

# Effects of Online Review Valence on Consumer Attitudes and Behavioral Intentions

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This experiment was performed to specifically assess the effects of online review valence on consumer attitudes, beliefs and behavioral intentions. A split-plot analysis of variance (ANOVA) design was employed to detect possible interaction effects between product quality and review valence. The study was performed with the participation of 117 business school students from two universities in Metro Manila. Participants were randomly assigned to either a control group or one of two experimental groups testing the effects of both favorable and unfavorable movie reviews. The participants watched two films and reported their beliefs, attitudes, and behavioral intentions towards recommending or acquiring electronic copies of the films. Results of the experiment yielded main effects for movie quality and review valence; no interaction effects were observed. These findings suggest that review valence has significant effects on consumer evaluations, attitudes, and behavioral intentions to recommend and acquire the product and that the effects do not vary according to product quality. Correlational analysis and post-hoc tests revealed that review valence had a stronger influence on consumer attitudes and quality perceptions but considerably weaker effects on intentions to recommend and purchase.

*Keywords:* Online reviews, eWOM, consumer behavior, attitudes, purchase intentions

## 1 Introduction

Since the birth of the internet, both the proliferation and viewership of online product reviews has rapidly increased (Forman, Ghose, Wiesenfeld, 2008). Vast amounts of written and multimedia content evaluating the nature and quality of products and services, are readily available online today (Duan, Gu, & Whinston, 2008a; Duan, Gu, & Whinston 2008b; Lee, Park, & Han, 2011). Online reviews on a wide variety of products and services are easily accessible through search engines and social media platforms. Due to declining trust in traditional advertising, the online product review has emerged as a highly effective instrument (Sher & Lee, 2009; Lee et al., 2011; Lin, Lee, & Horng, 2011) in a company's marketing communications mix (Chen & Xie, 2008). Unsurprisingly, the effect of online product reviews on consumer behavior has become a research topic of intense academic interest, presumably due to the potential persuasive effects they have on consumer behavior and sales.

The body of empirical work on online reviews is as vast as it is diverse; studies of online reviews have been conducted by researchers from various scientific disciplines using an array of methodologies and theoretical perspectives (De Maeyer, 2012). Despite the ubiquity of online product reviews today, there remains a dearth of empirical efforts in the Philippines aimed at investigating the persuasive effects on consumer behavior they are believed to possess. As internet penetration in the Philippines continues to increase (Internet Live Stats, 2014), the relevance and importance of understanding how online reviews influence consumer behavior becomes apparent to both managers and academics.

Interest in online reviews as a marketing instrument stems largely from the expectation that the characteristics of online reviews plays a key role in influencing consumer attitudes, behaviors and consequently, firm performance (sales).

The existing literature examining the online review – sales performance relationship can be divided into two categories – those directly examining the impact of online reviews on financial measures of performance (market level analysis) such as sales, and studies that explore the influence that reviews have on consumer behaviors (individual level analysis) that ostensibly affect firm performance such as attitudes and purchase intentions (Fan, Miao, Fang, & Lin, 2013). Most of this empirical work, however, is oriented towards examining how online reviews are associated with sales, while fewer

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studies explore how the online reviews facilitate the underlying cognitive processes that are responsible for actual purchase behavior (Forman et al., 2008).

It is this area in the literature that the current study seeks to make a contribution to, by further investigating how the valence of online reviews potentially shapes consumer beliefs, attitudes and purchase intentions.

Review valence is the commonly used term to denote the tenor of an online review – whether it conveys generally negative or positive sentiment of the reviewer towards the product or service. Additionally, valence includes the descriptions (either desirable or undesirable) of a product or service (Vermeulen & Seegers, 2009).

Despite the substantial amount of extant literature on online product reviews, none have attempted to specifically measure the effects that review valence has on consumer attitudes and behaviors. Thus, the present study seeks to enrich the online review literature by examining specifically how online review valence influences consumer attitudes and behaviors. Likewise, the absence of empirical work using Philippine data presents the need to learn more about how online product reviews influence consumer behavior in a Philippine setting. Lastly, the key methodological contribution of this study is that it employs an experimental design that isolates the effects of valence on consumer attitudes and behavior (Howitt & Cramer, 2008). The use of an experimental approach is noteworthy since many of the empirical studies on online reviews and their effects utilize field research designs.

A more practical consideration is that managers face several strategic decisions regarding the use of online reviews in their marketing communications. Companies with a website, social network or e-commerce platform may control the presentation (or censure) of online reviews, consumer access to publishing online comments and setting the format of online reviews or comments (Park & Kim, 2008). Some companies may also elect to pay for positive reviews or solicit reviews written by reviewers known to hold favorable opinions towards their products. Methods such as defensive search engine optimization (SEO) may also be employed by organizations to reduce the salience and visibility of negative reviews regarding their products and services (Lakhani, 2013).

The wisdom of employing these marketing practices is highly contingent on whether review valence actually influences consumer attitudes and behavior, since they assume review valence to have persuasive effects. Therefore, results of the current study shall provide evidence for or against the various practices that attempt to influence the valence of online reviews and other related forms of electronic word-of-mouth. Likewise, it shall shed light on how consumer attitudes, intentions and behaviors are actually affected by these marketing campaigns that seek to alter or selectively present online reviews in building a more favorable image of a product or brand.

## **2 Literature Review**

### **2.1 Online Product Reviews**

An online product review is typically considered as an evaluative, product-relevant, communication, accessible to the public through the internet, that discusses the qualities of a product or service and all associated consumer experiences thereof (Chen & Xie, 2008; Litvin et al., 2008). Online product reviews may be further categorized according to authorship – either as online consumer reviews or as third party product reviews.

Online consumer reviews, which are also frequently referred to as electronic word-of-mouth (eWOM) are defined as any positive or negative, informal communications among potential, current, or former consumers regarding the usage or qualities of products and services that is publicly available through the internet (Henning-Thurau, Gwinner, Walsh, & Gremler, 2004; Litvin, Goldsmith, & Pan, 2008). Third-party product reviews on the other hand are reviews that provide product assessments based on direct testing of the product or service, or through expert evaluation (Chen & Xie, 2008). Experts and enthusiasts are therefore the usual sources of third party product reviews and not average consumers. As a consequence, third party reviews are expected to provide a more technical, objective and preference-free assessment of products and services.

There is a gathering body of evidence claiming an increased usage of online product reviews as a source of pre-purchase information (Zhang & Dellarocas, 2006; Liu, 2006; Fan et al., 2013; Forman et al., 2008; Albarq, 2014). This suggests that consumers increasingly perceive online product reviews as

a credible, accurate, and timely source of product relevant information, that optimize their consumer choices when used. As early as 2008, reputable market research institutions such as the Forrester group and Nielsen Online have reported that a considerable proportion of online adults in the United States use online product reviews before making purchase decisions (Karakaya & Barnes, 2010).

Despite the absence of any comparable information on the extent of online product review use in the Philippines, it is perhaps safe to assume that similar patterns may exist among Filipino consumers who have access to online reviews.

Much of the research on online reviews has investigated how the valence of online reviews affects sales. Taken together, the results of these studies are equivocal at best; much of the research supports the notion that the valence of online reviews predicts product sales (Godes & Mayzlin, 2004; Chevalier & Mayzlin, 2006;), whereas other authors dispute this assertion (Forman et al., 2008; Duan et al., 2008a).

In one of the earlier studies on online reviews, Godes and Mayzlin (2004) report a positive relationship between online reviews and TV show viewership. An experimental study by Senecal and Nantel (2004) found that use of product recommendations tended to coincide with greater tendency to choose the recommended products over those who did not use the product recommendations. Chevalier and Mayzlin's (2006) study on book reviews on Amazon.com and BarnesandNoble.com revealed that books with more positive reviews generally enjoy higher sales on both sites. Moreover, negative reviews were found to have greater impact than positive ones. Viewers were also discovered to have read review text and did not solely rely on quantitative review ratings. Zhu and Zhang (2009), in their study on video game reviews, observed that average review rating, variation of ratings, and review volume all affected game sales for less popular titles and online games. Zhang and Dellarocas (2006) and Liu (2006) observed similar results for movie reviews and sales.

However, other studies have yielded results that directly contradict the finding of the aforementioned body of work. Duan et al. (2008a) found a non-significant association between the valence of online movie reviews and movie sales, however, they did report that the volume of reviews may influence sales. Forman et al. (2008) performed research on how reviewer identity disclosure serves as a predictor of movie sales independent of review content. Their study found that identity-relevant information was used by viewers heuristically to assess the usefulness and relevance of online reviews and therefore was found to predict sales. However, review valence was not found to be reliably associated with sales.

Another stream of online review research has explored how some variables moderate the online review – sales relationship. There is evidence that suggests that online reviews influence sales when there is a greater acceptance of the review's message. Greater acceptance of online reviews is likely to occur when an online review is perceived as trustworthy (Kolsaker, Lee-Kelley, & Choi, 2004; Lee et al., 2011), credible (Lee et al., 2011), useful or helpful (Park, Lee, & Han, 2007), of high quality (Lin et al., 2011), sufficient in quantity or volume (Park et al., 2007; Duan et al. 2008a), when social norms in the online community are favorable to the acceptance of reviews in general (Lee et al., 2011), and when consumers have higher involvement in products being reviewed (Fan & Miao, 2012).

In addition to the empirical work that has investigated the association of online reviews and sales, some research has also examined the effects that online reviews have on underlying processes that precede sales, such as attitude formation and purchase intentions.

Park et al. (2007) studied how review quality, quantity, and involvement influence purchase intentions using elaboration likelihood model (ELM) theoretical perspective. Their study revealed that both the quality and the volume of reviews facilitated the effects that online reviews had on purchase intentions, however, for consumers with low-involvement, quantity of reviews was observed to have a greater effect on purchase intentions. A related study by Lin, Lee and Horng (2011) that also used an ELM approach examined how consumers' need for cognition (Petty & Cacioppo, 1981) may influence how online reviews influence purchase intentions.

Research by Lee et al. (2011) focuses on the effects of online consumer reviews on purchase intentions in an online mall setting. Their findings indicated that online reviews tend to influence purchase intentions to the extent that consumers trust online shopping malls. Under conditions where there is high trust in online shopping malls, there tends to be a strong association between the valence of online reviews and purchase intentions; this effect was also found to be stronger than that of online

advertisements. A similar study by Kamtarin (2012) also reported that online review valence and trust do have effects on online behavioral intentions.

A recent purchase intention study by Albarq (2014) focused on tourist's attitudes and intentions to travel to Jordan. It explored how online reviews are instrumental in shaping tourists attitudes towards a destination and their travel intentions. Albarq's study revealed that there is a positive relationship between eWOM and both tourist attitudes and intentions to travel to a destination. Albarq's results are generally supportive of the earlier findings of Arsal (2008) on how online reviews also influence travel decisions in an online travel community.

The body of empirical work reviewed provides some proof of the persuasive qualities of online reviews. The online review literature has generated evidence indicating that, in addition to effects on sales, the valence, quality and quantity of online reviews may substantially influence the attitudes, perceptions and purchase intentions of consumers. Hence, it is hypothesized that:

- H1A: Online review valence positively influences consumer's perceptions of product quality.
- H1B: Online review valence positively influences consumer attitudes towards the product.
- H1C: Online review valence positively influences consumers' recommending a product.
- H1D: Online review valence positively influences purchase intentions.

A subdomain of the online review literature that warrants more attention is the extent to which the valence of online reviews has differential effects on consumer behavior and sales depending on the quality or nature of the product.

Zhu and Zhang (2009) reported in their study on videogames that online reviews of less popular games were more influential than those for more popular mainstream games. They recommend that marketing communication strategies that involve the management of online reviews must be formulated in accordance with product and consumer characteristics.

Their study therefore raises the possibility of interaction effects between product characteristics (possibly product popularity or quality) and review valence. It is worth exploring whether effects of online reviews interact with product characteristics such as quality. Therefore, it is the objective of this paper to test the assertion that:

- H2: The persuasive effects of review valence vary according to product quality.

## **2.2 Attitude Change**

One of the recurring theoretical perspectives in the online review literature is Petty & Cacioppo's (1981) ELM theory. Studies by Park et al. (2007) and Lin (2011) studied the persuasive effects of online reviews from an ELM perspective. ELM is a dual process theory of attitude change that proposes that persuasion happens by either a central route, wherein a persuasive message is consciously evaluated in terms of its arguments and facts, or through a peripheral route where factors peripheral to the message (such as credibility of source, number of arguments) are used heuristically by the recipient in forming their attitudes. Persuasion through either the central or peripheral routes of attitude change is determined by the extent to which the recipient of the persuasive message is both motivated and capable of exerting cognitive effort to evaluate the facts and arguments of a persuasive message. Greater motivation and ability to exert cognitive effort tends to cause attitude change through the central route whereas an absence of these conditions predisposes one to the peripheral route (Cacioppo & Petty, 1984; Petty & Cacioppo, 1986).

Online reviews can produce attitude change through either of the routes of the ELM. The valence of review content may present the audience with valid arguments for or against the adoption of a product or service and therefore change attitudes through the central route. Peripherally, extrinsic factors such as the volume of reviews, identity of reviewers, attractiveness and trustworthiness of source may also produce attitude change.

As an alternative to the ELM perspective assumed by other authors, priming effects, may also explain the attitude change produced by online reviews. Priming, as defined by Neely (2003), is the phenomena involving, "the recognition of a certain stimulus affected by prior presentation of the same or similar stimuli" (p. 272). It refers to the effect that preceding stimuli has on subsequent recognition

or interpretation. For instance, when interpreting the meaning of a word with dual meaning, such as “bank”, (which may either be interpreted as either a financial institution or areas flanking a river) the presentation of stimuli that is related to either of the two interpretations will facilitate recognition of their respective interpretations (Sternberg, 2011). More specifically, if the presentation of the word “bank” is preceded by images related to finances or money, this is likely to facilitate the financial institution interpretation of the word.

Priming effects were originally proposed in Quillian’s (1967) theory of semantic memory search and later elaborated upon by Collins and Loftus’ (1975) spreading activation theory of semantic processing. These theories propose that information is stored in memory in the form of nodes; each node representing a concept. In this system of memory, nodes are interconnected by associative pathways and each node has an activation threshold (Higgins, Rholes, & Jones, 1977). When priming stimuli is introduced, it activates a particular node with activation spreading to nearby, related concepts within memory thereby making them more accessible. When there is no more activation of related nodes, activation levels of a node return to the normal state; therefore, primes tend to fade with time (Higgins, Bargh, & Lombardi, 1985).

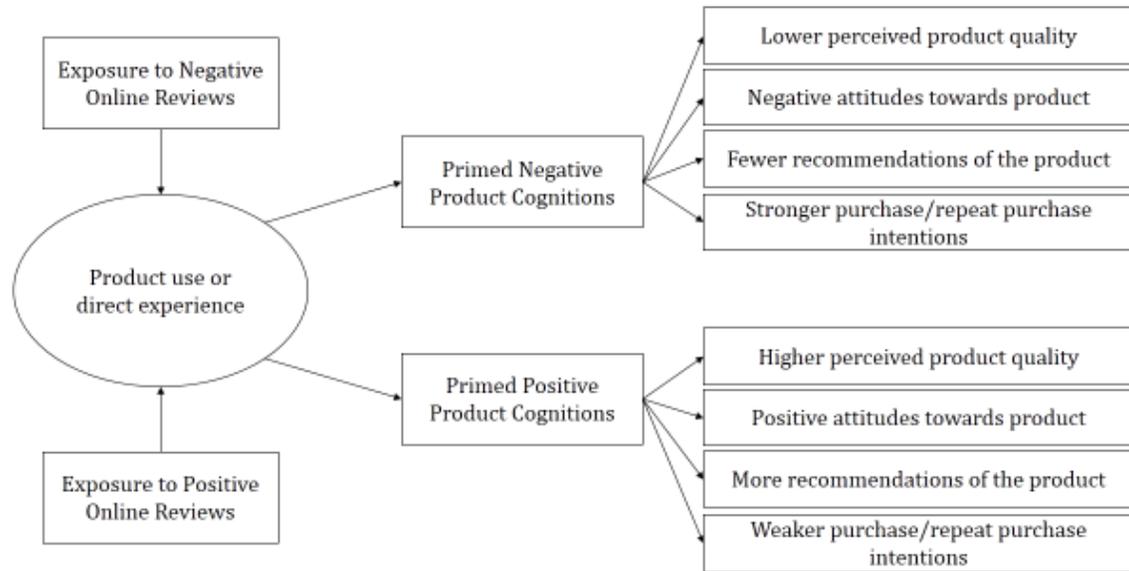
Priming effects have been found to have two important qualities: Intensity and recency (Srull & Wyer, 1980). Intensity pertains to either the frequency of exposure to the prime or its duration. Higher intensity primes tend to yield stronger priming effects. Recency is the amount of time between priming and measurement of the relevant behavior. The more recent a prime, the greater the priming effect. Viewed from this theoretical perspective, positive or negatively valenced online reviews may prime positive and negative cognitions making them more salient during the attitude formation process.

Consumer attitudes may therefore be changed through either ELM processes or priming effects wherein attitude change produced through priming or through the peripheral route of the ELM would be more transient compared to change produced through the ELM’s central route.

### **3 Conceptual Framework**

The persuasive effect of online reviews has remained the focus of interest in most of the research that has been conducted on online reviews. In studies that investigate the association between online reviews and sales, it is typically implied that the purchase behavior caused by exposure to online reviews is moderated by processes of attitude change. This study adopts a similar perspective and assumes that online reviews do produce attitude change by increasing the salience of product-relevant cognitions that influence the way the consumer perceives a product. Whether a consumer views a product favorably or unfavorably typically has some bearing on their behavioral intentions towards a product (recommending it or actually purchasing it). The present study avoids drawing any conclusions about the specific psychological mechanisms responsible for attitude change and purchase behavior since this remains beyond the scope of the study.

Moreover, from a planned behavior perspective (Ajzen, 1991), the influence of online reviews extends only to the behavioral intentions of the consumer; other contextual factors, unrelated to consumer attitudes, that may still influence actual behavior, are beyond the influence of online reviews. Hence, studying how online review valence influences behavioral intentions remains a reasonable research objective in the context of attitude change process. Figure 1 presents the proposed conceptual framework of the present study.

**Figure 1. Conceptual Framework of Attitude Change and its Effects on Behavioral Intentions**

## 4 Research Objectives

Much of the reviewed literature on online reviews' influence on attitudes and behavioral intentions employ field research designs. Due to the nature of these studies, it is unclear which characteristics of an online review actually influences attitude change and behavioral intentions, and if so, to what extent. Using an experimental design, this study specifically aims to isolate the effects that online review valence has on attitude change and behavioral intentions.

In the preceding sections, it was noted that online reviews may have varying degrees of impact on consumer attitudes and behavioral intentions, depending on the quality of the product being reviewed. The reputation of some products may be enhanced or harmed more by positive or negative online reviews. Online review valence may have differential effects on attitude change and behavioral intentions – this aspect of online reviews shall be fully explored by the present study.

In sum, this study seeks to answer the following research questions:

- 1) Does online review valence influence consumer attitudes and behavioral intentions?
- 2) Does the effect of online reviews vary according to the quality of the product being reviewed?

## 5 Research Design

### 5.1 Participants

A purposive sample of business students (N=117) from the University of the Philippines, Diliman, Cesar E.A. Virata School of Business (N=72) and the Ateneo de Manila University, John Gokongwei School of Management (N=45) participated in the experiment in exchange for a ticket in a consumer electronics raffle. Upper class and middle class university students were chosen for the experiment not only because of logistical considerations, but since this demographic is known to frequently read online reviews. Participants were told that they were assuming the role of film critic in the experiment. Second, 3rd and 4th year business students were recruited for the experiment from seven different sections in the two business schools.

The sample was 44% male and 56% female; average age of the participants was 18.56 years. The participation rate for the experiment was 67%, as 117 out of the 173 students invited participated. Participants were asked to sign a waiver prior to the experiment since some of the films to be presented had explicit content.

**Table 1. Sample Profile**

<b>Variable</b>	<b>N</b>	<b>%</b>
<b>Sex</b>		
Male	52	44%
Female	65	56%
Total	117	100%
<b>Age</b>		
17	13	11%
18	52	44%
19	28	24%
20	22	19%
21	2	2%
Total	117	100%
<b>School</b>		
U.P. Diliman	72	62%
Ateneo de Manila	45	38%
Total	117	100%

## 5.2 Experiment Stimuli

Film was chosen as the product category for the experiment due to several considerations. Firstly, online reviews have been shown to have a greater influence on experiential purchases since assessment of product quality for these products tends to be more subjective and affected by personal preferences (Duan et al., 2008b). Actual product usage is far less difficult to administer, and more logistically feasible for movies (mere movie screening) in comparison to other categories of experiential products. Moreover, participant involvement for movies is, on average, higher than involvement with other product categories; it is reasonable to assume that a majority of students are more inclined to watch a film instead of using some other experiential product (i.e., videogames, travel). Lastly, there is a vast amount of empirical work on how movie reviews influences sales (Zhang & Dellarocas, 2006; Dellarocas, Zhang, & Awad, 2007; Liu, 2006; Duan, 2008a; Duan, 2008b) the current study wishes to contribute to this body of work by shedding light on how online review valence influences consumers to watch a movie.

In order to select films for the experiment, participants were asked to accomplish a survey questionnaire on movie preferences where they indicated movie genres that they typically watched and specific movies that they particularly liked. The survey also gathered data on online review usage, and specific websites or sources of online reviews that were perceived as trustworthy by participants.

From the initial survey, the most popular genre for that sample was comedy and participants reported that they typically read online reviews before they watched a film, however some claimed that they read reviews after to validate their assessment of a film. Participants reported that the two online platforms with the highest perceived credibility and trustworthiness were [www.metacritic.com](http://www.metacritic.com) and [www.rottentomatoes.com](http://www.rottentomatoes.com).

After the initial survey, a follow-up survey with 160 pairs of recent movie titles between 2004 and 2014 was administered to identify movies that a majority of the sample have never watched. Based on the results of this survey, a short list of 26 movies was created serving as the pool from where the final two films (both a high and a low quality film) to be presented were to be selected from.

Online reviews and numerical ratings were acquired from [www.metacritic.com](http://www.metacritic.com) and [www.rottentomatoes.com](http://www.rottentomatoes.com) were evaluated to identify prospective pairs of related high and low quality films (based on the reviews). Based on the evaluation performed, the author selected two films – *Borat: Cultural Learnings of America for Make Benefit Glorious Nation of Kazakhstan* (Charles, 2006) and

Bruno (Charles, 2009). These movies were chosen over other films due to the following considerations: 1) Both films are comedy films that use the “mockumentary” or comedic documentary film making style, 2) Both films star the same lead actor, Sacha Baron Cohen and are directed by Larry Charles, 3) Both films are approximately an hour and a half in length, 4) Approximately 92% of the sample reported never having seen either of the films (108 out of 117 reported not seeing Borat and 115 did not see Bruno), 5) The difference in quantitative evaluations across several review platforms was significantly large (Bruno was rated 5.8/10 and 68% fresh while Borat was rated 8.9 and 91% fresh on [www.metacritic.com](http://www.metacritic.com) and [www.rottentomatoes.com](http://www.rottentomatoes.com) respectively).

After selecting the films for the experiment, a separate sample of 30 business school students, similar in profile to the study sample, were selected to perform the following tasks for the manipulation check of the experiment. The students were divided into 2 groups of 15, the first group viewing Borat first, followed by Bruno and the second group viewing the films in reverse order. This measure was taken to minimize any presentation order effects that may color their perception of the two films. After viewing both films, the participants were then asked to evaluate both films quantitatively (0 to 10, 0 representing dislike of the film, 10 representing positive regard for the film) and were asked to write a 1 page review for each film. The results of the pretest, were supportive of the reviews of [metacritic.com](http://www.metacritic.com) and [rottentomatoes.com](http://www.rottentomatoes.com); the mean preference for Borat was 8.81 whereas Bruno garnered a 4.95 rating, thus confirming the high and low quality designations of the respective films. Written reviews suggest that Borat had an acceptable degree of offensive content but was still seen as a clever comedy film that had a worthwhile message; Bruno was negatively perceived because of its overly offensive humor, with some of its jokes failing to be funny, and the movie, in general, depicting homosexuals in a highly denigrating manner.

After selecting Borat and Bruno as the stimuli for the experiment, a sample of 60 reviews was taken from both [metacritic.com](http://www.metacritic.com) and [rottentomatoes.com](http://www.rottentomatoes.com) for each of the films. The participants were then given the reviews and asked to rank the reviews according to perceived valence (Most positive to most negative). A set of 10 viewer reviews (online consumer reviews) and 10 critic reviews (third-party online reviews) were selected for each film as stimuli in the actual experiment. 8 out of 10 of the reviews (for both the critic and consumer reviews) reflected the intended valence of stimuli (either positive or negative), while one neutral and one contradictory review were included to reduce one-sidedness of the set of reviews and to increase trustworthiness and credibility of the set of reviews.

### 5.3 Procedure

Participants in the experiment were randomly assigned to viewing groups of between 10-12 individuals and assigned to one of three experimental conditions: negative reviews, positive reviews and a control condition where no reviews were presented. The aforementioned combined critic and user reviews described in section 5.2 were presented to the experimental groups.

Random assignment is a practice in social experiments that is performed to increase the likelihood that the observed between-groups variance is caused by the manipulated variable and not due to other confounding factors (Howitt & Cramer, 2008).

Groups were assigned an order for the presentation of the two films – five of the groups viewed Bruno first, then Borat, while the remaining six viewed the films in reverse order. This precaution was taken to reduce any presentation order or familiarity effects. A total of 117 participants in 11 groups watched both films, however, due to non-participation of some of the groups, participants were unequally distributed across the three experimental conditions.

Both of the experimental groups were presented their respective online review stimuli before they viewed the movie. The online reviews were presented in their original form as screenshots of the online review sites in a slide presentation. After viewing both films, and both presentations of online reviews for each movie, the participants were then asked to accomplish a one page survey to provide their assessment of both films that they watched.

Due to the highly graphic and mature nature of Bruno (nudity, explicit sexual activity) participants were debriefed to explain the purpose of the study and to put into context the selection of the films that they were requested to watch.

Results of the survey were analyzed using SPSS 17.0. The general linear model function of SPSS was used to analyze the data for each of the 5 survey questions using a 2x3 split-plot analysis of variance

(ANOVA) model with film quality as the within-subjects variable and review valence as the between-subjects variable. Scheffe post-hoc tests were performed for the between-subjects variable (review valence) to identify pairs of group means with statistically significant differences. Additional correlational, reliability and descriptive statistics analysis was also performed.

#### 5.4 Survey Instrument

Participants in the survey were given a one-page survey form intended to gather demographic data and consumer sentiment relevant to the two films. The survey generated data on participants' perceptions of the quality of the films on a semantic scale of 0 to 10, 0 representing poor film quality and 10 representing excellent film quality.

Participants also responded to four additional items measuring consumer attitudes and intentions on a five-point Likert scale from 1 to 5; 1 = strong disagreement and 5 = strong agreement. Participants were asked about the attitudes towards the product ("I liked/enjoyed the movie"); their willingness to recommend the movie ("I would recommend this movie to others"); and their willingness to purchase an electronic or DVD copy of the movie ("I would buy a digital or DVD copy of this movie").

Since the sample consists of college students who may have limited financial ability to buy a legitimate copy of a movie, a final item measuring their intentions to download the films through online file sharing facilities such as torrents ("I would download a copy of this movie") was included. Though downloading an electronic copy of a film through file sharing is in the strictest sense free, it still represents a token commitment of resources (time, cost of ISP) by the individual to acquire the movie and is somewhat less of a commitment than an actual purchase, but more than a recommendation.

The instrument was pretested on the pretest sample; an alpha of .917 was obtained indicating that the scale possesses good internal consistency and reliability.

## 6 Results and Discussion

Of the 117 students who participated in the experiment, 53 participants participated under the negative review condition, 33 in the positive condition and 31 were part of the control group that received no online review stimuli. Reliability of the ten-item instrument (five attitude and behavioral measures for each film) was acceptable at  $\alpha=.897$ .

As a validation of the manipulation check, an independent T-test on the perceived quality of the two films for the entire sample revealed that Borat ( $M= 5.38$ ) was significantly better received than Bruno ( $M= 4.37$ ) confirming the high-quality, low quality assignments in the experiment.

Five 2x3 Split-plot ANOVA were performed – one for each of the aforementioned measures (perceived quality, attitudes towards the product, intention to recommend, intention to purchase, & intention to download). The ANOVA results are presented in Tables 2. Some ANOVA results reflect corrections using the Greenhouse-Geisser method due to some violations of sphericity assumptions.

**Table 2. ANOVA Results – Group Means**

Film Quality	Review Valence	Quality		Attitude		Recommend		Purchase		Download		N
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	
High Quality Film (Borat)	Negative Valence	4.23	2.14	2.85	1.26	2.09	1.11	1.36	0.68	1.74	0.92	53
	Control	5.19	2.54	3.77	0.72	2.90	1.30	1.48	0.68	2.00	1.03	31
	Positive Valence	7.27	1.77	4.18	0.73	3.21	1.02	1.88	1.02	2.42	1.06	33
Low Quality Film (Bruno)	Negative Valence	3.25	2.00	2.19	1.19	1.62	0.95	1.26	0.65	1.43	0.75	53
	Control	4.45	2.54	3.23	0.92	2.26	1.21	1.26	0.44	1.61	0.84	31
	Positive Valence	6.15	2.21	3.27	1.23	2.33	1.22	1.67	0.92	1.88	1.02	33

The ANOVA results yielded significant main effects for both of the independent variables – film quality and online review valence, across all of the measures. These results are supportive of Hypotheses 1A to 1D as it suggests that online reviews with positive valence tended to produce a

generally more positive disposition towards the film whereas negative reviews produced the opposite effect.

Though significant main effects were observed for both independent variables, there were no significant interaction effects observed. These findings contrast with the findings of Zhu and Zhang (2009) and do not support the notion that online reviews produce differential effects on attitudes or behavioral intentions depending on product quality. Hypothesis 2 is therefore not supported by the findings of this study.

For the between-subjects variable (Review valence), the Scheffe post-hoc test was performed to compare and contrast the means of the three experimental conditions. Table 3 presents the summarized results of the post-hoc test.

**Table 3. Scheffe Post-hoc Tests**

Contrast	Quality			Attitude			Recommend			Purchase			Download		
	Diff	SE	P	Diff	SE	P	Diff	SE	P	Diff	SE	P	Diff	SE	P
Positive vs. Control	1.89	0.49	0.00*	0.23	0.23	0.61	0.19	0.25	0.75	0.40	0.18	0.08	0.35	0.21	0.27*
Negative vs. Control	-1.09	0.45	0.06	-0.98	0.21	0.00*	-0.72	0.23	0.01*	-0.06	0.16	0.93	-0.22	0.19	0.52
Positive vs. Negative	2.98	0.44	0.00*	1.21	0.20	0.00*	0.91	0.23	0.00*	0.46	0.16	0.02*	0.57	0.19	0.01*

\*P<.05

The comparisons for quality indicate that positive reviews produced significant quality perception effects (beyond what could be expected in the absence of reviews) whereas negative reviews did not. For attitudes, negative reviews appeared to have caused significant negative attitude change over the control condition while positive reviews had no such effect. These results support previously reported negativity bias (Cui, Lui, & Guo, 2012; Chevalier & Mayzlin, 2006)

The same pattern was observed for recommendation intentions, where negative reviews significantly reduced intentions to recommend and positive reviews did not motivate substantial increased recommendation of the product.

For both the purchase and download intentions, there were significant differences observed between the effects of negative and positive reviews, however only positive reviews had a significant effect on intentions to download a film.

Evidence from the experiment clearly indicates that though online review valence may have had significant effects on participants' quality perceptions and attitudes towards the product, they had far less impressive effects on purchase intentions.

Table 4 presents the correlation matrix of variables included in the study.

**Table 4. Correlation Matrix**

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Age	1												
2. Sex	.355**	1											
High Quality Film (Borat)													
3. Perceived Quality	-.011	.078	1										
4. Attitude	.133	.158	.739**	1									
5. Recommendation	.139	.147	.601**	.703**	1								
6. Download Intention	.017	.168	.641**	.647**	.686**	1							
7. Purchase Intention	.108	.085	.443**	.452**	.510**	.670**	1						
Low Quality Film (Bruno)													
8. Perceived Quality	.091	.028	.726**	.561**	.522**	.556**	.471**	1					
9. Attitude	.226*	.125	.419**	.571**	.485**	.424**	.386**	.717**	1				
10. Recommendation	.205*	.128	.453**	.441**	.682**	.538**	.506**	.667**	.707**	1			
11. Download Intention	.066	.108	.488**	.425**	.542**	.705**	.653**	.630**	.614**	.682**	1		
12. Purchase Intention	.068	.035	.401**	.336**	.463**	.528**	.802**	.552**	.493**	.616**	.765**	1	
13. Review Valence	.179	.080	.504**	.498**	.392**	.279**	.260**	.484**	.388**	.276**	.213*	.222*	1

\*p<.05, \*\*p<.01

The results of the correlation matrix support the observation that online review valence is moderately associated with product quality perceptions and attitudes towards the product yet only weakly associated with intentions to acquire the product or to even recommend it to others. This implies that though consumers' perceptions of product quality may be strongly swayed by the valence of the online reviews, intentions to recommend and to acquire the product may be influenced by factors other than their quality perceptions and attitudes towards the product.

The data also indicates that quality perceptions are strongly associated with attitudes towards the product, indicating that when participants evaluated a film favorably, they also tended to like it. Though attitudes were significantly associated with all of the behavioral intentions, the association with intentions to recommend the film or to download it were highly robust whereas the association with purchase intentions was comparatively more modest.

## **7 Limitations of the Study**

Due to the experimental nature of the present study, one of its major limitations is the applicability of the results to other online audiences and product categories. Though the online review stimuli was administered in a manner simulating what occurs in a natural consumer setting, it may be argued that in some instances, exposure to online reviews, quickly followed by direct use of the product may not occur. Travelers for instance, may encounter a substantially longer time interval between reading online reviews of a travel destination and experiencing the actual trip. The gap between exposure to the online review and actual product use may reduce the potency of the attitude change effects of the review (Srull & Wyer, 1980). As a result, juxtaposition of the online review and direct product experience, similar to the experimental task in this study, may not be possible for other products or consumer scenarios.

Additionally, the results of this study are only applicable to consumers similar in profile to the university students who participated in the experiment. Though the selected demographic does frequently use online reviews, they do not necessarily represent a majority of internet users who create or read online reviews. Therefore, caution must be taken in generalizing the results of this study to other groups of online users who differ from the study sample.

Lastly, though the results of the study reflect significant effects caused by online review valence, these may be partially attributed to some of the experimental conditions inherent to the design of the study. Factors such as trustworthiness and credibility of the source, review volume, review usefulness, and buyer involvement were controlled for in the experiment. It stands to reason that valence has the observed effects on consumer attitudes and behavior only to the extent that such conditions are present.

## **8 Directions for Future Research**

From both an academic and practitioner's perspective, there are two compelling questions that remain unanswered by the current study that may provide direction for future research. The first line of inquiry involves a comparison of the persuasive effects of the key aspects (e.g., review volume, source credibility, reviewer identity) of online reviews that have been identified in the literature. Practitioners would be interested to know which aspects of online reviews have the greatest impact on attitude change. Further research in this domain would allow comparisons of the persuasive effects of the key variables; the results of these contrasts shall have corresponding eWOM strategy implications.

This contrast of variables may be performed experimentally through a multi-factorial ANOVA design; an extra benefit of such an approach would be the exploration of possible interaction effects between online review variables.

The second practical extension of the present study is determining whether the persuasive effects of online reviews dissipate over time, the extent of decay, and the rate at which dissipation occurs. Empirical work of this nature would justify the need to employ marketing strategies such as defensive SEO or online public relations campaigns or it may suggest that "waiting it out" or simply ignoring negative reviews until consumers' forget them, may be a more effective strategy.

This research question may be adequately explored by performing a longitudinal study wherein consumer attitudes and intentions are periodically measured over a period of time after exposure to online reviews of varying valences (positive, negative, and no exposure).

## **9 Conclusions and Managerial Implications**

This study successfully demonstrated how review valence influenced the participant's assessment of product quality, attitudes, and intentions to recommend, purchase and download movies. Positive reviews tended to produce more favorable dispositions towards both films whereas negative reviews brought about the opposite effect. However, post-hoc analysis revealed that review valence had stronger effects on consumer attitudes and perceptions of quality and was less effective in compelling actual purchase intentions. Post-hoc tests revealed a negativity bias suggesting that negatively valenced reviews had a greater impact than their positive counterparts.

Consistent with the findings of some online review research (Senecal & Nantel, 2004; Park et al., 2007; Arsal, 2008; Albarq, 2014), online reviews in the present study have been shown to influence consumer attitudes and behavioral intentions. However, the unimpressive effect sizes for behavioral intentions may also be interpreted as evidence supporting the body of research that questions the ability of online reviews to facilitate sales (Forman et al., 2008; Duan, 2008a).

The results of the study are unsurprising in the context of past research claiming that the effects of an informational cue or stimuli (online review) are reduced when the response requires a greater personal commitment (Fishbein, 1963). In the present study, intentions to download or to purchase a movie involve a greater degree of personal commitment than mere preference or recommending the film.

The hypothesized differential effects of online review valence were not observed in the results of the study. In the experiment, the assessment of both the low and high quality films were similarly affected by negative and positive reviews.

These findings generate some insights for marketing managers. As shown by the present study, online reviews certainly influence consumer evaluations and behavioral intentions, yet effects sizes are less robust for the latter compared to the former. For movies, it is possible that viewers may hold a high opinion of a film, yet due to preference, timing, or some other considerations, forego acquiring or recommending the film to others. In sum, a positive attitude or opinion towards a product is a necessary but not sufficient precondition for consumers to consider acquiring or recommending a product.

It is therefore proposed that marketing managers view online product reviews more as a tool for maintaining generally positive consumer attitudes towards the product rather than as a direct driver of sales.

Lastly, the strategic use of online reviews and other forms of eWOM must be approached by practitioners with some degree of caution. Encouraging online consumer reviews through either a company website, social media platform or an online forum may help generate more positive eWOM. However, providing such online facilities to consumers without the appropriate controls brings with it the risk of consumers posting negative reviews that may have far more persuasive effects than positive reviews due to possible negativity biases.

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