding the experience product, positive vs. negative conditions were not significantly different, but the neutral condition led to worse effects for ease of consumption imagery and product attitudes and evaluations, which was not the case in the neutral condition

for the search product moderation. This may have occurred due to indifferent-neutral reviews containing less diagnostic information about product use, lowering consumers' motivation to generate consumption imagery and leading to a worse evaluation of experience products, since the imagery-inducing stimulus imagery depends on motivation being sufficiently high to be processed (Orús et al., 2017; T. (Ya) Tang et al., 2014).

Alternatively, the reduced negativity effect for the negative experience reviews may result from consumers skepticism of reviewers' true motivations to write a negative review for an experience good (personal reasons unrelated to the product's quality), and this distrust could result in consumers discounting the negative information or just pay less attention to them (Sen & Lerman, 2007). Another possible explanation may point to the different imagery abilities of individuals, who may not be impacted by vivid information in the same manner and would find imagining even a positive product experience more difficult, which would lower the likelihood of choosing the product. (Petrova & Cialdini, 2005).

These findings also offer managerial implications for marketers and online review platforms. There is a continuing relevance of a search vs. experience product distinction in e-commerce (Maier & Dost, 2018), and while the mere presence of online reviews may drive product sales and influence consumers attitudes and evaluations, platform holders should be wary of specific types of content such as neutral reviews, that lack enough concrete diagnostic information, may result in negative effects on consumers' attitudes and purchase intentions towards experience products. According to T. (Ya) Tang et al. (2014), existing business practices tends to focus only on positive and negative reviews and ignore neutral content, that can influence business performance either directly or indirectly. Online retailers could optimize their review request forms in order to incentivize reviewer to include more vividly detailed descriptions that could help consumers form better judgments by easily evoking consumption imagery, since most reviews are still presented only textually and even the inclusion of static images may not be enough to improve mental imagery.

This research has some limitations. First, product type was measured instead of manipulated, using the same product (backpack) in all conditions. Although a backpack does not clearly belong to a specific product type, classified as being an in-between search and experience good (Girard & Dion, 2010), products that fall too close to the center may be difficult to classify (Mudambi & Schuff, 2010). Past studies that utilized the same product showed that participants didn't evaluate backpacks on the basis of affective considerations (Adaval, 2001), while other findings suggested that the backpack's texture, color, and spatial attributes may give it stronger experience characteristics in more vivid and concrete formats such as videos (Xu et al., 2015). Additionally, search/experience qualities were measured at product level and critical attributes that drove perceptions of each product type were not determined, as in Weathers et al. (2007). Future studies could opt for direct manipulation of distinct search and experience products or services.

Finally, respondents only saw a single review, instead of a more balanced and realistic approach of a mixture of various positive, negative and neutral reviews. Although online platforms likely contain a mix of both positive and negative reviews for most products, instead of presenting single isolated reviews, Purnawirawan et al. (2015) did not find any significant effects of valence type (single review set vs. set of several reviews) or the number of reviews on their meta-analysis, other studies conclude that eWOM volume has a stronger impact on sales than eWOM valence and suggest further investigations into a composite metric of valence-volume (Babić Rosario, Sotgiu, De Valck, & Bijmolt, 2016).

References

Adaval, R. (2001). Sometimes It Just Feels Right: The Differential Weighting of Affect-Consistent and Affect-Inconsistent Product Information. *Journal of Consumer Research*, *28*(1), 1–17. https://doi.org/10.1086/321944

Babić Rosario, A., Sotgiu, F., De Valck, K., & Bijmolt, T. H. A. (2016). The Effect of Electronic Word of Mouth on Sales: A Meta-Analytic Review of Platform, Product, and Metric Factors. *Journal of Marketing Research*, *53*(3), 297–318. https://doi.org/10.1509/jmr.14.0380

Babin, L. A., & Burns, A. C. (1997). Effects of print ad pictures and copy containing instructions to imagine on mental imagery that mediates attitudes. *Journal of Advertising*, *26*(3), 33–44. https://doi.org/10.1080/00913367.1997.10673527

Baker, A. M., Donthu, N., & Kumar, V. (2016). Investigating How Word of Mouth Conversations About Brands Influence Purchase and Retransmission Intentions. *Journal of Marketing Research*, *53*(2), 225–239. https://doi.org/http://dx.doi.org/10.1509/jmr.14.0099

Berger, J., & Iyengar, R. (2013). Communication Channels and Word of Mouth: How the Medium Shapes the Message. *Journal of Consumer Research*, *40*(3), 567–579. https://doi.org/10.1086/671345

Chang, C. (2013). Imagery fluency and narrative advertising effects. *Journal of Advertising*, *42*(1), 54–68. https://doi.org/10.1080/00913367.2012.749087

Chen, Y., Wang, Q. I., & Xie, J. (2011). Online Social Interactions: A Natural Experiment on Word of Mouth Versus Observational Learning. *Journal of Marketing Research*, *XLVIII*(April 2011), 238–254. https://doi.org/10.1509/jmkr.48.2.238

Cheung, C. M. K., & Thadani, D. R. (2012). The impact of electronic word-of-mouth communication: A literature analysis and integrative model. *Decision Support Systems*, *54*(1), 461–470. https://doi.org/10.1016/j.dss.2012.06.008

Chitturi, R., Raghunathan, R., & Mahajan, V. (2008). Delight by Design: The Role of Hedonic Versus Utilitarian Benefits. *Journal of Marketing*, *72*(3), 48–63. https://doi.org/10.1509/jmkg.72.3.48

Escalas, J. E. (2004). Imagine yourself in the product : Mental simulation, narrative transportation, and persuasion. *Journal of Advertising*, *33*(2), 37–48. https://doi.org/10.1080/00913367.2004.10639163

Floyd, K., Freling, R., Alhoqail, S., Cho, H. Y., & Freling, T. (2014). How online product reviews affect retail sales: A meta-analysis. *Journal of Retailing*, *90*(2), 217–232. https://doi.org/10.1016/j.jretai.2014.04.004

Girard, T., & Dion, P. (2010). Validating the search, experience, and credence product classification framework. *Journal of Business Research*, *63*(9–10), 1079–1087. https://doi.org/10.1016/j.jbusres.2008.12.011

Hayes, A. F. (2013). *Introduction to Mediation, Moderation, and Conditional Process*

Analysis: A Regression-Based Approach. *Guilford Publications*. https://doi.org/10.5539/ass.v11n9p207

Holbrook, M. B., & Moore, W. L. (1981). Feature Interactions in Consumer Judgments of Verbal versus Pictorial Presentations. *Journal of Consumer Research*, *8*(1), 103. https://doi.org/10.1086/208846

Huang, P., Lurie, N. H., & Mitra, S. (2009). Searching for Experience on the Web: An Empirical Examination of Consumer Behavior for Search and Experience Goods. *Journal of Marketing*, *73*(2), 55–69. https://doi.org/10.1509/jmkg.73.2.55

King, R. A., Racherla, P., & Bush, V. D. (2014). What We Know and Don't Know About Online Word-of-Mouth: A Review and Synthesis of the Literature. *Journal of Interactive Marketing*, *28*(3), 167–183. https://doi.org/10.1016/j.intmar.2014.02.001

Kozinets, R. V, de Valck, K., Wojnicki, A. C., & Wilner, S. J. S. (2010). Networked narratives: Understanding word-of-mouth marketing in online communities. *Journal of Marketing*, *74*(2), 71–89. https://doi.org/10.1509/jmkg.74.2.71

Lee, M., Rodgers, S., & Kim, M. (2009). Effects of valence and extremity of eWOM on attitude toward the brand and website. *Journal of Current Issues and Research in Advertising*, *31*(2), 1–11. https://doi.org/10.1080/10641734.2009.10505262

Lin, T. M. ., Lu, K., & Wu, J. (2012). The effects of visual information in eWOM communication. *Journal of Research in Interactive Marketing*, *6*(1), 7–26. https://doi.org/10.1108/17505931211241341

Luo, J., Ba, S., & Zhang, Z. (2012). The effectiveness of online shopping characteristic and well-designed websites on satisfaction. *MIS Quarterly*. https://doi.org/10.1016/S1013-7025(09)70031-4

MacInnis, D. J., & Price, L. L. (1987). The Role of Imagery in Information Processing: Review and Extensions. *Journal of Consumer Research*, *13*(4), 473. https://doi.org/10.1086/209082

MacInnis, D. J., & Price, L. L. (1990). An Exploratory Study of the Effects of Imagery Processing and Consumer Experience on Expectations and Satisfaction. In *NA - Advances in Consumer Research*. https://doi.org/10.1108/09604520310476454

Maier, E., & Dost, F. (2018). Fluent contextual image backgrounds enhance mental imagery and evaluations of experience products. *Journal of Retailing and Consumer Services*, *45*(January), 207–220. https://doi.org/10.1016/j.jretconser.2018.09.006

McAuley, J. (2015). Amazon product data. Retrieved from http://jmcauley.ucsd.edu/data/amazon/

McCabe, D. B., & Nowlis, S. M. (2003). The Effect of Examining Actual Products or Product Descriptions on Consumer Preference. *Journal of Consumer Psychology*, *13*(4), 431–439. https://doi.org/10.1207/S15327663JCP1304_10

Mudambi, S. M., & Schuff, D. (2010). What makes a helpful online review? A study of

customer reviews on Amazon. com. *MIS Quarterly*, *34*(1), 185–200. https://doi.org/Article

Nelson, P. (1974). Advertising as Information.pdf. *The Journal of Political Economy*. https://doi.org/10.1136/tc.8.3.348

Newman, G. E., & Dhar, R. (2014). Authenticity Is Contagious: Brand Essence and the Original Source of Production. *Journal of Marketing Research*, *51*(3), 371–386. https://doi.org/10.1509/jmr.11.0022

Orús, C., Gurrea, R., & Flavián, C. (2017). Facilitating imaginations through online product presentation videos: effects on imagery fluency, product attitude and purchase intention. *Electronic Commerce Research*, *17*(4), 661–700. https://doi.org/10.1007/s10660-016-9250-7

Pan, Y., & Zhang, J. Q. (2011). Born Unequal: A Study of the Helpfulness of User-Generated Product Reviews. *Journal of Retailing*, *87*(4), 598–612. https://doi.org/10.1016/j.jretai.2011.05.002

Park, C., & Lee, T. M. (2009). Information direction, website reputation and eWOM effect: A moderating role of product type. *Journal of Business Research*, *62*(1), 61–67. https://doi.org/10.1016/j.jbusres.2007.11.017

Peterson, R. A., Balasubramanian, S., & Bronnenberg, B. J. (1997). Exploring the implications of the internet for consumer marketing. *Journal of the Academy of Marketing Science*, *25*(4), 329–346. https://doi.org/10.1177/0092070397254005

Petrova, P. K., & Cialdini, R. B. (2005). Fluency of Consumption Imagery and the Backfire Effects of Imagery Appeals. *Journal of Consumer Research*, *32*(3), 442–452. https://doi.org/10.1086/497556

Phillips, D. M. (1996). Anticipating the Future: The Role of Consumption Visions in Consumer Behavior. In *NA - Advances in Consumer Research*.

Phillips, D., Olson, J., & Baumgartner, H. (1995). Consumption Visions in Consumer Decision Making. *Advances in Consumer Research*.

Purnawirawan, N., Eisend, M., De Pelsmacker, P., & Dens, N. (2015). A Meta-analytic Investigation of the Role of Valence in Online Reviews. *Journal of Interactive Marketing*, *31*, 17–27. https://doi.org/10.1016/j.intmar.2015.05.001

Schlosser, A. E. (2003). Experiencing Products in the Virtual World: The Role of Goal and Imagery in Influencing Attitudes versus Purchase Intentions. *Journal of Consumer Research*, *30*(2), 184–198. https://doi.org/10.1086/376807

Schwarz, N. (1990). Feelings as information: informational and motivational functions of affective states. *1989/03*, *1989/03*, 56,4.

Sen, S., & Lerman, D. (2007). Why are you telling me this? An examination into negative consumer reviews on the web. *Journal of Interactive Marketing*, *21*(4), 76–94. https://doi.org/10.1002/dir.20090

Tang, L. (2017). Mine Your Customers or Mine Your Business: The Moderating Role of Culture in Online Word-of-Mouth Reviews. *Journal of International Marketing*, *25*(2), 88–110. https://doi.org/10.1509/jim.16.0030

Tang, T. (Ya), Fang, E. (Er), & Wang, F. (2014). Is Neutral Really Neutral? The Effects of Neutral User-Generated Content on Product Sales. *Journal of Marketing*, *78*(4), 41–58. https://doi.org/10.1509/jm.13.0301

Voss, K. E., Spangenberg, E. R., & Grohmann, B. (2003). Measuring the Hedonic and Utilitarian Dimensions of Consumer Attitude. *Journal of Marketing Research*, *40*(3), 310–320. https://doi.org/10.1509/jmkr.40.3.310.19238

Walters, G., Sparks, B., & Herington, C. (2007). The effectiveness of print advertising stimuli in evoking elaborate consumption visions for potential travelers. *Journal of Travel Research*, *46*(1), 24–34. https://doi.org/10.1177/0047287507302376

Walters, G., Sparks, B., & Herington, C. (2012). The Impact of Consumption Vision and Emotion on the Tourism Consumer's Decision Behavior. *Journal of Hospitality and Tourism Research*, *36*(3), 366–389. https://doi.org/10.1177/1096348010390815

Wang, S., Cunningham, N. R., & Eastin, M. S. (2015). The Impact of eWOM Message Characteristics on the Perceived Effectiveness of Online Consumer Reviews. *Journal of Interactive Advertising*, *15*(2), 151–159. https://doi.org/10.1080/15252019.2015.1091755

Weathers, D., Sharma, S., & Wood, S. L. (2007). Effects of online communication practices on consumer perceptions of performance uncertainty for search and experience goods. *Journal of Retailing*, *83*(4), 393–401. https://doi.org/10.1016/j.jretai.2007.03.009

Xu, P., Chen, L., & Santhanam, R. (2015). Will video be the next generation of e-commerce product reviews? Presentation format and the role of product type. *Decision Support Systems*, *73*, 85–96. https://doi.org/10.1016/j.dss.2015.03.001

Yoo, J., & Kim, M. (2014). The effects of online product presentation on consumer responses: A mental imagery perspective. *Journal of Business Research*, *67*(11), 2464–2472. https://doi.org/10.1016/j.jbusres.2014.03.006

You, Y., Vadakkepatt, G. G., & Joshi, A. M. (2015). A Meta-Analysis of Electronic Word-of-Mouth Elasticity. *Journal of Marketing*, *79*(2), 19–39. https://doi.org/10.1509/jm.14.0169