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The Effects of Credible Online Reviews on Brand Equity Dimensions and Its Consequence on Consumer Behavior

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ABSTRACT

Consumers are using social media platform to gain and share knowledge on brands. In the virtual environment, consumers are exposed to various online reviews on brands that leave an impression of brands on the minds of the consumers. The present study combines Yale attitude change model and attribution theory to examine the effects of credible online reviews on brand equity dimensions. The present study views, through the lens of Yale attitude change model, the various factors that affect credibility evaluation of online reviews. Further, attribution theory is used as the theoretical backbone to analyze the effects of credible online reviews on brand equity dimensions and finally on purchase intention. This study uses structural equations modeling (SEM) to investigate the impact of online credible reviews on customer based brand equity (CBBE) dimensions and its consequence on consumer behavior (purchase intention). Results indicate that source and review quality are the most important factors that affect consumer's credibility evaluation of a review. Online credible reviews have more significant impact on brand awareness, perceived value and organizational associations and thus leads to consumer's purchase intention in the context of consumer electronic products in India.

KEYWORDS

credible online reviews, brand equity, structural equation modeling, purchase intention, India



Introduction

Word of mouth (WOM) can be described as informal communication between two or more people. Consumers communicate with each other on different products and services that can influence their purchase decisions. WOM can be more effective marketing strategy to influence others compared to some of the other popular strategies like personal selling and radio advertising (Herr, Kardes, & Kim, 1991) and, magazine and newspaper advertising (Trusov, Bucklin, & Pauwels, 2009). In the present digital era, consumers are more willing to use WOM through online mode that is called electronic word of mouth (EWOM). They are using social media platform to gain and share knowledge on brands (Gopinath, Thomas, & Krishnamurthi, 2014). Consumers

are participating in different virtual communities and sharing their brand related experiences and recommendations with others (Matzler, Pichler, Füller, & Mooradian, 2011). The information seeking behavior as well as information sharing behavior of consumers have been increasing regularly (Grant, Clarke, & Kyriazis, 2007; Smith, 2011). Every minute consumers are sharing almost 600,000 pieces of contents, uploading 48 hours of videos, texting almost 100,000 messages and creating more than 25,000 posts (Daugherty & Hoffman, 2014).

Online brand reviews affect purchase decision of consumers (Burton & Khammash, 2010; Chen & Xie, 2005; Fagerström, Ghinea, & Sydnes, 2016; Zhao, Yang, Narayan, & Zhao, 2013). Consumers first evaluate the credibility of online reviews and then follow the reviews (Cheng & Ho, 2015; Chung, Han, & Koo, 2015; Hamby, Daniloski, & Brinberg, 2015; Moe & Schweidel, 2012; Ong, 2011). The present study uses Yale attitude change model to determine the factors that affect credibility evaluation of a review. According to the Yale attitude change model, four key factors are behind information persuasiveness. These are, sources of the reviews, medium of the information, contents of the information and receiver of the information. Studies in the context of India also argue that consumers in India seek credibility of the information before accepting that information (Khare, Khare, & Singh, 2012; Beldona, Racherla, & Mundhra, 2011). In the virtual environment, consumers are exposed to various online reviews on brands that leave an impression of brands on the minds of the consumers (Xun, 2014). This study uses attribution theory to understand the effects of online reviews on brands. According to the attribution theory, the general behavior of a person is to give meaning to his/her environment (Cattell, 1982; Cort, Griffith, & Steven White, 2007). In the online environment, consumers gather various brand related reviews (attributes) to form a causal judgment on brands and that effect overall value (brand equity) of the brands (Gao, Knight, Zhang, Mather, & Tan, 2012; Gensler, Völckner, Egger, Fischbach, & Schoder, 2015).

With regards to brand equity, Aaker (1991, p. 15) defines brand equity as “a set of brand assets and liabilities linked to a brand, its name and symbol that add to or subtract from the value provided by a product or service to a firm and/or to that firms’ customers.” From the perspective of the customers, brand equity can be described as the value of a brand in his or her mind (Goldfarb, Lu, & Moorthy, 2009). Moreover, the outcome of brand equity is consumer’s purchase intentions (Aaker, 2009). Prior studies note that online communications can affect brand related outcomes (Culotta & Cutler, 2016; Jin & Phua, 2014). Previous studies have examined the factors that affect credibility of online reviews but very less research has been documented on the impact of credible online reviews on brand equity and its consequence on consumer behavior. This study attempts to fill this gap in marketing research.

Hence, the objectives of the study are:

1. To determine various factors that affect credibility of online reviews. In particular, this study follows Yale attitude change model (Hovland, Janis, &

Kelley, 1953) to analyze the role of source, message and receiver factors on credibility evaluation of online reviews.

2. To investigate the impact of online reviews on brand equity dimensions and its consequence on consumer behavior (purchase intention).

The present study first determines the reliability of the variable scales and then performs exploratory factor analysis to determine the dimensionality of the variable scales. It uses structural equations modeling to identify the measurement model, convergent validity and discriminant validity, and to identify the relationships between the variables.

The remainder of the paper is organized as follows. The next section deals with review of literature and proposes a set of hypotheses. The subsequent sections discuss the methodology and the results of analyses. The final section concludes the study.

Literature review

The present study combines Yale attitude change model and attribution theory to examine the effects of credible online reviews on brand equity dimensions. The present study views, through the lens of Yale attitude change model, the various factors that affect credibility evaluation of online reviews. Further, attribution theory is used as the theoretical backbone to analyze the effects of credible online reviews on brand equity.

Theoretical framework

Yale attitude change model

Prior studies have attempted to develop various information persuasion models like, the heuristic systematic model (HSM) by Chaiken (1980) and the elaboration likelihood model (ELM) by Petty and Cacioppo (1986). According to the HSM, there are two ways of information processing, namely, systematic and heuristic. People choose any of the two information processing routes depending on their motivations and abilities. In systematic route, a person carefully examines the information and determines the merit of the information whereas, in heuristic route, a person chooses heuristics (shortcut cues) to process the information. Similarly, ELM also proposes two information processing route, namely, central and peripheral route. Here, central route deals with careful scrutiny of information whereas, peripheral route uses mental shortcuts to process the information.

On the other hand, the Yale attitude change model developed by Hovland et al., (1953) suggests that four factors affect information persuasiveness. They are source, message, medium and receiver. HSM and ELM discuss information processing methods whereas the Yale attitude change model describes the factors that affect information persuasiveness. Hence, the Yale attitude change model is considered for the present study with online reviews as the medium. The other three factors are discussed in the following paragraphs.



Source

Source determinants can be described as the factors that evaluate the credibility and competency of the information (Lee, Kim, & Chan-Olmsted, 2011). The receivers are more likely to believe the information if they perceive the source of the information as credible. In the context of online communication, source credibility has significant effects on information credibility evaluation (Wathen & Burkell, 2002). Source determinants have two major dimensions, namely, expertise and trustworthiness (Celeste Farr, 2007; Yoon & Kim, 2016). Expertise can be defined “as the extent to which a person is perceived to possess knowledge, skills or experience and thereby is considered to provide accurate information” (Ohanian, 1990, p. 44). If any recommendation is given by an expert then the receiver of the message will form an attitude as per the recommendation (Dou, Walden, Lee, & Lee, 2012). The trustworthiness of the sender is another determinant of source credibility. Trust can be described as a behavioral aspect that forms an intention to rely on another person (Büttner & Göritz, 2008). If any recommendation is made by a trustworthy source then the receiver of the message will doubt less on that recommendation (Cheung, Luo, Sia, & Chen, 2009; Reimer & Benkenstein, 2016).

Message

Message determinants are the various factors that affect the credibility evaluation of the review contents. The factors that affect credibility evaluation of the review contents are review quality, review sidedness and review consistency.

Review quality refers to “the strength or plausibility of persuasive argumentation” (Eagly & Chaiken, 1993, p. 325). In simple words, it refers to the extent to which the consumers perceive the reviews to be logical and reliable. Consumers generally look into the justification behind the recommendation given by the sources. Review quality can affect the attitude of the receiver (Filieri, 2015). If the receivers perceive that the messages have valid arguments then they are likely to adopt a positive attitude towards the reviews and consider the messages as credible (Cheung & Thadani, 2012).

Review sidedness can be two-sided or one-sided (Cheung & Thadani, 2012; Eisend, 2006). Two-sided reviews focus on both positive and negative aspects of the product or service whereas one-sided reviews focus on either positive or negative aspects of the product or service (Floh, Koller, & Zauner, 2013). Some researchers believe that the two-sided reviews are complete in nature and therefore the review recipients perceive them as credible (Chintagunta, Gopinath, & Venkataraman, 2010; Doh & Hwang, 2009). Contrary, previous studies argued that negatively framed reviews considered as logical by others (Bambauer-Sachse & Mangold, 2011; Berger, Sorensen, & Rasmussen, 2010; Folse, Porter III, Godbole, & Reynolds, 2016; Park & Lee, 2008).

Review consistency can be defined as the extent to which other consumers agreed with a particular review. In other words, consumers consider a review as a credible if it is consistent with other reviews and if other consumers liked or vote

for that review (Cheung et al., 2009). Godes and Silva (2012) note that the others opinion on reviews have significant influence on the credibility evaluation of online reviews.

Receiver

The receiver is the person who is exposed to the reviews. Product knowledge of the receiver can affect reliability of the message (Cheung & Thadani, 2012; Wang, Mai, & Chiang, 2013). The receiver perceives the messages are credible if the reviews are consistent with the product knowledge and experiences of the receiver (Cheung et al., 2009).

Credible online reviews

Cheung et al. (2009) empirically proves that if people perceive a particular review as credible then they are likely to persuade that particular review. Credibility evaluation of online reviews can be defined as the assessment of the validity of reviews. Credibility of online reviews can be described as a process by which consumers assess the accuracy of online reviews (Zha, Li, & Yan, 2015). Credible online reviews can be defined as the extent to which the consumers perceive the reviews as truthful, logical and believable (Cheung et al., 2009). Therefore, this study considers credibility means the perception of the consumers on online reviews rather than the direct measures of the reviews' reality. This study uses Yale attitude change model (Hovland et al., 1953) to identify various factors that affect credibility of online reviews.

Attribution theory

Attribution theory can be considered “a theory that describes the cognitive processes by which people determine the causes of behavior and events in their world” (Mullen & Johnson, 2013, p. 174). Heider (1958) first coined the term attribution theory in his study on psychology of interpersonal relationship. This theory concentrates on the people's reactions to events and the subsequent effects of those reactions on their behavior (Heider, 2013). Attribution theory believes that people try to give meaning to the attributes that they come across. According to the theory, people gather information and try to form a causal judgment. In this study, attribution theory is utilized to explain the relationship between credible online reviews and brand equity. Online reviews (events) encourage the consumers to form a picture of the brand in their minds (reaction), which in turn affects the brand equity and finally the purchase intention (subsequent effect of the reaction) (Bruhn, Schoenmueller, & Schäfer, 2012).

Brand equity

According to the Lassar, Mittal, and Sharma (1995, p. 13), brand equity can be defined as “the enhancement in the perceived utility and desirability a brand name



confers on a product. It is the consumers' perception of the overall superiority of a product carrying that brand name when compared to other brands." Moreover, consumers' purchase intention is the outcome of brand equity (Aaker, 2009).

Brand equity is a latent construct (Christodoulides & de Chernatony, 2010). Hence, it is difficult to determine the effect of online reviews on brand equity. There are two approaches to determine brand equity: firm based brand equity (FBBE) and customer based brand equity (CBBE). FBBE can be measured either through product market outcomes like price premiums, market share, and relative price and/or through financial market outcomes like purchase price of the brand and discounted cash flow of licenses and royalties (Atilgan, Akinci, Aksoy, & Kaynak, 2009). In CBBE approach, brand equity is measured through various dimensions of brand value (Christodoulides & de Chernatony, 2010). The FBBE measures brand equity by determining the total value of a brand as a separate asset from the perspective of the firm whereas CBBE measures the mindset of customers towards a particular brand (Christodoulides & de Chernatony, 2010).

Prior studies suggest that FBBE merely looks at the brand performance whereas CBBE considers various sources that affect brand equity (Keller, 1993; Tong & Hawley, 2009). Since, CBBE is the most preferred approach to determine brand equity (Chaudhuri, 1995; Chieng & Goi, 2011; Vázquez, Del Rio, & Iglesias, 2002; Winters, 1991). Hence, this study also adopts CBBE approach to determine brand equity.

Customer based brand equity dimensions

Aaker (1991) developed a conceptual framework on brand equity and suggested five dimensions of brand equity, that are brand awareness, brand associations, perceived quality, brand loyalty and other proprietary brand assets. Keller (1993) noted that brand knowledge is a dimension of brand equity. According to Keller (1993), brand knowledge consists of brand awareness and brand image. Thus, Keller (1993) description of brand image is same as brand associations described by Aaker (1991).

Several empirical studies have empirically tested brand equity dimensions suggested by Aaker (1991) and found them to be valid. For example, Pappu, Quester, and Cooksey (2005) empirically tested the dimensions on two product categories that are cars and televisions in the context of Australia. Their results also provide evidence for the validity of Aaker's, (1991) brand equity dimensions. Buil, de Chernatony, and Martinez (2008) tested Aaker's (1991) brand equity dimensions in UK and Spain and found invariant across the two countries in the context of various product categories.

The present study analyzes the impact of online reviews on customer based brand equity dimensions and its consequence on consumer behavior (purchase intention). The fourth and fifth dimensions of Aaker (1991) are not relevant in the present study although prior studies do report that credibility has significant effect on brand loyalty (Alam, Usman Arshad, & Adnan Shabbir, 2012; Sweeney & Swait, 2008). This fourth dimension, namely, brand loyalty, suggests that customers become loyal towards a brand when they use a particular brand and get interested in repeat purchases (Aaker, 2009; Keller, Parameswaran, & Jacob, 2011). However,

the present study did not consider the effects of credible online reviews on consumer's intention to repurchase. Hence, brand loyalty dimension is not considered in this study. The fifth dimension, namely, other proprietary brand assets includes patents, channel relationships and trademarks (Christodoulides & de Chernatony, 2010). Patents save the companies from direct competition, which means if a company has patent to sell a specific product then other companies can't sell that particular product. Channel relationships include distribution of product from manufacturer to consumers which directly affects product's availability in the market. Trademarks protect the company from its competitors where other companies can't use the same brand name. But the present study did not consider the effects of credible online reviews on patents, channel relationships and trademarks. Hence, the fifth dimension is also not considered in this study. Thus, the present study considers three brand equity dimensions of Aaker (1991), namely, brand awareness, brand associations and perceived quality.

Purchase intention

The term purchase intention is broadly treated as a predictor of purchase. Purchase intention can be considered as consumers' interest to buy a particular product (Huang, 2012). Purchase intention is the behavioral consequence of brand equity dimensions (Aaker, 2009; Chang & Liu, 2009; Keller, 1993).

Hypothesis development

Based on the above theoretical framework, hypotheses have been formulated as explained below. Figure 1 depicts the proposed research model of the study.

Factors affecting credibility evaluation of online reviews

Source is one of the important factors that affect the credibility evaluation of a review (Metzger & Flanagin, 2013; Van Der Heide & Lim, 2015). If online reviews originate from a credible source then they will influence the opinions, attitudes and behaviors of the consumers (Hayes & Carr, 2015; Ong, 2011). Hence, this study suggests that:

H1: Source has a positive effect on credible online reviews.

Logical justifications behind the review make a review credible (Cheung & Thadani, 2012). Consumers are keen towards review quality, which implies that consumers measure the extent to which the reviews seem practical and real (Myers, 2014). Hence, this study suggests that:

H2a: Review quality has a positive effect on credible online reviews.

Two sided review is a review which contains positive as well as negative information of the product. This makes a review seem credible (Doh & Hwang, 2009; Chen, 2016). Consumers perceive that every product has merits as well as demerits.

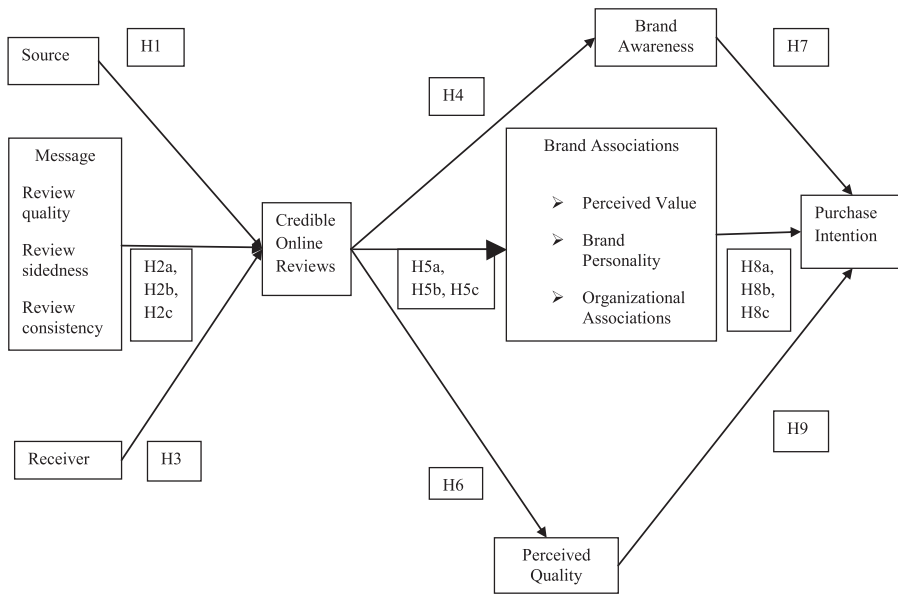


Figure 1. Research model of this study.

If any review focuses on both these aspects, then the consumers feel that the particular review is credible (Cheung et al., 2009). Hence, this study proposes that:

H2b: Two sided reviews have a positive effect on credible online reviews.

People's opinions (for example in terms of votes and ratings) towards a particular online review affects its credibility (Flanagin, Metzger, Pure, Markov & Hartsell, 2014). Further, consumers often gather opinions of others towards a particular brand or product and compare the consistency between the opinions (Cheung et al., 2009). Thus, the following hypothesis is proposed:

H2c: Review consistency has a positive effect on credible online reviews.

Receiver's perception and product knowledge have significant effect on credibility evaluation of a review (Cheung & Thadani, 2012). Receivers compare the review information with their own personal product knowledge and experiences. If they are similar then the consumers perceive the particular review as credible (Eisend, 2006). Therefore, this study suggests that:

H3: Receiver has a positive effect on credible online reviews.

Brand equity dimensions

Online reviews have significant effect on brand equity (Beneke, de Sousa, Mbuyu, & Wickham, 2016). As explained in literature review section, the present study focuses on three of the five brand equity dimensions proposed by Aaker (1991, 1996), namely, brand awareness, brand associations and perceived quality.

Brand awareness is the ability of the customers to recognize a brand and recall the brand under different circumstances (Aaker, 1991). Brand recognition can be defined as the capability of the consumers to identify prior exposure to the brand when the brand is given as a cue. Brand recall is the ability of the consumers to retrieve the brand name from the memory (Keller, 1993). Brand awareness is the reason behind well-known brands performing better compared to less-known brands in the marketplace (Huang & Sarigöllü, 2012). Online reviews on brands facilitate the consumers to get awareness about the brands. Hence, this study suggests that:

H4: Credible online reviews have a positive effect on brand awareness.

Brand associations can be defined as “anything linked in memory to a brand” Aaker (1991, p. 109). Various brand associations collectively create brand image (Keller, 1993). Furthermore, brand associations describe the degree to which consumers perceive their associations with the brand. Moreover, higher degrees of associations indicate stronger relationships between customers and brands (Keller, 1993).

Prior studies divided brand associations into three components, namely, perceived value, brand personality and organizational associations (Aaker, 1996; Buil et al., 2008; Buil, Martínez, & de Chernatony, 2013; Chen, 2001; Pappu et al., 2005). Perceived value can be explained as the opinion of the consumers on products’ cost efficiency (Buil et al., 2008). Online reviews facilitate the consumers to know whether a product gives value for its given price. Brand personality can be defined as the extent to which the brand is suitable as per the consumer’s personality (Buil et al., 2013). Through online reviews consumers can understand whether a particular product or brand is suitable for their needs or personalities. Organizational association is the consumer’s perception on product’s manufacturer (Buil et al., 2008). Online reviews facilitate the consumers to know about the unique characteristics of the manufacturer of the product, to which they can connect. Thus, the following hypotheses are proposed:

H5a: Credible online reviews have positive effect on perceived value.

H5b: Credible online reviews have positive effect on brand personality.

H5c: Credible online reviews have positive effect on organizational associations.

Perceived quality is the extent to which the brand is considered to provide good quality products to the consumers (Aaker, 1991). The concept facilitates a brand in various ways. It helps in brand extensions, influences the consumers to pay higher price for a product or service and is the major reason behind purchase of a product or service (Aaker, 1991). If the perceived quality of a brand is high then it leads them to select that brand over other competing brands (Yoo, Donthu, & Lee, 2000). Through online reviews consumers can get to know about brand’s quality or superiority over other competing brands. Thus, the following hypothesis is proposed:

H6: Credible online reviews have a positive effect on perceived quality.

Brand equity dimensions and purchase intention

Online review affects consumer's perception towards brand equity and thus ultimately affects consumer's purchase intention (Hayes & Carr, 2015). Thus, the following hypotheses are proposed:

H7: Brand awareness has a positive effect on purchase intention.

H8a: Perceived value has a positive effect on purchase intention.

H8b: Brand personality has a positive effect on purchase intention.

H8c: Organizational associations have a positive effect on purchase intention.

H9: Perceived quality has a positive effect on purchase intention.

Methodology

Online reviews and consumer electronics products

Product category significantly affects the credibility of online reviews (Mudambi & Schuff, 2010). Consumer electronics is the most online reviewed product category (Chan & Ngai, 2011). Consumers are more interested to search information on consumer electronic products because companies release the updated versions of these products in the market very frequently. Hence, before purchase, consumers are more eager to go through the product reviews to avoid making any wrong purchase decision (Park & Kim, 2008). Therefore, online reviews act as an important factor for brand evaluation in the context of consumer electronic products.

Those consumers who buy online products generally seek online product reviews (Hansen & Møller Jensen, 2009). According to the PWC report in the month of August, 2014, consumer electronics products category secured the highest position on the basis of data on online shopping in India (PWC, 2014). Hence, this study focuses on consumer electronics product category.

Online brand pages of e-commerce sites in facebook

The present study considers e-commerce sites because e-commerce sites are one of the very important channels of online sales (Goldsmith & Flynn, 2004). According to a Government of India report, in January, 2014 the top five e-commerce sites which gave highest satisfaction to the Indian consumers, were: 1—Flipkart, 2—Jabong, 3—Myntra, 4—Snapdeal, and 5—Amazon India (DCA, 2014). But Myntra focuses only on apparels and Jabong has very limited consumer electronics product lines. Hence, this study focuses on three e-commerce sites, namely, Flipkart, Snapdeal, and Amazon India.

India is the world's second largest Facebook user (Dhir, Kaur, Chen, & Lonka, 2016). Consumers in India prefer Facebook social media platform over any other social media platform (E&Y, 2015). An online brand page is treated as an internet

tool which is used by the consumers to exchange information on products and brands (Cvijikj & Michahelles, 2013). In Facebook, Flipkart, Snapdeal, and Amazon India's brand pages are present. All these brand pages are authenticated by the Facebook which means these brand pages are real e-commerce sites' brand pages. Customers of e-commerce sites' write reviews in the e-commerce sites' brand pages. Hence, to get data this study considers Facebook's Flipkart, Snapdeal, and Amazon India's brand pages.

Measures

A literature review was carried out to determine the best possible way to measure each variable. Cheung, Lee, and Rabjohn (2008) study was followed to determine the items to measure source and credible online reviews. Items proposed by Cheung et al. (2009) were followed and modified to measure message factors and receiver. This study followed Yoo, Donthu, and Lee (2000) and Buil et al. (2013) studies and modified in online review context to measure brand awareness. This study followed Buil et al. (2008) and Buil et al., (2013) studies and modified in online review context to measure three dimensions of brand associations, namely, perceived value, brand personality, and organizational associations. Pappu et al. (2005) study was followed and modified to determine the items that measure perceived quality. Buil et al. (2013) study was followed and modified to determine the items that measure purchase intention. All the variables were measured using 5 point Likert scale with 1 = strongly disagree and 5 = strongly agree.

Pilot study

Pilot study was conducted offline to determine the questionnaire and to select the consumer electronic brands for the present study. To check the reliability of the variables, Cronbach's alpha was determined for each variable. Exploratory factor analysis (principle component analysis extraction method and varimax rotation method) was conducted to check the unidimensionality of the variables. For pilot study, 124 respondents were considered. Respondents of the pilot study generally go through various online reviews before they purchase consumer electronic products.

Data collection procedure for final study

The survey tool (questionnaire) was prepared in Google docs. The link of the questionnaire was posted in the message box of the respondents of Flipkart, Snapdeal, and Amazon India brand pages in Facebook.

Sample Size for final study

Internet and mobile association of India (IAMAI) report reveals that 40 million Indian consumers use online reviews (IAMAI, 2015).

To determine the sample size, the study followed Slovin's 1960 (Tejada & Punzalan, 2012) formula.

$$\text{Slovin's formula } n = N / (1 + N \times e^2)$$

n = sample size, N = total population, and e = margin of error. This study determined its sample size with 95% confidence level. Hence, margin of error is 5%.

$$40 \text{ millions} / (1 + 40 \text{ millions} \times 0.05^2) = 400.$$

To generalize the study minimum sample size should be 400. This study considers 1176 respondents which are well above the minimum sample size.

Final study

For final study, 1176 respondents were considered. Reliability alpha was determined for each variable. Structural equations modeling (SEM) was performed to determine the relationships between the variables. SEM was used for this study because SEM can directly measure the relationships between latent and observed variables (Hair, Black, Babin, & Anderson, 2009). Moreover, it can also measure error variance and allows for modifications.

Results and discussions

The questionnaire was discussed with four experts in online communication field as recommended by Zaichkowsky (1985) for its content validity. Moreover, the questionnaire was discussed with three academicians to ensure each item's specificity, clarity and representativeness. Then to detect the unclear and difficult questions an offline pilot study was conducted. After that the variable scales were purified and used for final data collection.

Pilot study

Offline pilot study was conducted with 124 respondents. The various consumer electronics brands' online reviews seen by the respondents in last one year (November 2014 to October 2015) were HP, Micromax, Lenevo, LG, Samsung, Canon, Nikon, Sony, Dell, Asus, Toshiba, Google, Microsoft, Karbonn, Motorola, HTC, Xiaomi and Acer. Therefore, the present study considered all those brands for final study.

The reliability alpha (Cronbach's alpha) for all the twelve variables, namely, source, review quality, review sidedness, review consistency, receiver, credible online reviews, brand awareness, perceived value, brand personality, organizational associations, perceived quality and purchase intention were in the range of 0.705 to 0.943 which were above 0.7. Hence, the reliability results were acceptable (Nunally, 1978, p. 245). To evaluate the unidimensionality of the variables, exploratory factor analysis was performed with principal component analysis extraction method and

varimax rotation method. Exploratory factor analysis shows twelve different factors with Eigen values more than 1. The sample adequacy test like Kaiser—Meyer—Olkin test (KMO) value was 0.662 which is well above 0.5 (Malhotra & Dash, 2011, p. 590). Hence, it is acceptable.

Final study

Questionnaire was posted in the message box of 1800 people chosen randomly. Of these 1176 responded. Among 1176 respondents, 959 (81%) were males and 217 (19%) were females. Of the total respondents, 745 were 18 to 29 years old, 298 were 30 to 39 years old and 133 were more than 39 years old. Among the 1176 respondents, 78 were diploma holders, 210 were undergraduates, 625 were graduates and 263 were postgraduates.

In the questionnaire, instruction was given to the respondents as to whether they had recently considered any online reviews for television, mobile phones, camcorder, digital cameras, compact disc (CD) and Digital Video Disc or Digital Versatile Disc (DVD) players, laptop, tablets, mobile or laptop accessories which are the products of these brands, namely, “HP, Micromax, Lenevo, LG, Samsung, Canon, Nikon, Sony, Dell, Asus, Toshiba, Google, Microsoft, Karbonn, Motorola, HTC, Xiaomi and Acer”? If the respondent’s answer is yes, then the answers to the questionnaire were considered. Here, brand X means the brand’s online reviews that they saw or considered.

The reliability alphas (Cronbach’s alpha) of all the 12 variables were in the range of 0.770 to 0.948. The Cronbach’s alpha results were more than 0.7 as recommended by Nunally (1978, p. 245). Hence, it is acceptable.

Measurement model

The measurement model was determined using maximum likelihood method since it gives valid and stable results (Hair et al., 2009). In the present study, various indices of measurement model were (1) normed chi square (χ^2) with a value of 2.237 which was well within the acceptable range of 3 as recommended by (Hair et al., 2009); (2) goodness-of-fit index (GFI) with a value of 0.946; (3) comparative fit index (CFI) with a value of 0.977; (4) Tucker- Lewis index (TLI) value was 0.972. All these indices were within the recommended acceptable value of 0.90 or above (Hair et al., 2009). (5) The value of the adjusted goodness-of-fit index (AGFI) was 0.932 which was well above the recommended level of 0.90 (Hair et al., 2009) and (6) root mean square error of approximation (RMSEA) with a value of 0.032 which was within the acceptable cut-off level of 0.08 (Hair et al., 2009). All of these indices were within acceptable ranges as defined by (Hair et al., 2009).

Convergent validity

Factor loadings of all the variables were more than 0.5. The average variance extracted (AVE) by the each underlying latent construct was more than 0.5 and

construct reliability of each underlying latent construct (CR) was more than 0.7, all within acceptable ranges (Hair et al., 2009).

Discriminant validity

Square root of AVE of an underlying latent construct was higher than all inter constructs correlations. The average variance extracted (AVE) of an underlying latent construct was higher than the maximum shared variance (MSV) and average shared variance (ASV) of the same latent variable (Hair et al., 2009).

To check for multicollinearity, variance inflation factor (VIF) for each independent variables were measured (O'Brien, 2007). The VIF values were less than 3.3, which implies that the present study is free from multicollinearity problem (Kock & Lynn, 2012). Moreover, inter-correlations between independent variables were less than 0.20 which again proves that the present study has no multicollinearity problem (Hutcheson & Sofroniou, 1999). Again, since in this study respondents self-reported their responses, the common method bias test is essential (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). The present study followed common latent factor method in AMOS to test common method bias. Confirmatory factor analysis (CFA) was again conducted by adding an extra factor which considered as indicators of all the measures (Belschak, Verbeke, & Bagozzi, 2006). The common latent factor method didn't have substantial affect on any of the measures. Therefore, we conclude that common method variance didn't bias the results.

Structural model

In the present study, various indices of structural model were (1) normed chi square (χ^2) with a value of 2.832 which was well within the acceptable range of 3 as recommended by (Hair et al., 2009); (2) Goodness-of-fit index (GFI) with a value of 0.926; (3) Comparative fit index (CFI) with a value of 0.963; (4) Tucker-Lewis index (TLI) value was 0.959. All these indices were within the recommended acceptable value of 0.90 or above (Hair et al., 2009). (5) The value of the adjusted goodness-of-fit index (AGFI) was 0.913 which was well above recommended level of 0.90 (Hair et al., 2009) and; (6) root mean square error of approximation (RMSEA) with a value of 0.039 which was within the acceptable cut-off level of 0.08 (Hair et al., 2009). All of these indices were within acceptable ranges as defined by (Hair et al., 2009).

Structural equations modeling (SEM) was used to test the research model. From the path significance test (see Table 1) it was found that source (t value = 5.681 & $p < 0.001$) and receiver (t value = 3.914 & $p < 0.001$) had a positive effect on credible online reviews. In the context of message determinants, two out of three namely, review quality (t value = 4.032 & $p < 0.001$) and review consistency (t value = 3.415 & $p < 0.001$) had a statistically significant positive effect on credible online reviews. The remaining message determinant namely, review sidedness

Table 1. Results of significance test for paths of the model.

Path	Standardized Coefficient	t value	Hypothesis	Results
Source→Credible online reviews	0.174***	5.681	H1	Supported
Review quality→Credible online reviews	0.143***	4.032	H2a	Supported
Review Sidedness→Credible online reviews	0.035	0.968	H2b	Not supported
Review consistency→Credible online reviews	0.101***	3.415	H2c	Supported
Receiver→Credible online reviews	0.113***	3.914	H3	Supported
Credible online reviews→Brand awareness	0.166***	4.669	H4	Supported
Credible online reviews→Perceived Value	0.095***	3.353	H5a	Supported
Credible online reviews→Brand personality	0.096*	2.231	H5b	Supported
Credible online reviews→Organizational associations	0.108***	3.876	H5c	Supported
Credible online reviews→Perceived quality	0.081*	2.342	H6	Supported
Brand awareness→Purchase intention	0.136***	7.178	H7	Supported
Perceived Value→Purchase intention	0.188***	7.759	H8a	Supported
Brand personality→Purchase intention	0.066***	4.361	H8b	Supported
Organizational associations→Purchase intention	0.177***	6.303	H8c	Supported
Perceived quality→Purchase intention	0.050**	2.589	H9	Supported

*** Significance at the $p < 0.001$ level, ** $p < 0.01$, * $p < 0.05$.

(t value = 0.968 & $p > 0.05$) was found to be statistically insignificant in this model. Hence, hypothesis H2b was rejected.

In line with the findings of prior research (Shan, 2016) the present study also finds that source has a positive effect on credibility of online reviews. Thus, consumers in India also seek credibility of the information sources. They try to assess the knowledge and technical expertise of the sources before considering the reviews as credible. Moreover, the present study reveals that review quality affects the credibility evaluation of online reviews. Review seekers don't want just a review. They look for logical justifications behind that particular review (Yang, Shin, Joun, & Koo, 2016). Review consistency also affects consumers' belief on brands. Consumers in India consider the review as credible if the review is consistent with other reviews. This study finds that previous knowledge and experiences of consumers affect credibility evaluation of online reviews. Thus, consumers in India try to compare the online reviews with their own prior knowledge. If reviews are consistent with their prior knowledge and experiences then they are likely to consider those reviews as credible. Review sidedness was found to be insignificant in this study. The result is consistent with the study of Cheung et al. (2009) in the context of online survey in China. On the contrary, the study by Cheung, Sia, and Kuan (2012) found that review sidedness has a strong impact on review credibility in the context of low involvement and high expertise consumers. It should be noted that Cheung et al. (2012) used ELM model and followed experimental design. However, in a more recent study, it was observed that consumers consider reviews as aggregate (Baker, Donthu, & Kumar, 2016). Hence, consumers may not consider the sidedness of specific reviews.

To assess the impact of credible online reviews on CBBE, the present study considered five CBBE dimensions, namely, brand awareness, perceived value, brand personality, organization associations and perceived quality which ultimately



influence consumer's intention to purchase. Credible online reviews had a statistically significant positive effect on all the brand equity dimensions, namely, brand awareness (t value = 4.669 & $p < 0.001$), perceived value (t value = 3.353 & $p < 0.001$), brand personality (t value = 2.231 & $p < 0.05$), organization associations (t value = 3.876 & $p < 0.001$) and perceived quality (t value = 2.342 & $p < 0.05$).

In the context of purchase intention, all the brand equity dimensions had statistically significant positive effect on purchase intention, namely, brand awareness (t value = 7.178 & $p < 0.001$), perceived value (t value = 7.759 & $p < 0.001$), brand personality (t value = 4.361 & $p < 0.001$), organization associations (t value = 6.303 & $p < 0.001$) and perceived quality (t value = 2.589 & $p < 0.01$). Based on data analysis it was found that credible online reviews had significant positive effects on all the five CBBE dimensions. Moreover, all the five brand equity dimensions had significant positive effect on purchase intention. This study can be treated as an evidence of the fact that online credible reviews affect customer based brand equity dimensions and the outcome of the effect is consumer's purchase intention.

Conclusions

The objective of this study was to examine the impact of online credible reviews on customer based brand equity dimensions and its consequence on consumer behavior (purchase intention). From the data analysis, it was found that source and review quality are the most important factors that affect consumer's credibility evaluation of a review. Further, the study found that online credible reviews have more significant impact on brand awareness, perceived value and organizational associations and thus leads to consumer's purchase intention in the context of consumer electronic products in India.

Theoretical implications

The present study joins two important concepts, namely Yale attitude change model and attribution theory. Yale attitude change model is used to assess the effects of sources of the reviews, contents of the reviews, and receiver of the reviews on credibility evaluation of online reviews. Attribution theory discusses the people's reactions on events. In the present study events are the credible online reviews and the effects of credible online reviews on brand equity dimensions is considered to be people's reaction to the event. Yale attitude change model and attribution theory have been combined and considered as a theoretical backbone to assess the effects of credible online reviews on brand equity dimensions which ultimately effects consumer's purchase intention.

Managerial implications

Worldwide companies provide online forum to know the consumers' desires. Companies use social media even to address complaints of consumers. For

example, United States based e-commerce shopping site Sears has own member based portal named “shop your way” where members of the Sears can write reviews on products. This portal helps Sears to focus on its consumers’ needs. For instance, through this portal Sears gives discounts to the members of the Sears. Similarly, leading Indian shopping giants, namely, Flipkart, Amazon India, Snapdeal have their own brand pages in Facebook where they can directly interact with their customers to know their feedback towards products and services.

Data analysis revealed that source and review quality have more significant positive effect on credibility evaluation of online reviews. Recommendations which can influence the present customers (source) to write reviews on products and that can also improve the quality of the reviews are:

Marketers can influence (through gifts, incentives etc.) its present customers to recommend their products to others. One of the objectives of the company’s marketing strategy should be to educate the customers of the brand. The companies can use various marketing activities to inform their customers about the company’s policy, the value of the product, and the usage techniques of the product. These customer education drives would enhance the expertise of the customers, who can then give more informed reviews to other prospective customers who are seeking online reviews. This strategy will help the companies to increase their overall customer base. Companies can use attractive brand campaigns which can be easily recalled by consumers. These brand campaigns can highlight the company’s policy, product value, and usage aspects. This will help the online reviewers to write logical reviews and that can increase the faith of other consumers on brands. Companies can also provide a space on their own websites where consumers’ can write reviews on brands. However, companies may need to ensure that only real consumers can give reviews in that place. One way to deal with this would be to ensure that review writers provide their product purchase bill number. Moreover, others can see the reviews and they can access the review writers’ profile. It will facilitate the company to gain belief or faith of the consumers. Further, companies can go for some activities where they can include their customers. In other words, companies can organize some events (for example, they can ask their customers to make advertisements or song for the brand) which will increase the involvement of their customers. If consumers are involved with the brand they can write better reviews on brand.

Online reviews have a decisive role on brands in the context of consumer electronic products in India. Data analysis revealed that credible online reviews have more positive effect on brand awareness, perceived value and organizational associations which ultimately influence consumer’s intention to purchase. To improve the brand awareness, marketers should include social media marketing strategy in their marketing mix to disseminate product related information to the consumers. To enhance the perceived value, marketers should highlight in the social media not only the quality aspect of the product but also the product’s cost efficiency and the company’s commitment towards providing affordably priced quality products

to the consumers. For better organizational associations, marketers can provide online forums (may be an online group or community) to its customers which help the marketers to associate with their present customers.

The respondents of the present study were mostly Millennials, i.e., those in the age group of 18–34 years (Debevec, Schewe, Madden, & Diamond, 2013). The present study results can be applied to attract Millennials. Marketers can try to influence Millennials by giving them gifts or coupons to buy consumer electronic products and also influence them to write reviews (their product experiences) on consumer electronics which may connect other Millennials.

Limitations and future research directions

This study has some limitations. First, the study considered only consumer electronics products categories. Second, the study focused on only consumers present on Flipkart, Snapdeal and Amazon India online brand pages in Facebook. Nevertheless, the study does provide insights into the factors affecting consumer based brand equity in online context for an emerging market like India. Third, deeper insights regarding credibility evaluation of online reviews could have been got if questions were asked on whether the receiver checks the source's background; for example whether the source belongs to any brand community. Thus, the present study didn't consider the cultural differences of the consumers. The present study did not consider the effects of credible online reviews on brand loyalty, channel relationships, trademarks and patents.

The research model of this study can be used in other emerging and developed countries. In future, researchers can use this model in other product category contexts. Further, cultural differences of the consumers can be taken into consideration in the research model. Longitudinal study can be done to see the evolution of brand equity through online reviews. One interesting topic that can be explored is the effect of online reviews on brand sabotage where consumers are determined to do damage to the brand (Kähr, Nyffenegger, Krohmer, & Hoyer, 2016). Moreover, in future, researchers can investigate the effect of online reviews on brand switching.

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Appendix: Scale used for the study

Source

Source1: Reviewers of brand X are knowledgeable.

Source2: Reviewers of brand X are reliable.

Source3: Reviewers of brand X are believable.

Review quality

Review quality 1: Online reviews on brand X are defined.

Review quality 2: Online reviews on brand X are explained.

Review quality 3: Online reviews on brand X are detailed.

Review sidedness

Review sidedness 1: Online reviews on brand X that contains strength and weakness both aspects of the products are convincing.

Review sidedness 2: Negative online reviews on brand X are reliable. (Reverse coded)

Review sidedness 3: Online reviews on brand X that contains merits and demerits both aspects of the products are persuasive.

Review consistency

Review consistency 1: Online reviews on brand X are related to other reviews.

Review consistency 2: High voted reviews on brand X are believable.

Review consistency 3: High voted reviews on brand X are dependable.

Receiver

Receiver1: Online reviews on brand X are matching with my point of view.

Receiver2: Online reviews on brand X are similar to my opinion.

Receiver3: I always pay attention towards online reviews on brand X.

Online Credible Reviews

Online Credible Reviews 1- Online comments on brand X's products are realistic.

Online Credible Reviews 2- Online comments on brand X's products are logical.

Online Credible Reviews 3- Online comments on brand X's products are accurate.

Brand awareness

Brand Awareness1- My know-how improves on brand X's products after reading online reviews.

Brand Awareness 2: My understanding improves on brand X's products after reading online reviews.

Brand Awareness 3: My knowledge improves on brand X's products after reading online reviews.

Brand associations

Perceived Value

Perceived Value1: Online reviews help me to buy those products which are cost efficient.

Perceived Value 2: Online reviews help me in deciding what products to buy which I would get much more than my money's worth.

Perceived Value 3: Online reviews makes it easier for me to buy those products which would be a value for money.

Brand Personality

Brand Personality1: Online reviews give me a clear picture of the type of person who would use a particular product.

Brand Personality 2: Online reviews give me an idea which products suit my needs.

Brand Personality 3: Online reviews guide me in selecting those products which takes care of my requirements.

Organizational associations

Organizational associations 1: Online reviews help me to get an understanding on products' manufacturer.

Organizational associations 2: Looking at the products' reviews help me to develop trust with the manufacturer.

Organizational associations 3: Going through the online reviews of the products help me in knowing the manufacturer of the products.

Perceived quality

Perceived quality 1: Online reviews facilitate me to assess the quality of brand X's products.

Perceived quality 2: Online reviews facilitate me to determine the quality of brand X's products.

Perceived quality 3: Online reviews facilitate me to evaluate the quality of brand X's products.

Purchase intention

Purchase intention1: Online reviews help me to decide which product I am likely to buy.

Purchase intention2: Online reviews facilitate me to decide which product I would consider to procure.

Purchase intention3: Online reviews guide me to consider the product that I am likely to obtain.