Online Video Reviews Helpfulness: Exploratory Study

Full papers

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Abstract

Online reviews assist consumers in making an informed purchase decision and they became a trusted source for product information. This study aims to investigate online video reviews on YouTube to understand what are the most commonly reviewed products and what are the factors of YouTube video reviews which contribute to review helpfulness. We use qualitative and quantitative techniques as research methodologies. The results show that major categories reviewed on YouTube are video games, movies, and technology. Exploratory factor analysis revealed four important factors that may determine online video review helpfulness which are review popularity, comments, video information, and review depth. A conceptual model is introduced based on the factor analysis. The study has significant implications to research as it provides new insights regarding the role of online video reviews in purchases decision making process.

Keywords

Social commerce, social computing, online video review, online review helpfulness, YouTube, economics of information theory.

Introduction

The ability to post online product reviews allows consumers to exert increased influence over products by being active online contributors (Riegner, 2007). Empirical evidence in research demonstrates that consumer reviews have positive influence on purchase decision as it reduces the risk and uncertainty associated with online shopping (Dellarocas, 2003; Mudambi and Schuff, 2010). Online reviews help solve the problem that consumers face where incomplete information regarding product quality and consumer experience exist (Mudambi and Schuff, 2010). Peer-generated reviews posted on the web allow consumers to share experiences with products, brands, companies, and individual sellers (Bughin et.al. 2010; Mudambi and Schuff, 2010). Online reviews increase consumer visits, cooperation, improve the social presence of the website, and allow consumers to make informed purchase decisions (Kumar and Benbasat 2006; Riegner, 2007; Mudambi and Schuff, 2010).

YouTube (www.youtube.com) introduces a new means to post consumer reviews. YouTube is a website where videos can be easily produced, uploaded and shared on the web. YouTube offers a platform for individuals to engage with others and share their experiences via several interactive features which include user comments and the ability to publicly state whether the video is liked or disliked. YouTube also provides convenient means for users to form social ties and subscription networks (Susarla et.al. 2012). The importance of YouTube to the evolving social web cannot be overstated as the number of videos watched online increased 800% in the past 6 years, 300 hours of videos are uploaded every minute, and 71% of companies plan to increase their online video marketing spending (Jarboe, 2015). In 2011, YouTube became the world's second largest search engine on the internet, behind its parent company Google (Edwards, 2015).

This research focuses on one type of videos available on YouTube that is online reviews to address the following two questions: 1) what are the most common product categories reviewed on YouTube? and, 2) what are the factors which contribute to helpful online video reviews? Using content analysis and factor analysis we develop a conceptual model of online video reviews that will help predict review helpfulness. The theoretical foundation for the- model is found in the economics of information theory. The findings of this research will contribute to a better understanding of online video reviews on YouTube and their implications to research and practice.

Theoretical Foundation

Increased popularity of social media websites like YouTube, Facebook, and Twitter has introduced new ecommerce business models. This has led to the introduction of social commerce (s-commerce) which uses social media to facilitate and support consumer interactions (Liang and Turban, 2011; Wang and Zhang, 2012). Ultimately, s-commerce allows consumers to participate in the marketing process and assist other consumers in acquiring new products or services through building online communities (Stephen and Toubia, 2010). According to Liang and Turban (2011), s-commerce has three attributes: social media technologies, community interactions, and commercial activities. YouTube is a social media which enables consumers to interact and share their opinions and experiences with each other. Although YouTube does not sell products and services, video reviews on YouTube have the potential to affect consumers' attitude and assist them in making an informed purchase decision in the form of sales driven by referrals.

Word of mouth has been valued by consumers and it may be more powerful than traditional forms of advertising methods designed by marketers (Bughin et.al. 2010). Word of mouth is a recommendation made about a good or service by a consumer to a prospective consumer. It is considered an unpaid marketing channel that is controlled by consumers independent of the market (Brown et. al. 2007). Consumers often find word of mouth recommendations to be more reliable and trustworthy than traditional advertising agencies commercials (Brown et. al. 2007). Word of mouth has become more important due to the continuous growth of online shopping. On one hand, online shopping offers a convenient environment for consumers in terms of accessing wide variety of goods, easy price comparison, and low prices. On the other hand, it is surrounded with high uncertainty and risk to consumers especially less experienced ones (Bughin et.al. 2010).

Web 2.0 and especially social networks add a new importance to word of mouth. The popularity of social networks, high usage of social networks, and the ability to form groups of interest enabled consumers to freely share their opinion in products on a large scale; moving word of mouth from a bidirectional communication to a one – to – many communication (Bughin et.al. 2010). This change led to the emergence of a new group of influential reviewers on the web, those who provide their evaluation of products independent from companies. Ecommerce websites – especially business to consumers- provide consumers with feedback mechanisms to share their opinions and experiences with products. This communication between consumers grew tremendously in the past decade, created consumer networks, and influenced consumer behavior and consumer decision process (Dellarocas, 2003; Bughin et.al. 2010; Mudambi and Schuff, 2010). The growth in word of mouth online can be attributed to consumers becoming more sophisticated online shoppers, skepticism in traditional advertising communication, and incomplete information about products (Dellarocas, 2003; Mudambi and Schuff, 2010). A study shows that 79% of consumers trust online reviews the same way they trust personal recommendations and 62% of youth in the 18-24 year age bracket would buy a product recommended by a contributor on YouTube (Anderson, 2013). Interpersonal communication theories show that word of mouth has a large influence on people's behavior. However, these theories do not necessarily apply for online word of mouth, mainly because traditional theories focus on face-to-face interaction in a close geographic proximity (Brown et. al. 2007).

Online reviews have evolved over time; however, the most dominant form is still written reviews where an open-ended comment about the product, the seller, or the company which manufactures the product is posted by consumers based on their personal experiences. Written reviews are typically accompanied with a star rating which serves as a summary, indication of customer satisfaction, and a way for the businesses to aggregate the reviews. Online reviews became more popular and businesses managed to find different ways to improve them, they provided the opportunity for consumers to rate reviews based on how helpful

they are, some websites enabled the seller or producer to respond to negative reviews, and other websites allowed consumers to post their own pictures of products while in use. As online reviews are available in more online retailer websites, research attempts to evaluate the characteristics of helpful online reviews which aid in the purchase decision process (Mudambi and Schuff; 2010).

Research has examined online reviews, specifically investigating the characteristics of textual reviews (Forman et al. 2008, Mudambi and Schuff. 2010). A key problem with majority of online reviews is that consumers must evaluate the reviewer based on impersonal text-based communication (Brown et.al. 2007). Knowledge of the individual's attributes and background is limited or absent and consumers have had little information in the past about who produces reviews and why. YouTube video reviews have the potential to dramatically overcome these limitations as reviewers are not anonymous anymore. In a video review, consumers are able to see reviewers, judge their character and knowledge, and follow their channel to watch more of their reviews. YouTube videos have the potential to overcome many limitations of written reviews especially when it comes to the familiarity of the reviewers and trust of the information they provide. We argue that word-of-mouth delivered via YouTube could be the closest electronic WOM (sometimes shorted as eWOM) to the traditional face-to-face conversations.

Online Review Helpfulness

Following Mudambi and Schuff (2010), we define a helpful online review as "a peer-generated product evaluation that facilitates the consumer's purchase decision process" (Mudambi and Schuff, 2010, P.2). Mudambi and Schuff (2010) argue that the economics of information theory provides a relevant theoretical foundation for the role of online reviews in the consumer purchase decision process. The economics of information theory recognizes that information is imperfect and could be expensive to obtain (Stigler. 1961, Stiglitz. 2000). The complexity and rapid improvement of products today, especially technical products, increases uncertainty and makes it difficult for consumers to make a purchase decision. Increased complexity helps explains why consumers search the internet at higher rates and read reviews before committing to purchase a product.

Mudambi and Schuff (2010) introduce a model which conceptualizes what makes a helpful online review; the researchers argue there is a strong connection between perceived diagnosticity of a review and perceived helpfulness. Product diagnosticity indicates the extent to which a website provides consumers with helpful information to evaluate products quality (Pavlou et al. 2007). A helpful online review is one which includes information that assists online consumers in evaluating the product, familiarizing them with the product, and understand the product (Jiang and Benbasat, 2007).

Previous research has focused on textual online reviews (Forman et al. 2008, Mudambi and Schuff 2010), this research seeks to find factors that contribute to helpful video reviews on YouTube. We argue that YouTube reviews have unique characteristics since they are video recorded reviews accompanied with several interactive features such as comments, rating, and subscribing. These features of video reviews improve product diagnosticity by providing rich, engaging, and better quality product information. In this study, we propose a conceptual model for online video reviews helpfulness that takes into consideration these unique characteristics.

Research Methodology

Qualitative and quantitative techniques were used as research methodologies for this investigation. Content analysis was conducted where relevant literature was reviewed, video reviews were watched, comments were read, and comments of textual reviews were read to compare and contrast characteristics based on the medium. The content analysis revealed the categories of products reviewed on YouTube along with several characteristics which may contribute to a helpful online video review. A survey was developed to elicit consumer feedback regarding which characteristics of those uncovered in the content analysis are perceived as important to determine a helpful online video review on YouTube. All items were rated on a seven-point Likert-type scale from 1 = 'Extremely not Helpful' to 7 = 'Extremely Helpful'. Exploratory factor analysis was performed to determine the appropriate constructs based on the survey items. The survey is largely exploratory and used methods such as factor analysis to find commonalities among the questions asked. Factor analysis was used to partition questions into meaningful groups. Constructs were then generated based on the factor analysis. Exploratory methods and interpretation of

the results can lead to subsequent hypothesis generation that can be confirmed or disproved by additional data collection (Joreskog, 1969). Exploratory methods can be used to generate hypotheses which can be subsequently tested using confirmatory methods (Jaeger, 1998). The goal of exploratory research is to gain new insights into a phenomenon and develop testable hypotheses.

Subjects for the survey were recruited from public university students in the United States, a convenience sample of 154 students were asked to participate in this survey. A total of 63 responses were retrieved and analyzed which represent an approximate 41% response rate. We believe that the sample used in this study is adequate since the majority of the subjects are millennials who are considered an important demographic for both commercial and technologic factors (Jansen et al. 2011). Millennials characteristics include economic purchasing power, first adopters, use technology at a higher range, and more socially connected (Jansen et al. 2011; Whiting and Williams, 2013).

Results

Content Analysis

Data was collected for this study from YouTube.com. Hundreds of video reviews on YouTube were watched in an inductive approach to identify the characteristics of a helpful video review. The content analysis included watching the videos, reading the comments, and recording the video's statistics. YouTube was chosen for this study because, as the largest online video streaming site, it is home to the largest number of online video reviews. The analysis of the online videos was conducted in two phases. The objective of the first phase was to develop an online video review categorization scheme. The search for the word "review" on YouTube resulted in over 100 million video reviews. Although this amount of review videos is an indication of the popularity of this form of reviews, going about all these videos was not possible. Therefore, in order to obtain a reasonable sample, we applied a search filter to retrieve video reviews posted within the last 30 days which resulted in 24,100 video reviews across a variety of product categories presented in Table1. The dominant category was video game reviews with 77% of videos, followed by movie reviews with 12% of videos, then technology product reviews with 9%, and 2% for all other categories which included cars, toys, and apparel among other things.

In the second phase we focused on a specific product category to unveil the attributes which contribute to a helpful online video review, this product category was tablet computers and mobile phones. We believe that choosing this category is consistent with the literature on why people seek online Word-of-Mouth. The market offers many different choices, brands, and specifications which make it hard for consumers to decide which product to purchase. Consumers became overloaded, skeptical, and seek information to make a purchase decision. We believe that reviews posted on YouTube could potentially provide helpful information for consumers to overcome these difficulties and make an informed purchase decision.

In this phase, the researchers watched and analyzed over 250 video reviews to determine the attributes which contribute to a helpful online video review. There was not any time constraint or search filters applied on reviews watched in this phase. A major difference between online video reviews and traditional text reviews is that YouTube online video reviews include many different types of content. People who view the video review have the opportunity to leave an extended comment (or review) of the online video review, like/dislike, and add to favorite. Because there is no direct measure of online video content in the textual YouTube data, a content analysis on each video was performed by watching the video to assess how different characteristics in the video contribute to a helpful review. The comments section was read to find additional characteristics that may contribute to a helpful review. Seventeen characteristics were identified during this investigation and are illustrated in Table 2. Many of these characteristics are easily extracted directly from the statistics which YouTube provide for most videos, other characteristics (e.g. level of information), can only be identified by watching the content of the video itself.

Category	Percentage of Review Videos
Video Games	77%
Movies	12%
Technology	9%
Other	2%

Table 1. Video Review Categories

	Characteristic	Description
1	Video title	The title of the video as it appears in YouTube
2	Reviewer's name	The name of the person or organization that posted the video
3	Reviewer's type	Amateur or Experienced
4	Number of subscribers	Number of Subscribers
5	Video length	The video viewing time
6	Date	The date on which the video was posted on YouTube
7	Number of views	Number of people who watched the video
8	Number of comments	Number of comments associated with the video
9	Response links	Videos posted in response to the review
10	Likes	Number of viewers who liked the review
11	Dislikes	Number of viewers who disliked the review
12	Number of favoring	Number of viewers who favored the review
13	Popular in which locations	Parts of the world the video was viewed more often
14	Decision to buy in comments	Comments entitled a decision to buy
15	Commenters interaction	Viewers interactions via comments
16	Reviewer interaction	Reviewer in the video interacts with viewers via comments
17	Level of information	Level of details in the review

Table 2. YouTube Video Review Characteristics

Factor Analysis

Factor analysis was performed to reduce the number of attributes and decide on the characteristics which contribute to helpful online video reviews. Principal component analysis was conducted with Eigenvalue over 1 and varimax rotation. The resulting factors are illustrated in table 3. Component groupings were then analyzed and named according to the items in the construct.

The overall model fit was assessed and is considered acceptable. Table 4 illustrates KMO measure of sampling adequacy for the questions which is 0.789 and is considered meritorious by Hair (Hair, 2006). As illustrated in table 5, four factor loadings explain 66.978% of the variance for the factors. Factor analysis is considered acceptable for social science research where more than 60% of the variance is explained (Hair, 2006). Bartlett's Test of Sphericity is statistically significant for the factor models at the .001 level.

Four factors did not surpass the minimum level of loading for the number of surveys to be included in the final factor model. Reviewer's type, decision to buy in comments, date, and video length had loadings less than 0.65 and are not used in the final constructs. Popular in which locations factor was dropped from the study because YouTube.com stopped providing this information before we administered the survey.

Based on the interpretation of the items in each factor, the four factors are: review popularity, comments, video information, and review depth. Review popularity includes the number of views, number of subscribers, likes, dislikes, and number favoring. Comments includes number of comments, response links, and commenters interaction. Video information includes video title, and reviewer's name. Review depth includes one item, level of information. A proposed theoretical model is introduced in Figure 1 based on the factor analysis to show how the four factors may contribute to vide review helpfulness. The four dimensions appear relatively independent based on the low cross loading of items to factors.

	Items	Factors			
		1	2	3	4
1	Number of views	.697	.328	-.017	.287
2	Number of subscribers	.752	.345	.105	.102
3	Likes	.777	.245	.106	.170
4	Dislikes	.794	.303	.097	.050
5	Number of favoring	.670	.477	.060	-.039
6	Number of comments	.257	.850	.070	-.003
7	Response links	.461	.734	.145	.163
8	Commenters interaction	.332	.735	.188	.115
9	Video title	-.105	.161	.810	.007
10	Reviewer's name	.172	.449	.652	.105
11	Level of information	.012	-.034	-.008	.901
12	Reviewer's type	.530	-.361	.540	-.148
13	Decision to buy in comments	.501	.375	-.098	.440
14	Reviewer interaction	.339	.609	.187	.183
15	Date	.171	.336	.126	.446
16	Video length	.365	.076	.451	.418
17	Popular in which locations	dropped	Dropped	dropped	Dropped

Table 3. Factor Analysis

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.789
Bartlett's Test of Sphericity	Approx. Chi-Square	534.779
	Df	120
	Sig.	.000

Table 4: KMO and Bartlett's Test
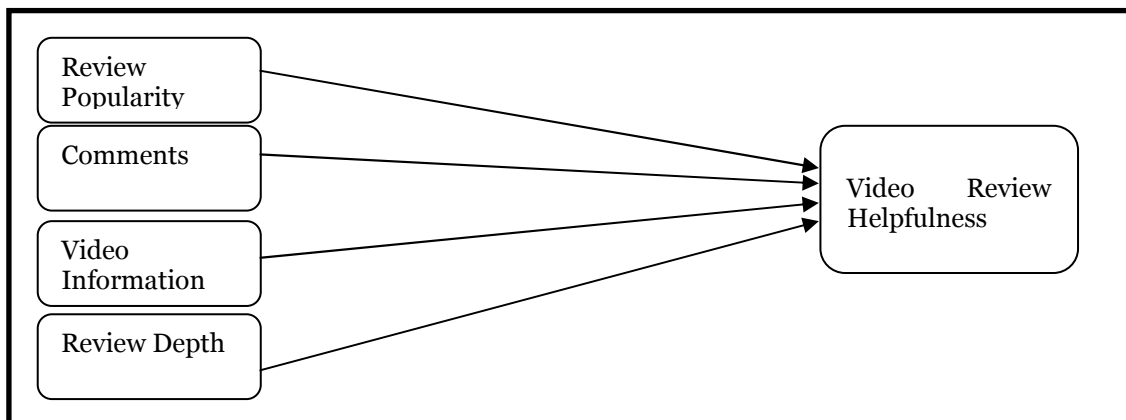
Figure 1: Conceptual Model

Item	Initial Eigenvalues			Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.777	42.356	42.356	3.975	24.842	24.842
2	1.430	8.940	51.296	3.397	21.231	46.072
3	1.279	7.993	59.289	1.734	10.835	56.907
4	1.230	7.688	66.978	1.611	10.070	66.978
5	.963	6.019	72.996			
6	.881	5.508	78.505			
7	.713	4.459	82.964			
8	.630	3.940	86.904			
9	.586	3.662	90.566			
10	.391	2.441	93.007			
11	.343	2.142	95.149			
12	.215	1.344	96.493			
13	.183	1.144	97.637			
14	.167	1.044	98.681			
15	.117	.728	99.410			
16	.094	.590	100.000			

Table 5: Total Variance Explained

Discussion

This research focused on online reviews on YouTube to address two questions: 1) what are the most common product categories reviewed on YouTube? and, 2) what are the factors which contribute to helpful online video reviews?

Video game review make up the dominant share (77%) of video reviews in our sample. Movies make up the second largest share of video reviews (12%) followed by technology reviews (9%). A small portion of reviews (2%) make up the remaining portion of reviews. Video reviews can influence consumer purchase decisions. Content analysis found that review commenters can follow a reviewer for a number of years and influence decision making. Popular reviewers are provided with products to review from device makers to allow a more impartial view of a product's functions. The relative independence of reviewers from the product manufacturers may lead those who watch the review to obtain additional helpful information about a product. Certain product categories can be difficult to evaluate due to the number of options in the marketplace and video reviews may allow potential consumers to find helpful information in making purchase decisions.

To answer the second question, what factors can be found for online video reviews that may help predict review helpfulness, factor analysis was performed. Four factors were discovered based on seventeen items that may be helpful in determining how consumers perceive the helpfulness of a video review. The four factors are: review popularity, comments, video information, and review depth.

The first factor, review popularity, includes the number of views, subscriptions, number of likes, number of dislikes, and number of favoring are related to review helpfulness based on viewer feedback. In traditional review systems like those found on Amazon, consumers evaluate review helpfulness through a star rating. YouTube provides rich information mainly through items in the first factor which provide information regarding how popular is the video and how many viewers like it.

The second factor, comments, includes number of comments, response links, and commenters' interaction. The comments factor includes response links and interactions which are also in the form of comment. The comments section provides rich details about the quality of the review and consumer experience of those who made the decision to buy the product. The comments details provide more insight for consumers and have the potential to assist them in making an informed and less risky purchase decision.

The third factor, video information, includes video title and reviewer's name. Video title includes information regarding the product being reviewed and the details included in the review like if it is short or full review. The role of reviewer identity cannot be ignored in video reviews (Forman et al. 2008), and this is what properly distinguishes YouTube video reviews from written reviews elsewhere. The subscription feature along with the reviewer user name in YouTube makes following a specific reviewer an easy task. Consumers tend to develop familiarity and trust toward some reviewers. Comments in video reviews included commenters who showed admiration and trust of a reviewer. In a video review by a reviewer called Lisa, one viewer wrote: "*Lisa, I've been your fan since longer than I want to admit... I remember buying an Asus mypal A620 after I read your review, and it was the best pocket pc ever. It's been a very nice evolution to now have video reviews beside your great written reviews, you are a very professional reviewer...*"

Organizations also seem to realize the importance of video reviews and reviewer's identity. Many organizations send their products to reviewers to post a video review about them. In one video review this interaction took place between a reviewer and a commenter:

Commenter: "*I'm poor, and you seem to have many tablets. Could you give me one of them*?"

Reviewer: "*Sorry, I do not own these tablets. Companies send them for review*"

The fourth factor, review depth, includes one item, level of information, and is consistent with the existing research. Mudambi and Schuff (2010) predicted review helpfulness on Amazon by measuring review depth through the number of words in a review. In YouTube, however, review depth has to do with the level of information provided by the reviewer. Furthermore, the factor analysis results show that video length is insignificant, which means time –compared to word count- is not considered a helpful characteristic in evaluating review helpfulness. Analyzing YouTube video review content we found that there are different levels of information provided in different reviews. Some reviews were no more than unboxing a product and talking about its design. Other reviews included turning on the device and discussing basic features (operating system, screen size and resolution, and Apps which comes with the tablet). Other reviews provide more technical details such as hardware and software specifications, benchmark testing, and comparing the product to other rivals in the market.

The four dimensions may predict video review helpfulness. Each factor is relatively independent based on the low cross-loading of factors. Reviewer depth will need to include additional items increase construct validity and reliability and will be addressed in future studies.

Limitations

A convenience sample of university students from one university was used to gather survey responses. University student from a single university are not representative of all university student and not representative of all YouTube review watchers. Future studies will expand the user population to include a more representative sample.

This study used exploratory factor analysis as its primary research method to discover factors that may help predict review helpfulness. There may be other factors that were not included in this study that may helpful in understanding the phenomenon. Confirmatory factor analysis will be conducted in a larger sample to determine if these factors help predict review helpfulness.

This study did not collect data on a dependent variable such as review helpfulness to determine how the independent variables predict a dependent variable. Future studies will use review helpfulness as a dependent variable such that the independent variables identified in this research can predict how the factors contribute to review helpfulness.

This study found four factors to help predict video review helpfulness. One factor has only one item and will need additional items to increase the validity and reliability of the construct.

Conclusion

This study focuses on video reviews of products and services that may help consumers in the decision making process. The major categories of video reviews placed on YouTube were categorized. The majority of product reviews are video game reviews (77%), Movies reviews (12%), technology reviews (9%), and small portion of uncategorized reviews (2%). This study used exploratory factor analysis to find four factors that may help predict review helpfulness. The four factors are: review popularity, comments, video information, and review depth. Review watchers may find that the popularity of a review is indicative of its quality and trustworthiness. The comments may help review watchers gain insight into differing viewpoints with in support and opposition of a product and may provide more information in a textual form. Video information can be helpful because reviewers can subscribe to reviewers and be informed of additional videos made by the content producer. The review depth helps consumers make informed purchase decisions by providing relevant information regarding products features. All four factors may help predict review helpfulness.

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