

The influence of eWOM valence on brand equity dimensions and on purchase intention

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Abstract

The purpose of this study is to explore the relationship between electronic word of mouth (eWOM) valence, consumer-based brand equity (CBBE) dimensions, and purchase intention. An online survey was conducted to collect the data, with a total of 209 valid responses. The study conducts a confirmatory factor analysis (CFA) and Structural Equation Modeling (PLS-SEM). Results provided support for role of eWOM valence in influencing the development of CBBE. Specifically, eWOM valence strongly influences consumer perception of brand quality. Perceived quality and brand preference have strong and positive impact on purchase intention, confirming the importance of brand equity in building purchase intention toward a brand. The study is one of the first to examine the effects of eWOM valence on CBBE dimensions, demonstrating the importance of eWOM valence in the building of brand equity.

Keywords – consumer-based brand equity, electronic word of mouth, valence, purchase intention

Paper type - Research paper

Introduction

In marketing, word of mouth (WOM) is the act of consumers sharing information about products, brands, and/or companies to other consumers. When this information is shared through the Internet, it becomes electronic word of mouth (eWOM) (Babić et al., 2015; Hennig-Thurau et al., 2004). WOM is an influential information source during the decision-making process that a consumer goes through when choosing a product or brand (Hennig-Thurau et al., 2004). Seeing comments of a brand on social media, or reading a product review on a website can affect a prospective consumer's attitude towards a product (Le et al., 2018).

The ubiquity of social media in everyday life, together with the growth and prominence of digital, social and mobile marketing, has changed the way consumers interact with brands and share information with each other (Lamberton and Stephen, 2016). In this context, eWOM represents one of the most significant developments in contemporary consumer behavior, turning consumers into empowered decision makers (Babić et al., 2015; Hennig-Thurau et al., 2004). However, the 2020 CMO survey (Moorman, 2020) found that only 30% of marketers reported the ability to measure the impact of social media communications on brand performance. A lack of knowledge of how eWOM affect which specific consumer mindset metrics will likely lead to a suboptimal social media strategy (Lamberton and Stephen 2016).

Thus, it becomes increasingly important to assess how eWOM influences the development of brands and the consumer purchase intention. In this process of brand evaluation, one of the most popular and potentially important topics in marketing has emerged: the concept of brand equity (Keller, 2009). Central to the theory and practice of marketing, brand equity is the result of firm's effort over years to build the capital of its brands (Datta et al., 2017). Brand equity is defined as the value that a brand adds to a product (Foroudi et al., 2018; Yoo and Donthu, 2001). The literature points to two main aspects in the study of brand equity: one based on finance and one based on consumer behavior (Keller, 1993; Yoo and Donthu, 2001). Based on the behavioral view, customer-based brand equity (CBBE) is understood as a set of perceptions linked to the name and symbol of a brand that adds (or subtracts) value to a product or service in the consumer's mind (Aaker, 1991, 1996; Keller, 2009). In this sense, it is theoretically established that eWOM activities reflect both on the development of CBBE (Keller and Lehmann, 2006), and on consumer behavior (Keller, 2001).

In his seminal work, Harrison-Walker (2001) identified two main dimensions of WOM: activity and praise. Whereas activity refers to the enthusiasm and detail – or volume – of WOM, praise reflects to the valence of the WOM communication (i.e. positive, negative, or neutral). While an extensive amount of research has found eWOM to influence the consumer mindset (e.g. purchase intentions, brand attitudes) (Augusto and Torres, 2018; Babić et al., 2015; Lim, 2015; Sijoria et al., 2018a), studies on the effects of eWOM valence on brand equity are scarce (Ballantine and Yeung, 2015).

For instance, Sijoria et al. (2018) investigated whether overall eWOM influence overall CBBE. Even though their results show a significant effect of eWOM on CBBE, both eWOM valence and CBBE dimensions were neglected. The same occurred in Augusto and Torres (2018) empirical research, which also found a significant effect between overall eWOM and overall CBBE. In their meta-analysis, Babić et al. (2015) tested the effect of eWOM valence on a series of firm performance metrics but did not consider brand metrics.

In order to address these gaps, this study explores the relationship between eWOM valence, CBBE dimensions, and purchase intention. It is argued that eWOM valence will influence the consumer's perception about a brand, and consequentially its purchase intention toward the brand. That is, consumers exposed to positive eWOM about a brand will have a better view on that brand than consumer exposed to negative eWOM. Therefore, the present study aims to highlight the influence of eWOM valence on brand equity dimensions, which will transmit the effect to consumer's purchase intention. Hence, two research questions (RQ) arise:

RQ1. Does eWOM valence affect brand equity dimensions?

RQ2. Do brand equity dimensions influence consumers' purchase intention?

To answer the research questions, the sector of electronic products was selected. Specifically, consumers of smartphones and notebooks were studied. These products cover different consumer profiles, have an average replacement cycle, and high cost depending on product specifications. Due to these characteristics, and the wide expansion of the adoption of smartphones and personal computers in society, consumers tend

to buy these products in a planned way, with extensive research on the internet (Akkucuk and Esmaeili, 2016), which fits the purpose of this paper.

Although the previous literature (Godey et al., 2016; Kim and Ko, 2012; Seo and Park, 2018) recognized the influence of various elements of social media marketing on CBBE, this study details the importance of eWOM valence. Thus, when investigating the relationship between eWOM valence and the construction of brand equity and how these variables influence the consumer's purchase intention in relation to a brand, this research contributes to the theoretical framework of marketing, especially in the areas of branding and digital marketing, by advancing the understanding of brand equity dimensions and their relationships with eWOM and purchase intention. As practical implications, the results of this study can contribute to organizations by highlighting the need for investment and planning of social media marketing strategies, making them capable of promoting brand equity, as well as influencing their consumers' buying behavior (Gautam and Sharma, 2017; Sijoria et al., 2018b).

The next section details the literature review and the constructions of the hypotheses of the study; the third section presents the methodology; the fourth section presents the results and discussion, highlighting the theoretical and managerial implications; and the last section concludes the study, presenting the limitations and future directions.

Literature review and hypotheses development

eWOM valence

Word of mouth, including its electronic form, is essential to decision making (Chevalier and Mayzlin, 2006), and has long been one of the most prominent force in the marketplace (Arndt, 1967; Trusov et al., 2009). Electronic word of mouth is defined as a statement made by potential, current or former consumers about a product, brand, or company, which is available for a multitude of people via the Internet (Hennig-Thurau et al., 2004). Online, WOM can quickly disperse and diffuse information to a great number of customers. Social media enables customers to share his or her thoughts easily, which contributes to the dissemination of information (Erkan and Evans, 2016). EWOM can occur in several different ways. Consumers can intentionally post about brands and their products or services; or they may unintentionally display their preferences to their network, such as becoming a fan of brands, interacting with brand posts, liking and commenting or posting content including the brand without any advertising purpose (Erkan and Evans, 2016; Hennig-Thurau et al., 2004).

The valence (positive, neutral or negative) of the eWOM messages plays an important role in the effects of eWOM on consumers (Chevalier and Mayzlin, 2006), as the average rating of online reviews represents the average customer satisfaction (Chintagunta et al., 2010). A positively valence message increases consumer preferences while negative reviews decrease consumer preferences (Chevalier and Mayzlin, 2006; Hennig-Thurau et al., 2004).

Brand equity

Brands serve a number of valuable functions: for customers, they can simplify choice, promise a certain level of quality, reduce risk and build trust; reflect the complete experience that customers have with

products; play an important role in determining the effectiveness of marketing efforts; and they are also an asset in the financial sense. Thus, brands manifest their impact on three main levels: customer market, product market and financial market (Keller and Lehmann, 2006). The value added to the product by these various brand benefits is called brand equity (Yoo et al., 2000).

In recognition of the value of brands as intangible assets, greater emphasis was placed on understanding how to build, measure and manage brand equity. There are three main and distinct perspectives that have been taken by academics to study brand capital: financially, in the company, and in the customer (Keller and Lehmann, 2006). From the financial market point of view, brands are assets that, like facilities and equipment, can and often are bought and sold. The financial value of a brand is, therefore, the price it brings or could bring to the financial market (Hoeffler and Keller, 2003). From the consumer's point of view, brand equity is the attraction or repulsion for a given product generated by the "non-objective" part of the product offer, that is, not by the attributes of the product itself. Although initially a brand can be synonymous with the product it produces, over time through advertising, user experience and other activities and influences, the consumer can develop a series of associations that exist in addition to the objective product (Keller and Lehmann, 2006).

Starting from the consumer's perception, the most influential concepts of brand equity are those of Aaker (1991) and Keller (1993). Aaker (1991) understands brand equity as a set of assets linked to the name and symbol of a brand that adds (or subtracts) value provided by a product or service to the customer. Thus, a consumer perceives brand equity as the "added value" to the product, associating it with a brand name. Keller (1993) defines brand equity as customer-based brand equity (CBBE). The author states that the power of a brand is in the consumer's mind; about what they learned, felt, saw and heard about the brand over time. Thus, CBBE is one of the brand equity derivatives, which incorporates the client's perspective in the design of brand equity (Baalbaki and Guzmán, 2016). The importance of the consumer in relation to the management and development of CBBE goes beyond monetary profits, but reflects the general effectiveness of marketing activities, such as advertising, sales promotion, direct marketing and so on, in the development of brand awareness (Keller and Lehmann, 2006).

The most used CBBE model in the literature is that of Yoo and Donthu (2001), who applied the four components of CBBE presented by Aaker (1991): brand recognition, brand loyalty, brand associations and perceived quality. However, in the experience of Baalbaki and Guzmán (2016), who used this model in several studies, the average variance explained was repeatedly low and the general items of brand equity were loaded under the same factor. Furthermore, Christodoulides et al. (2015) claim that they found limitations to the use of this model. Given the dynamics in creating brand meaning and value in the current market, Baalbaki and Guzmán (2016) developed a new consumer-oriented brand equity model. The model was developed from qualitative data from 1,423 students and consumers, in which respondents were asked to say five to ten words that come to mind first when they think of a brand that is important to them. After analyzing the results, the scale was composed of four dimensions: perceived quality, preference, social influence and sustainability.

Perceived quality describes how consumers perceive a brand in terms of consistency, acceptable standards, performance, reliability, functionality and good quality (Baalbaki and Guzmán, 2016). The preference describes whether a brand is the consumer's first choice, whether the consumer is loyal to the brand,

whether the consumer will not buy other brands if a specific brand is available in the store, and how much a consumer is committed to buying that brand (Yoo and Donthu, 2001). Social influence is a dimension that has never been included on a previous scale. Consumers evaluate the brand in terms of social approval, where the brand makes a good impression on other people, gives social approval to its owner and helps them feel accepted. This dimension describes ways in which consumers gain value by using (buying) a brand to obtain social approval (Baalbaki and Guzmán, 2016). The sustainability dimension reflects the current moment when consumers are more aware of brands and companies that are environmentally safe, environmentally responsible, sustainable and healthy (Baalbaki and Guzmán, 2016). Previous empirical research shows that the perception of brand sustainability makes consumers more loyal to a brand, improves brand performance (Lai et al., 2010), and can explain consumer behavior (Bailey et al., 2018). Sustainability is, therefore, a current and important dimension that has never been included in brand equity scales (Baalbaki and Guzmán, 2016).

Purchase intention

The intention to exert some behavior is a central construct of Ajzen's (1991) model of Theory of Planned Behavior. According to the author, intentions are assumed to capture the motivational factors that influence a behavior; they are also indications of the amount of effort that people are planning to exert in order to carry out the behavior. Thus, the purchase intention refers to the mental stage in the decision-making process, in which the consumer develops a real willingness to act towards a product or brand (Wells et al., 2011). Spears and Singh (2004), in turn, defined purchase intention as an individual's conscious plan to make an effort to buy a brand. Ajzen (1991) states that, as a general rule, the stronger the intention to engage in behavior, the more likely it is to be effective, but that effectiveness depends, at least to some degree, on non-motivational factors, such as availability opportunities, and resources needed (time, money, skills). In addition, the main objective of marketing communications is to make consumers form the intention to buy the marketed product (Hutter et al., 2013).

EWOM valence and brand equity

If consumers are satisfied with a brand or product, they are likely to develop content favorable to it. If they don't like the brand or product, or are marked by a bad experience, they can generate negative content regarding the brand on social media (Jeong and Koo, 2015). Keller (2008) states that the capital of the brand resides in what customers have learned, felt, seen and heard about the brand. Thus, when consumers are exposed to content about a brand, the valence of that content can positively or negatively influence CBBE (Bruhn et al., 2012; Sijoria et al., 2018b).

Previous empirical research (Augusto and Torres, 2018; Bambauer-Sachse and Mangold, 2011; Colicev et al., 2018; Sijoria et al., 2018a) examined the direct effects of eWOM on brand equity. Bambauer-Sachse and Mangold (2011) examined the effects of online product reviews - a specific form of eWOM - on CBBE. The results show that when the review is negative, there is a negative effect on the company's brand equity. Sijoria, Mukherjee and Datta (2018) measured the effects of electronic word-of-mouth on brand equity in the hospitality context. Their results indicate that the eWOM significantly influences the CBBE. The study also found that valence, satisfaction, loyalty and confidence in online reviews increase CBBE. Augusto

and Torres (2018) investigated the effect of eWOM attitudes on CBBE in the banking sector. One of the authors' results reveals that a positive perception of the content positively influences brand equity. Colicev et al (2018) investigated how CGUs relate to brand recognition (one of the dimensions of CBBE proposed by Keller (1993)), and to customer satisfaction. The authors found evidence that eWOM has a significant effect in both variables.

Although prior empirical researches (Augusto and Torres, 2018; Bambauer-Sachse and Mangold, 2011; Colicev et al., 2018; Sijoria et al., 2018a) did not investigate the effect of eWOM valence on CBBE dimensions, their results demonstrate a significant relationship between electronic word-of-mouth on overall customer-based brand equity. Thus, it is expected that eWOM will have a significant effect on all dimensions of CBBE. As this paper uses Baalbaki and Guzmán's (2016) model dimensions of CBBE - perceived quality, preference, social influence, and sustainability - the following hypothesis are formulated.

H1a: eWOM valence about a brand will influence the perceived quality of that brand.

H1b: eWOM valence about a brand will influence the brand preference.

H1c: eWOM valence about a brand will influence the perceived social influence of that brand.

H1d: eWOM valence about a brand will influence the perceived sustainability of that brand.

Brand equity and purchase intention

The seminal work of Cobb-walgren et al. (1995) explored some of the consequences of brand equity: consumer preferences and purchase intention. Their results reveal that the brand with the highest capital generated significantly higher preferences and purchase intentions than the brands with the lower values. The authors conclude that the consumer's purchase intention is one of the most significant consequences of CBBE. More recent empirical researches found similar results. In the air transport sector, Chen and Chang (2008) found similar results, with brand equity positively and significantly influencing consumers' purchase intentions. Foroudi et al. (2018) investigated the relationship between the dimensions that constitute perceptual components of brand equity - brand perception, perceived quality, brand association, brand preference, brand image and country product image - in behavioral components brand loyalty and brand purchase intention. The results showed that all dimensions of the CBBE significantly influence consumer mindset and behavior.

To test the effects of CBBE on purchase intention, most previous research (Chen and Chang, 2008; Cobb-walgren et al., 1995; Liu et al., 2017) used Yoo and Donthu (2001) scale to measure brand equity, finding significant effect. Thus, it is expected that the brand equity dimensions proposed by Baalbaki and Guzmán (2016) will significantly influence the consumer's purchase intention.

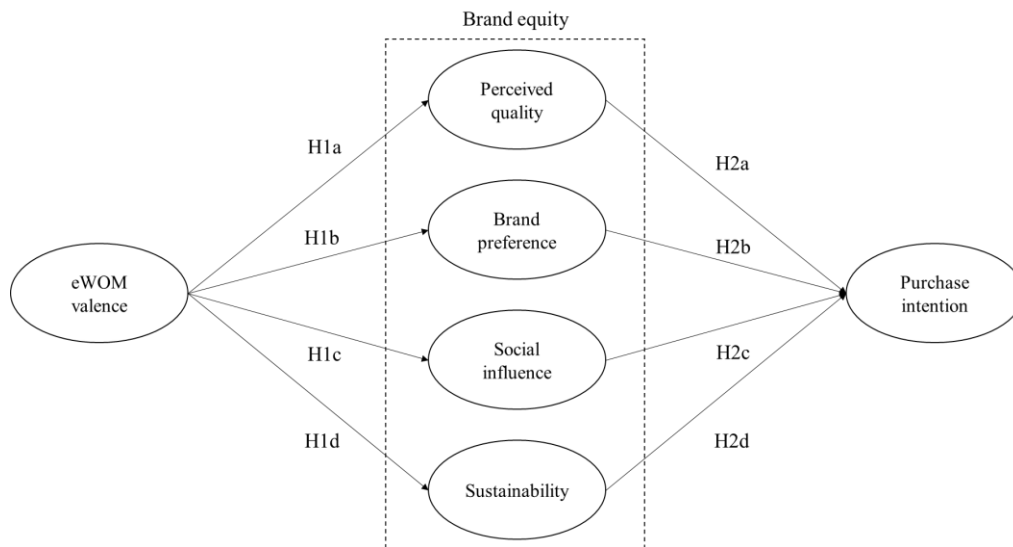
H2a: The perceived quality of a brand will influence the purchase intention toward that brand.

H2b: Brand preference will influence the purchase intention toward that brand.

H2c: The social influence of a brand will influence the purchase intention toward that brand.

H2d: The sustainability of a brand will influence the purchase intention toward that brand.

Figure 1 illustrates the conceptual framework of this study.

Figure 1 – Conceptual model

Methodology

Measures

Six latent variables were included in this study: eWOM valence, Perceived quality, Brand preference, Social influence, Sustainability, and Purchase intention. To measure Purchase intention the scale used in this research followed the work of Bian and Forsythe (2012). The scale has four items that measures the propensity of consumers to buy products of a certain brand. Consumer-base brand equity dimensions were measured using Baalbaki and Guzmán's (2016) model of CBBE, as discussed in the literature review: Perceived quality measured by nine items, and Brand preference, Social influence, and Sustainability by four items each. Moreover, to measure eWOM valence, the scale of Ballantine and Yeung (2015) with four items was adopted. All scales were measured using a seven-point Likert scale where 1 = “strongly disagree” and 7 = “strongly agree”. Two control questions were included in order to ensure that the respondents were consumers of technological products and that they had been exposed to eWOM during the purchase process. Two more questions were added, asking what product (smartphone or notebook) and of what brand the respondent purchased in the previous 12 months. Finally, three more questions were included to identify the socioeconomic profile of the participants: age, gender, and household income. As the questionnaire was administered in Portuguese, a back-translation process was used to ensure a correct translation. The variables and its items are presented in Table II.

Data collection

To collect the data, an online survey was prepared in Google forms, and conducted using convenience sampling. The questionnaire was sent via e-mail to about 2,000 undergraduate and graduate students of a Brazilian university. Data collection took place during July 2019. In total, 377 responses were received. After eliminating respondents who did not meet the criteria, the final sample for analysis of the model was composed by 209 observations. There were no missing values in the responses since all questions had to be answered for the respondent to submit the questionnaire. The socioeconomical profile of the participants is presented in Table I.

Table I - Sociodemographic characteristics of the sample.

Variable	Value (N=209)
<i>Gender</i>	
Male	57%
Female	43%
<i>Household income (BRL\$)</i>	
≤ 2,000	25%
2,000 - 4,000	25%
4,001 - 10,000	34%
10,001 - 20,000	12%
> 20,000	3%
<i>Age</i>	
Min.	18
1st Q.	22
Median	26
Mean	28.41
3rd Q.	31
Max.	61

The sample size exceeds the minimum requirement of the statistical analysis tool used, PLS-SEM, of 10 times the largest number of structural paths directed to a given construct in the structural model, in this case, 40 (Hair et al., 2014, 2017). Moreover, it meets the criteria of Malhotra and Birks (2000) of 200 respondents in marketing research. Finally, the sample size is similar to previous research on brand equity (Christodoulides et al., 2012; Çifci et al., 2016; Lai et al., 2010; Netemeyer et al., 2004).

Data analysis and results

First, a Confirmatory Factor Analysis (CFA) was conducted to ensure convergent and discriminant validities of the measurement model. Convergent validity describes the ability of the construct to measure what should be measured, while discriminating validity describes the level of the construct and its indicators as being different from other constructs and their respective indicators (Hair et al., 2017). Four criteria were used to assess the convergent validity of the constructs: Cronbach's Alpha > 0.6, Dillon-Goldstein rho > 0.7, AVE > 0.5 and factors loadings > 0.7 (Hair, Hult, et al., 2014; Hair et al., 2017; Sanchez, 2013). Discriminant validity is obtained by the Fornell-Lacker criterion, in which the square root of the AVE of each construct must be greater than its correlation with any other construct (Hair et al., 2017).

All the items loaded strongly to their respective variable, with factor loadings > 0.7. Moreover, the AVE presented sufficient evidence of convergent validity, as values for each construct was greater than 0.50. In addition, the examination of the Dillon-Goldstein's rho and Cronbach's alpha estimates showed that the values are greater than 0,8, which provided enough evidence of construct validity. Table II summarizes convergent validity results. Furthermore, discriminant validity was established because all square root of

the AVE of each construct was greater than its correlation with any other construct, as presented in Table III.

Table II. Confirmatory factor analysis

Variables/items	Mean	SD	Factor loadings
<i>Valence [$\alpha = 0.894$; DGR = 0.927; AVE = 0.760]</i>			
V1 Consumers rate the brand positively	5.502	1.109	0.899
V2 In general, consumers recommend the brand	5.698	1.196	0.860
V3 Consumers speak well of the brand on the internet	5.483	1.160	0.875
V4 In general, consumers are favorable to the brand	5.430	1.440	0.851
<i>Perceived quality [$\alpha = 0.958$; DGR = 0.964; AVE = 0.751]</i>			
Q1 Brand reliability is very high	5.578	1.448	0.847
Q2 The brand is consistent in the quality it offers	5.612	1.350	0.871
Q3 Brand performance is very high	5.511	1.400	0.882
Q4 The quality of the brand is extremely high	5.421	1.422	0.875
Q5 Brand functionality is very high	5.598	1.271	0.851
Q6 The brand has consistent quality	5.631	1.320	0.900
Q7 The brand's products perform consistently	5.444	1.314	0.813
Q8 The brand has an acceptable standard of quality	5.918	1.110	0.878
Q9 The brand's products are well made	5.765	1.299	0.878
<i>Preference [$\alpha = 0.859$; DGR = 0.904; AVE = 0.703]</i>			
P1 The brand is my first choice	4.354	1.970	0.834
P2 I consider myself loyal to the brand	3.367	2.018	0.815
P3 I will not buy other brands if the brand is available	3.789	2.038	0.827
P4 I am committed to buying the brand	3.660	2.027	0.876
<i>Sustainability [$\alpha = 0.886$; DGR = 0.921; AVE = 0.740]</i>			
S1 The brand is environmentally safe	4.129	1.571	0.881
S2 The brand is environmentally responsible	4.040	1.524	0.829
S3 The brand is sustainable	4.081	1.502	0.882
S4 The brand is healthy	4.464	1.664	0.848
<i>Social influence [$\alpha = 0.818$; DGR = 0.881; AVE = 0.635]</i>			
I1 The brand improves the way I am perceived by others	3.526	1.883	0.807
I2 The brand makes a good impression on other people	4.913	1.696	0.817
I3 The brand gives its owner social approval	4.038	1.970	0.826
I4 The brand helps me feel accepted	3.401	2.026	0.734
<i>Purchase intention [$\alpha = 0.892$; DGR = 0.926; AVE = 0.757]</i>			
PI1 If I were to buy a product, I would consider buying from that brand	5.574	1.395	0.821
PI2 If I were buying a product, the likelihood of buying that brand is high	5.311	1.494	0.884
My desire to buy this brand would be higher if I were buying a			
PI3 product	4.913	1.768	0.865
PI4 The likelihood that I would consider buying that brand is high	5.454	1.525	0.908

Note: AVE = average variance extracted; DGR = Dillon-Goldstein's rho; α = Cronbach's alpha

Table III – Fornell-Lacker criteria

Variable	(1)	(2)	(3)	(4)	(5)	(6)
eWOM Valence (1)	0.872					
Perceived quality (2)	0.600	0.866				
Brand preference (3)	0.302	0.525	0.838			
Sustainability (4)	0.203	0.362	0.453	0.860		
Social influence (5)	0.269	0.400	0.520	0.412	0.797	
Purchase intention (6)	0.460	0.780	0.658	0.375	0.441	0.870

Note: Bold numbers are the square root of AVE

Next, the structural model was analyzed using Structural Equation Modeling (PLS-SEM) and the software R, specifically the “plspm” package (Sanchez et al., 2017) were used to perform the data analysis. PLS-SEM uses a set of multivariate statistical methods to identify and analyze multiple dependency relationships between variables (Hair et al., 2017). Since PLS-SEM is a non-parametric method, it does not assume that the data is normally distributed. Thus, to test the significance of the results, the PLS-SEM algorithm performs a procedure known as bootstrap (Hair et al., 2017; Hair, Black, et al., 2014; Sanchez, 2013). In bootstrap many samples are created from the original observations (with replacement), with each bootstrap-sample having the same number of observations as the original sample. The bootstrap-samples are then used to estimate the PLS path model, that is, when using 5,000 sub samples, 5,000 different PLS models are calculated. The estimates of the coefficients of these models form a bootstrap distribution. Based on this distribution, it is possible to determine the standard error and standard deviation of the estimated coefficients, and thus test their significance (Keller, 2009). The analysis of the results of the structural model must follow three steps (HAIR et al., 2014). The first is to analyze the degree of collinearity between the independent variables of the model, the second step is to evaluate the value of the coefficient of determination (R^2) of the dependent variables, and the third is to assess the significance and relevance of the path coefficients.

To assess the collinearity among the independent variables, Hair et al (2014) suggests using the variance inflation factor ($VIF \leq 5$). As presented in the Table IV, the model meets this criterion. The R^2 values were used to evaluate the explanatory power of the conceptual model. The explanation power of eWOM valence on the brand equity dimensions were 0,359 for Perceived quality, 0,091 for Brand preference, 0,041 for Sustainability, and 0,072 for Social influence. Although all values of R^2 are significative, eWOM valence only strongly explains the Perceived quality dimensions, with weak explanation power on the other dimensions. The combined explanation power of CBBE dimensions on Purchase intention, however, is strong, with a R^2 of 0,694. With a value of 0.20 considered high for consumer behavior studies, the model presents reasonable values for R^2 , explaining a meaningful amount of variation in the dependent variables.

Table IV - Collinearity

Dependent	Independent	VIF
Purchase intention	Perceived quality	1,448
	Brand preference	1.737
	Sustainability	1.352
	Social influence	1.477

The next step is to assess the significance and relevance of the path coefficients. As presented in Table V, the impact of eWOM valence on all CBBE dimensions were significant. The strongest effect was on Perceived quality, with $\beta = 0.600$ ($p = 0.000$), followed by Brand Preference, with $\beta = 0.302$ ($p = 0.000$), Social influence, with $\beta = 0.268$ ($p = 0.000$), and Sustainability, with $\beta = 0.203$ ($p = 0.003$). Thus, research hypothesis H1a, H1b, H1c and H1d were supported. However, the impact of brand equity dimensions on Purchase intention presented mixed results. While Perceived quality and Brand preference have positive significant effect on Purchase intention, with $\beta = 0.595$ ($p = 0.000$) and $\beta = 0.331$ ($p = 0.000$) respectively, Sustainability ($\beta = -0.004$, $p = 0.931$) and Social influence ($\beta = 0.033$, $p = 0.487$) do not affect purchase intention. These results support research hypothesis H2a and H2b but reject H2c and H2d. Moreover, the results demonstrate a significant indirect effect of eWOM valence on Purchase intention, with an effect of 0.464 ($p = 0.000$).

Table V – Path coefficients

Path	Coefficient	P-value	Hypothesis	Test
eWOM Valence -> Perceived Quality	0.600	0.000	H1a	Supported
eWOM Valence -> Brand Preference	0.302	0.000	H1b	Supported
eWOM Valence -> Sustainability	0.203	0.003	H1c	Supported
eWOM Valence -> Social Influence	0.268	0.000	H1d	Supported
Perceived Quality -> Purchase intention	0.595	0.000	H2a	Supported
Brand Preference -> Purchase intention	0.331	0.000	H2b	Supported
Sustainability -> Purchase intention	-0.004	0.931	H2c	Rejected
Social Influence -> Purchase intention	0.033	0.487	H2d	Rejected

To test the robustness of the results, the model was tested for heterogeneity issues (Hair et al., 2017). The research data were stratified by demographic characteristics of the respondents (gender, income, and age) and by the two products analyzed, smartphones and notebooks. To test for differences among these groups, several multi-group analyses (PLS-MGA) (Sarstedt and Ringle, 2011) were conducted. As no significant difference between the structural paths emerged from the analysis, there were no heterogeneity issues in the results.

Discussion and conclusion

Theoretical contribution

This research aimed to evaluate the relationships between eWOM valence, costumer-based brand equity dimensions, and purchase intention. Considered broadly, the results provided support for the role of eWOM valence in influencing the development of CBBE, this finding is consistent with prior research (Bambauer-Sachse and Mangold, 2011; Kaplan and Haenlein, 2010; Sijoria et al., 2018a). Considering the subjacent brand equity dimensions, eWOM valence strongly influences the consumer perception of brand quality, while significantly affects brand preference, brand sustainability, and brand social influence. Given the lack of literature concerning the relationship between eWOM valence and CBBE dimensions, these results show a novel aspect on what is the role of valence in generating brand equity.

The findings also reveal that perceived quality and brand preference have strong and positive impact on purchase intention, confirming the importance of brand equity in building purchase intention toward a brand, which is aligned with prior research (Chen and Chang, 2008; Foroudi et al., 2018). However, the effects of brand sustainability and brand social influence are non-significant, meaning that these two dimensions do not cause purchase intention. These results demonstrate that not all dimensions of CBBE are capable of generating purchase intention. In addition, the findings demonstrate a strong indirect effect of eWOM valence on purchase intention. This result further explains the power of eWOM in influencing consumers' perceptions and attitudes toward brands, by direct generating brand equity and indirectly generating purchase intention.

This research also contributes to the existing consumer brand relationship literature by empirically developing and testing a conceptual model showing the relationship between eWOM valence, consumer-based brand equity, and purchase intention. Moreover, previous research studied the effects of eWOM on CBBE in different contexts, such as banking (Augusto and Torres, 2018) and hospitality (Sijoria et al., 2018a). Therefore, this study expands this research stream to the electronic products sector in an emerging market.

Managerial implications

For managers, this study contributes by demonstrating that eWOM valence significantly influence brand equity dimensions, specially the consumers perception about the brand quality and their brand preference. If consumers leave negative reviews of speak negatively about a brand on the internet, other consumers perception on that brand will diminish, and consequently, their purchase intention toward that brand will also reduce. Thus, brand managers must pay extra attention on what consumers say about their brand online. Managing eWOM is often challenging, as the content generated by consumers about brands on the internet is frequently beyond the reach of the company. In this sense, managers can always be attentive to this type of content, devising strategies to smooth the impact when this content is negative. In addition, companies also can actively initiate consumer word-of-mouth communication promote electronic word-of-mouth. Companies should strategically create an environment that promote customers assisting other customers, or fostering firm-facilitated online brand communities, where brand representatives and voluntary customers provide support and information to customers in need, and thus bolster positive eWOM (Kumar

et al., 2010). Marketers should also consider the interactive elements of social media, by developing a sense of connection of the brand and its consumer community.

Limitations and future research

This work has some limitations. First, the focus on the university students ends up excluding a large part of consumers of electronic products, and therefore limiting the interpretation of the results to this specific population. Similarly, the choice to focus the research only on the category of electronic products, specifically on smartphones and notebooks, also limits the interpretation of results. Finally, given that the consumers studied are Brazilian, cultural issues may arise in the extrapolation of results to other contexts. Thus, it is suggested for future research: broaden the focus of consumers, going beyond university students; compare results between different product categories, and between different products; and to analyze how different cultural contexts influence the relationships studied. In addition, in this work the behavioral variable studied was the purchase intention. Other behavioral variables such as loyalty, intention to pay a premium price, among others, can be used and can generate different results and insights.

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