

THE INFLUENCE OF SOCIAL MEDIA COMMUNICATION ON BRAND EQUITY: THE EVIDENCE FOR ENVIRONMENTALLY FRIENDLY PRODUCTS

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Abstract. The paper examines the influences of different forms of brand communication through social media on elements of brand equity in the case of environmentally friendly products. The research was conducted from April to June, 2016 in Serbia, Croatia and Bosnia and Herzegovina and included 778 respondents in the main research. The results show that firm-created social media communication and personal involvement inventory have a positive influence, while user-generated social media communication negatively influences the elements of brand equity. Also, brand awareness and associations, perceived quality and behavioural loyalty are under the strongest positive influence of firm-created social media communication, while word of mouth and commitment are under the strongest positive influence of personal involvement inventory. There are no significant differences of such influences between food and fashion brands. Not only that the paper examines influence of social media communication on brand equity for environmentally friendly products for the first time, but it also uses an innovative model which includes all possible aspects of social media communication and treats loyalty, as element of brand equity, as a multidimensional construct. Recommendations given within this paper can be relevant not only for marketers of environmentally friendly products but also for potential social promotion of green consumption.

Keywords: *digital marketing, user-generated communication, online brand community, brand value, brand loyalty, green products, Serbia, Croatia, Bosnia and Herzegovina*

Introduction

In words of Scott Cook, co-founder of Intuit, “a brand is no longer what we tell the consumer it is - it is what consumers tell each other it is” (Sayler, 2012). This is the essence of modern business philosophy today, in the era of social media communication and highly transparent business surrounding that leaves very little control to marketing managers. Having in mind that almost 97% of companies are present on at least one social media website, 89% of marketing managers use social media platforms to engage consumers (Stelzner, 2014), and that around \$8.22 billion was spent on social media communication by 2015 (Sass, 2013), it can be stated that social media as a business, cultural and social phenomenon has gained substantial momentum over the last few years.

Social media has attracted attention of various academic researchers and practitioners, especially in terms of challenges and opportunities for the process of brand management. Brand equity is no longer valued only by the amount of money invested in brand communication – it is now predominantly a matter of word-of-mouth communication in online environment that is highly dictated by various connected consumers (Severi et al., 2014). Thus, when evaluating brand equity, as the ultimate indicator of the quality of brand-consumer relationship (Wood, 2000), the effects of

online user-generated content need to be implemented in the process because social media - when compared to the traditional ones - tend to be perceived as a much more reliable source of information (Foux, 2006).

The emergence of a number of modern society concerns regarding sustainability has brought environmentally responsible behavior and environmentally responsible brands to the top of companies' business agendas. Consumers' willingness to become green and responsible during purchase stems from their knowledge of the issue i.e. to which extent they are aware of the "effectiveness of green behaviour" and "consumers' trust in claims made by green advocates" (Marques and Almeida, 2013). Likewise, environmentally responsible consumers search for a collective identity that is based on altruistic goals, and accordingly, their purchase could be reinforced by social pressure (Zhao et al., 2014). In this sense, the role of social media as one of the most effective communication instruments in green marketing and green brand equity creation is supported by the fact that "creating change within networks requires all the network actors to respond or adapt to the change in one way or another" (Xu et al., 2007). Such a reaction is provided by social networking practices that "focus on creating, enhancing, and sustaining ties among brand people in brand communities" through joint efforts to make brand value clearly understood and further promoted (Schau et al., 2009).

The aim of this study was to examine the influence of different forms of brand communication through social media on elements of brand equity (brand awareness and brand associations, perceived quality and loyalty including behavioural loyalty, word of mouth and commitment) in the case of environmentally friendly products in the food and fashion industries. The research was conducted in Serbia, Croatia and Bosnia and Herzegovina and included 778 respondents participating in the main research. According to the authors' knowledge, this is the first time that all possible aspects of social media communication (firm-created social media communication, user-generated social media communication and personal involvement inventory) were investigated with regard to environmentally friendly products and their brand equity as a multidimensional construct. Recommendations given within this paper can be relevant not only for marketing strategies and tactics of suppliers of environmentally friendly products, but for potential social promotion of their consumption as well, which can be beneficial in many ways for the society as a whole.

Review of Literature

Brand equity concept

Brands have been recognized by various marketing managers and researchers as one of the most valuable assets of a company because of their role in evaluating and making buying decisions (Kotler and Keller, 2012). Brand is seen as an identifier that differentiates a company and its products and services from competitors (Wood, 2000). It is the promise of a bundle of tangible and intangible attributes of a product that will induce satisfaction of a consumer (Ambler, 1992). Its predominant abstract nature results from its existence and duration in the minds of consumers who perceive it as something unique and valuable. According to Brown (1992), brands are "nothing more or less than the sum of all the mental connections people have around it", and as such, brand studies have consequently placed consumers in the center of attention. The necessity of a deeper insight into the substance of consumer-brand relationship and great endeavors invested in it over the last decades have resulted in the term "brand equity" (Wood, 2000).

Brand equity literature offers an abundance of definitions, models and measurement methods since the phenomenon has been studied from multiple aspects. Kotler and Keller (2012) described it as a link established between consumers' brand knowledge and the amount of company's marketing activities and efforts invested in products in order to become brands, while Yoo et al. (2000) observed brand equity from consumers' point of view, explaining it as "the difference in consumer choice between the focal branded product and an unbranded product given the same level of product features" (p. 196).

In general, brand equity is about brands and added value (Wood, 2000) - it is a marketing term for well-differentiated products with superior value confirmed on the marketplace (Keller, 2003). It requires a long-term focus in managing brand portfolio with the ability of generating added value for a product and improving company's current and future interests and potentials (Wood, 2000). It entails continual investment in the long run, but there is also high likelihood of achieving results that surpass the invested by far.

Aaker (1991) suggested that brand equity generates value for both the customer and the firm, in a way that value created for consumers by default increases value for the firm. The source of sustainable competitive advantage created from high brand equity lies in consumers' willingness to pay a premium for their favourite brands, their recommendations, effective marketing communication, increasing market share, successful business expansion through brand name extendibility, stock market attractiveness and opportunity for mergers and acquisitions, reduced vulnerability to actions of competitors and finally, a chance for making extra profit (Kapferer, 2008; Netemeyer et al., 2004; Vazquez et al., 2002; Mahajan et al., 1994). It ensures company's cash flow and improves financial performance (Mizik, 2014), which are mainly derived from non-price differentiation and unique brand propositions (Aaker, 1991).

From the consumers' standpoint, brand equity is a valuable guidepost in the decision making process, especially in the current market situation of multiple choices and information overload. By providing a package of unique functional benefits, specific personality and symbolic value, brand equity stands for the interests that go beyond the brand itself (McEnnally and de Chernatony, 1999). It enriches consumers' confidence and facilitates decision making, especially when there is a lack of experience with a new group of products (Emari et al., 2012). Perceiving them as a guarantee and a partner, consumers are prone to develop favourable associations and feelings toward well-known brands.

Brand equity is evaluated both from the financial and marketing aspects. The first one refers to strategies that aim to calculate the precise value of a brand for accounting purposes, while the marketing aspect strives to improve marketing productivity and its overall performance (Keller, 1993). Estimating "total value of a brand as a separable asset - when it is sold or included in a balance sheet" (Atilgan et al., 2005) is undoubtedly useful and necessary for brand managers, but it is not crucial for understanding the process of creating brand equity. Making profit by using all opportunities that properly managed brand equity provides requires understanding brand essence and personality - and this is impossible without understanding the mind and attitudes of the consumer (Aaker, 1991). Consumer mindset with respect to the brand includes a collection of thoughts, feelings, experiences, images, perceptions, beliefs, and many other attributes under that brand (Ambler, 2000). Thus, if a brand has no significance or value for the consumer, it is certainly not significant for any other stakeholder.

The most comprehensive brand equity model for measuring both marketing and financial brand value has been given by Aaker (1991). It consists of five different but strongly interdependent variables: 1) brand awareness, 2) brand associations, 3)

perceived brand quality, 4) brand loyalty and 5) other proprietary brand assets (patents, trademarks, channel relationships, and other protected intellectual property) – which are considered the main sources of brand value. The marketing aspect of brand equity has drawn great attention of both researchers and practitioners due to its challenging nature and great importance. Further on in this section, we will discuss only the first four aforementioned dimensions of brand equity, which are well known in the literature as dimensions of consumer based brand equity (Christodoulides and Chernatony, 2010). Understanding them and investing in these dimensions are the basis for creating brand wealth and strengthening company's competitiveness (Yoo, et al., 2000).

Brand awareness and brand associations

Brand awareness is “the ability of a potential buyer to recognize or recall that a brand is a member of a certain product category” (Aaker, 1991, p. 61). Brand recognition requires brands to be seen or heard in order to be identified, while brand recall implies retrieving a brand from consumer's memory when the category of a product or the needs that category fulfills are mentioned (Keller, 1993). Although brand awareness has been often overlooked as a brand equity dimension (Aaker, 1991), it is the most obvious indicator of brand existence and its strength in consumer's mental map (Aaker, 1991; Keller, 1993). It is also the first dimension of brand knowledge (Esch et al., 2006), which shows the power of the brand name and consumer familiarity with it. Brand awareness is what links the brand with certain marketing communication or situation, commitment to the brand, or most importantly, it ensures the brand is taken into account during purchase as a possible choice (Aaker, 1991). Being aware of a brand can produce curiosity, the first and most important step in guiding the consumer to buy the brand, whether just for trial or repeat purchase (Konecnik and Gartner 2007). Awareness has different levels of impact on consumer buying decisions, and as a strong purchase generator is pivotal for making brands successful (Baldauf et al., 2003).

Brand associations refer to everything in memory that is linked to a brand (Aaker, 1991), and those links with the brand will be stronger when they are based on various positive experiences and exposures to marketing communication, as well as when the network of other things in memory connected with brand supports it (Jalilvand et al., 2011). This dimension is closely linked with brand image which differentiates a product from other competitors, makes it unique, generates positive preferences toward the brand and influences the decision-making process (Aaker, 1991).

In this study, brand awareness and brand associations are included in the model, following (Yoo et al., 2000), as a one-dimensional variable.

Brand quality

Perceived quality is a function of consumer evaluation of overall product excellence, utility and superiority (Zeithaml, 1988). It is a concept that summarizes consumer's opinion about brand's functionality, performance perfection, design, sustainability, supporting services, experience and other features and characteristics; and as such is very subjectively determined (Aaker, 1991). Quality is always on the top of the list when it comes to consideration of a brand purchase, given that it confirms brand's ability to satisfy the consumer's needs (Tuominen, 1999).

Brand loyalty

Consumers' commitment to the brand is called brand loyalty (Aaker, 1991). Having a large, stable and growing base of loyal consumers is the most important achievement and at the same time main concern of every company. Loyal consumer has adopted favorable attitude toward the brand as a result of multiple confirmations of brand's ability to meet the needs in the best way, and that positive attitude and experience is in the root of repeated purchase over time (Assael, 2001). Retaining current consumers is much more cost effective than obtaining new consumers and, in addition, loyal consumers are resistant to other competing brands (Aaker, 1991) and important contributors of word-of-mouth communication about the brand (Aaker, 1991). Accordingly, consumer loyalty has direct impact on brand purchase and can provide predictable flow of sales and profitability (Uslu, Durmus and Kolivar, 2013).

At first, brand loyalty was determined by two components – behavioral and attitudinal (Day, 1969). In this sense, Oliver (1997, p. 392) defined it as “a deeply held commitment to rebuy or repatronize a preferred product or service consistently in the future, despite situational influences and marketing efforts having the potential to cause switching behavior”. Later studies explained attitudinal component of loyalty as commitment, while the behavioral component was extracted into two new dimensions – repeat purchase and positive word of mouth (Bloemer and de Ruyter, 1998). This way, loyalty has been presented as a holistic, multi-dimensional construct, which can provide a more comprehensive insight into consumer motivations and internal stimulus. Brand loyalty is a very complex phenomenon that can reflect different stages of consumers' mindset – “from the habitual buyer to the satisfied buyer to those that like the brand to the truly committed” (Tuominen, 1999). Better understanding of consumer loyalty can be crucial for understanding and managing brand equity. Thus, in this study, brand loyalty was viewed through its three components, which were measured and observed in isolation.

Environmentally responsible consumption

Although each product on the market has some impact on the environment and zero impact is just an ideal, both in business and literature products that are characterized as environmentally responsible, sustainable or green are products that “strive to protect or enhance the natural environment by conserving energy and/or resources and reducing or eliminating use of toxic agents, pollution, and waste” (Ottman et al., 2006). As such, they are usually described with some of the following attributes: 1) organically grown, 2) treat the environment less, 3) bought in a second-hand store, 4) save energy, 5) made from recycled material etc. (Raletić Jotanović et al., 2016). In terms of packaging, additional green options are “compostable, biodegradable, refillable and/or reusable” package (Doyle, 2012), less concentrated and bought in bulk with less frequent purchase (Roozen and De Pelsmacker, 2000). Given that they are subject to new and strict legislation, as well as a set of regulations, they include eco-labeling, environmental certification and environmental taxations (Jain and Kaur, 2006). Greening of products is a process with environmental focus that must be sustained in all stages of product life cycle (*Figure 1*).

Reinforcement of sustainable consumption patterns in developed countries and its transference into developing countries, along with the engagement of consumers in environmentally responsible behavior on a global scale is necessary in order to minimize environmental degradation (Mont et al., 2014). However, despite the perception of high quality and added value in the long run, environmentally responsible

products are more expensive than conventional products (Cherian and Jacob, 2012), and as such attract less than 4% of global consumers (Gleim et al., 2013). To attract larger segment of environmentally responsible consumers, company and government influence through relevant strategies can be substantially reinforced by social influence especially when taking into account the fact that sustainable consumption is socially driven by consumers as a group (Spangenberg et al., 2010). Within this group, trust in green claims and credibility of green consumer advocates have indirect, but very important role in creating consumer confidence and knowledge of green brands (Marques and Almeida, 2013; Ottman et al., 2006).

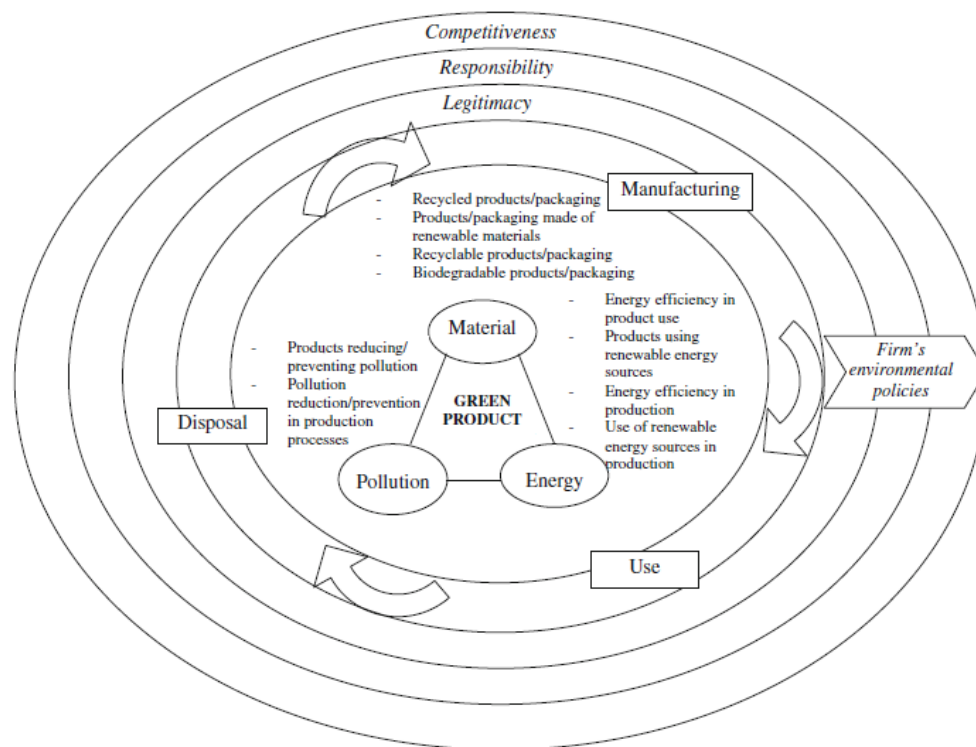


Figure 1. A conceptual framework for green products (Dangelico and Pujari, 2010, p. 472)

Social media communication and brand communities

Growing popularity and involvement of virtual communities in all spheres of modern society strongly suggest the extent to which people have adopted new technologies and the Internet, which have become indispensable means of fulfilling both social and economic goals. Also, there are a number of brand communities emerging on social media platforms, which facilitate marketers to learn about, organize and analyze members of those communities.

Brand communities are “social entities that reflect the situated embeddedness of brands in the day-to-day lives of consumers and the ways in which brands connect the consumer to the brand, and consumer to consumer” (Muniz and O’Guinn, 2001, p. 418). Before the Internet, such relations included personal contacts between companies and consumers, while today people connect with preferred brands in cyberspace, interact around shared interests, and form large and active online brand communities

(Sung et al, 2010). For companies, they are an additional and, in some cases, the leading channel of communication and receiving feedback from consumers (Mathwick, 2002), who are highly willing to exchange personal data with marketers and participate in research on specific topics especially new product development (Moon and Sproull, 2001). Furthermore, electronic brand communities maintain and develop brand-consumer relationship, link current and potential consumers, and finally, accelerate brand loyalty of consumers (Sung et al., 2010). However, they are an extremely delicate tool in brand management which questions managers' control over brand strategy, given that those consumers actively participate in brand communication, leave comments and transparently express their opinion (Berthon et al., 2007).

Today, social media sites are the most popular type of online brand communities. The term social media is used for all forms of electronic communication in which companies and consumers take active part. Social media stands for "global, open, transparent, non-hierarchical, interactive communication that is carried out in real time and changes consumer behavior and business expectations" (Dutta, 2010). They are a simple and effective medium for transmitting information through electronic "word-of-mouth" and include multiple relationships between consumers' networks and a company (Vollmer and Precourt, 2008), which are built through activities such as content sharing, exchange of opinions, perspectives, insights, and communication on daily basis (Nair, 2011). Social media complement traditional media and dominate in the process of obtaining information about brands (Bruhn et al., 2012). They provide support for user-generated content and enable links between consumers who do not know each other (Duan et al., 2008).

Although the limits of social media growth are still uncertain, it is sure that it has established itself as a mass phenomenon that has great potential for reaching a wide range of consumers all over the world (Miller, 2009). Today, as the largest social media community and most perspective virtual marketplace Facebook counts 1.79 billion active users per month, followed by Instagram - 500 million active users per month and Twitter - 313 million active users per month (Facebook MAUs, 2016; Instagram MAUs, 2016; Twitter MAUs, 2016). As the most crowded "places" on the Internet, social media are too large to be ignored.

Research in the field of social media and brand communities has gained increasing importance in recent years. Academic researchers are interested in various subjects, including social media communication impact (both firm and user-generated content) on consumer behavior and brand purchase (Kumar et al., 2016; Xie and Lee, 2015), brand equity (Severi et al., 2014; Schivinski and Dabrowski, 2014; Brogi et al., 2013), evaluation of unfamiliar brands (Naylor et al., 2012), consumer-brand engagement and relationship (Hollebeek et al., 2014; Labrecque, 2014) and brand management in social media environment (Gensler et al., 2013).

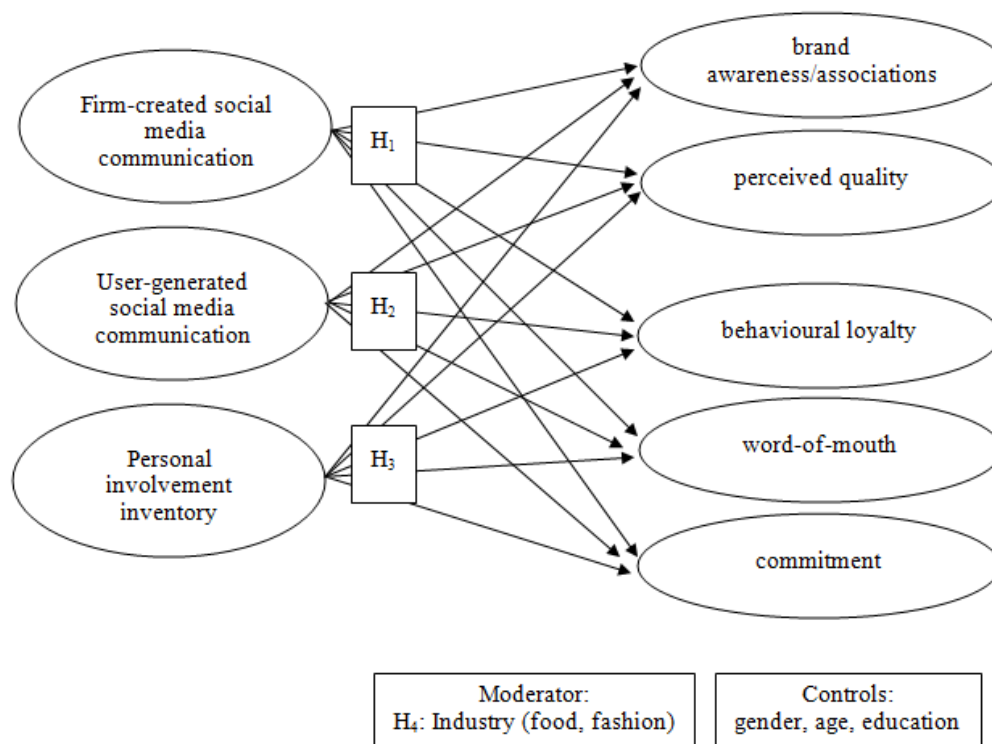
In the context of brand equity and social media, research is still evolving. So far, researchers investigated the impact of social media word-of-mouth communication generated by users, by firms and the combined impact of the two on brand equity elements, brand perception and similar constructs. The respective studies and their diverse implications are presented in *Table 1*. However, according to the authors' knowledge, no one has investigated brand equity of environmentally responsible products in the context of social media communication yet.

Table 1. *The review of existing social media-brand equity studies*

Authors	User-generated content	Firm-generated content	Consumer-based brand equity elements	Other brand constructs	Type of products	Implications
Karpińska-Krakowiak, 2016	x		· Brand equity building blocks: · brand salience · brand performance · brand imagery · brand judgments · brand feelings · brand resonance		· Fast-food brands (Coca-Cola and McDonald's)	· The results show very little (if any) impact of SNS on brand equity.
Barajas-Portas, 2015	x	x		· Brand perception	Not mentioned	· 20-item brand perception extended model include: functional and affective perception, reputation, experience and interaction.
Zheng et al., 2015	x		· Brand loyalty		Not mentioned	· User engagement influenced brand loyalty both directly and indirectly through online community commitment
Severi et al., 2014	Electronic word-of-mouth		· brand loyalty, · brand association, · brand awareness, · perceived quality	· Brand image	Not mentioned	· There is an indirect inter-relationship between electronic w-o-m and the dimension of brand equity, mediated by the respective various brand equity constructs
Schivinski, and Dabrowski, 2014	x	x	· Overall brand equity	· Brand attitude	· non-alcoholic beverages · clothing · mobile operators	· User-generated SMC had a positive influence on brand equity and brand attitude · Firm-created SMC affected only brand attitude
Barreda, 2014	x		· Brand awareness · Overall brand equity	· Brand image	· travel brand	· Website interactivity positively affects brand awareness and brand image, and, consequently, brand equity · WI has central role in the development of brand knowledge, as a critical determinant of brand equity
Jung et al., 2014	x	x		· Brand trust	· Nike brand	· Social and informational benefits of OBC have positive impacts on attitude, which, in turn, significantly influence revisit intention and brand trust.

Park and Kim, 2014	x	x		· Brand relationship quality (BRQ)	· apparel brands · restaurant/ · coffeehouse brands	· BSN relationship quality does exist and positively influences the members' BRQ and WOM intention about the brand's SN.
Andéhn et al., 2014	x		· Overall brand equity		· place brand (Stockholm)	· User-generated brand equity on Twitter is characterized by a particular type of manifestation of a brand and its associations · brands and brand association are typically highly volatile, with changing nature in SM environment
Brogi et al., 2013	x		· brand loyalty, · brand association, · brand awareness, · perceived quality		· luxury fashion brands	· OBC dynamics (brand community, participation, brand community's generated content, members' perception of the brand quality) positively influence brand equity.
Mosavi and Kenarehfar, 2013	x		· Brand loyalty	· Brand trust	· Samsung Galaxy brand	· Only one of the practices (community engagement) contributes to brand trust.
Erdogmus and Cicek, 2012		x	· Brand loyalty		Not mentioned	· Brand loyalty is positively affected when the brand: (1) offers advantageous campaigns, (2) offers relevant content, (3) offers popular contents, (4) appears on various platforms and offers applications on social media.
Laroche et al., 2012	x		· Brand loyalty	· Brand trust	Not mentioned	· SM brand communities could enhance brand loyalty through brand use and impression management practices. · Brand trust has a full mediating role in converting value creation practices into brand loyalty.
Bruhn et al., 2012	x	x	· Brand awareness	· Brand image (functional and hedonic) · Brand attitude	· tourism · telecommunications · pharmaceuticals	· Traditional media has a stronger impact on brand awareness. · Social media communications strongly influence brand image.
Hur et al., 2011	x		· Brand loyalty		· mobile phone brand	· Brand community trust → brand community commitment; brand community affect → brand community commitment; and brand community commitment → brand loyalty behaviors. · Brand community commitment was found to play a mediating role in the relationships between brand community trust/affect and brand loyalty.

Accordingly, as a result of the need for a more comprehensive analysis of green brand equity and social media, a model has been formulated based on the literature presented above (Figure 2).



Source: Own analysis

Figure 2. Formulated model of green brand equity and social media

In addition, the following hypotheses have been formulated:

H₁: Firm-created social media communication positively and significantly affects all the elements of brand equity.

H₂: User-generated social media communication positively and significantly affects all the elements of brand equity.

H₃: Personal involvement inventory positively and significantly affects all the elements of brand equity.

H₄: Industry to which brands of environmentally friendly products belong to mediate the relationships between different manners of brand communication through social media and elements of brand equity.

Materials and methods

Respondents

In order to test reliability and validity of the questionnaire, 378 respondents were interviewed in the first phase of the research. The second phase included 778 respondents in the examination of instrument's reliability and unidimensionality as well as conducting structural equation modelling. Hereby, the sample for the main research

included 358 respondents from the Republic of Serbia, 228 from the Republic of Croatia and 192 from Bosnia and Herzegovina. Selection of the respondents was based on the following criteria: they all had to have their own Facebook account, have liked and shared certain content about fashion or food brand that is characterised as environmentally friendly (according to Raletić Jotanović et al., 2016) and that they have purchased that brand. Within the main sample 398 answers related to fashion brands and 380 to food brands.

A questionnaire was distributed for the purpose of structured personal interviews conducted from April to June, 2016. Convenience sampling was used. Structures of the samples included in the first and the second phase of the research are shown in the following table.

Table 2. *Characteristics of samples*

characteristics of respondents		the first phase	the second phase
gender	male	43.9	42.0
	female	56.1	58.0
age	average (standard deviation)	24.33 (7.111)	23.53 (6.324)
level of education	finished primary school	1.1	0.9
	currently attending secondary school	6.3	5.4
	finished secondary school	14.6	11.8
	currently attending faculty or college	59.5	67.0
	finished faculty or college	13.5	11.1
	currently attending postgraduate studies	3.4	2.8
	finished postgraduate studies	1.6	1.0

Source: own research

The largest portion of the sample was expected to be formed of students when taking into account the criteria respondents had to meet and given that 82% of 18 to 29-year-olds are regular users of Facebook (Fontein, 2016).

Questionnaire

The questionnaire consisted of two parts. The first part included 38 questions that were rated on 8 scales (3 related to brand communication on social media and 5 related to the elements of brand equity). Each of the scales measured one of the following variables: firm-created social media communication and user-generated social media communication (Schivinski and Dabrowski, 2015); personal involvement inventory (Zaichkowsky, 1994); brand awareness/associations and perceived quality (Yoo et al., 2000); and loyalty dimensions: behavioural, word of mouth and commitment (Bridson et al., 2008). The scales used were adapted to the content of the research - all of them related to food or fashion brands belonging to environmentally friendly products that respondents have liked, shared and purchased, which was stated by the respondents at the beginning of the questionnaire. The final version of the questionnaire was formulated after pretesting had been conducted in order to determine the level to which the respondents understood the questions and found them sensible. All the scales were designed as a 7-point Likert scale (1 – the lowest mark, 7 – the highest mark). The

second part of the questionnaire was designed to gather data regarding respondents' gender, age and level of education.

Procedures

During reliability testing Cronbach's alpha, Cronbach's alpha if item deleted and Corrected item-total correlation were used. For validity testing Maximum likelihood factor analysis with Varimax rotation was implemented. In the second phase, reliability was tested once again as described above, while unidimensionality was tested by using confirmatory factor analysis.

To test the influence of the three different forms of brand communication through social media on five elements of brand equity structural equation modelling was used. Hereby, composite variables were used. Gender, age and education were used as control variables and were connected to dependent variables. During moderation analysis, it was examined whether there were differences in influence of independent variables on dependent variables in the case of brands of environmentally friendly products belonging to fashion or food industry.

When conducting confirmatory factor analysis and structural equation modelling, model fit was compared to the thresholds given by Hu and Bentler (1999). Statistical packages SPSS and AMOS were used.

Results

Testing the research instrument

During the testing of reliability and validity of the instrument which included answers of 378 respondents, only one item belonging to the scale measuring brand awareness/associations was identified as the one whose exclusion would increase the value of Cronbach's alpha of the scale it belongs to. After its removal, the value of Cronbach's alpha for that scale reached 0.796, while all other values were higher than 0.8. All the values of Corrected item-total correlation of each item to its corresponding scale were high while the lowest value was 0.522.

As for the exploratory factor analysis, the results of Kaiser-Meyer-Olkin test of 0.909 and Bartlett's Test of Sphericity being significant at 0.000 proved it appropriate. When using Kaiser Criterion with Eigenvalue higher than 1, eight factors were identified explaining 67.720% of the variance and corresponding to the scales used in the research. All the items were loading strongly on their respective factors, whereas in each case the average loading of items on adequate factor was higher than 0.7. Besides, the differences between loadings of each item on two factors in which it had highest loadings was higher than 0.2.

In the second phase, when reliability and unidimensionality were tested based on the answers of 778 respondents, no items whose exclusion would increase the value of Cronbach's alpha were identified. Hereby, all the values of Cronbach's alphas were higher than 0.9 while the lowest Corrected item-total correlation was 0.685.

The results of confirmatory factor analysis showed that the lowest factor loading was 0.73, while every R^2 was higher than 0.5. After correlating residuals' covariances, according to modification indices, the results regarding fit indices were acceptable in almost all cases in comparison to the thresholds given by Hu and Bentler, (1999) – written in brackets: Chi-square / df = 2.12 (less than 3 good; less than 5 sometimes

permissible); p – value for the model = 0.000 (should be higher than 0.05); CFI = 0.98 (higher than 0.95 great; higher than 0.9 traditional; higher than 0.8 sometimes permissible); GFI = 0.92 (should be higher than 0.95); AGFI = 0.90 (should be higher than 0.8); SRMR = 0.03 (should be less than 0.09); RMSEA = 0.04 (less than 0.05 good; 0.05-0.10 moderate; higher than 0.10 bad); PCLOSE = 1.00 (should be higher than 0.05). When validating the measurement model, all the values of Composite Reliability (CR) and Average Variance Extracted (AVE): firm-created social media communication (CR = 0.907; AVE = 0.710), user-generated social media communication (CR = 0.901; AVE = 0.751), personal involvement inventory (CR = 0.946; AVE = 0.636), brand awareness (CR = 0.903; AVE = 0.699), perceived quality (CR = 0.933; AVE = 0.823), behavioural loyalty (CR = 0.945; AVE = 0.810), word of mouth (CR = 0.930; AVE = 0.816) and commitment (CR = 0.932; AVE = 0.733) suggested no validity concerns.

When considering multivariate assumptions, the curve estimations of all the relationships between independent and dependent variables have shown that these relationships were sufficiently linear to be tested by using covariance based structural equation modelling algorithm. Besides, there were also no multicollinearity issues between independent variables.

It can be concluded that after removal of one item, all the scales used within this research could be considered acceptable regarding their reliability, validity and unidimensionality. There were also no problems that could prevent their usage in structural equation modelling.

Results of structural equation modelling

Table 3 shows descriptive statistics for the variables used within the model.

Table 3. Descriptive statistics for the variables

Variables	number of respondents	mean	standard deviation
firm-created social media communication	778	5.05	1.07
user-generated social media communication	778	4.67	1.13
personal involvement inventory	778	4.69	1.28
brand awareness/associations	778	5.50	1.02
perceived quality	778	5.11	1.25
behavioural loyalty	778	5.15	1.29
word of mouth	778	4.95	1.47
commitment	778	4.29	1.35

Source: own research

When considering model fit during structural equation modelling, it can be concluded that after correlating residuals' covariances, according to modification indices, in cases where possible, these results were acceptable in almost all cases in comparison to thresholds given by Hu and Bentler, (1999): Chi-square / df = 2.49; p – value for the model = 0.000; CFI = 1.00; GFI = 0.99; AGFI = 0.96; SRMR = 0.03; RMSEA = 0.04; PCLOSE = 0.67.

Table 4 shows estimates of standardized regression weights and their statistical significance.

Table 4. The results of structural equation modelling (standardized effects)

Dependent variables	Independent variables		
	firm-created social media communication	user-generated social media communication	personal involvement inventory
brand awareness/associations	0.67 ***	-0.20	0.07
perceived quality	0.59***	-0.23***	0.23***
behavioural loyalty	0.60 ***	-0.21***	0.24***
word of mouth	0.21 ***	0.00	0.44***
commitment	0.36***	-0.13	0.43***

Note: *** statistically significant; Source: own research

The results show that firm-created social media communication affects positively and significantly all the elements of brand equity. The influence is highest for brand awareness/associations, perceived quality and behavioural loyalty. In concrete cases, when firm-created social media communication goes up by one standard deviation, it causes brand awareness/associations to increase for 0.67 standard deviations, behavioural loyalty for 0.60 and perceived quality for 0.59.

When it comes to the influence of user-generated social media communication on the elements of brand equity, it can be seen that it affects significantly only perceived quality and behavioural loyalty. However, these influences are negative. Hereby, when user-generated social media communication increases by one standard deviation, it causes perceived quality to decrease by 0.23 and behavioural loyalty by 0.21 standard deviations.

Finally, as for the influence of personal involvement inventory on the elements of brand equity, it can be stated that it affects significantly and positively all these elements except for brand awareness. The influence is highest for word of mouth and commitment. So, when personal involvement inventory goes up by one standard deviation, it causes word of mouth to increase by 0.44 and commitment by 0.43 standard deviations.

Table 5 presents the results of moderation analysis.

Table 5. Moderation analysis

Dependent variables	←	Independent variables	fashion		food		z-score
			Estimate	P	Estimate	P	
brand awareness/associations	←	firm-created social media communication	0.65	0.00	0.63	0.00	-0.23
perceived quality	←	firm-created social media communication	0.70	0.00	0.65	0.00	-0.34
behavioural loyalty	←	firm-created social media communication	0.71	0.00	0.73	0.00	0.12
word of mouth	←	firm-created social media communication	0.38	0.00	0.25	0.05	-0.80
commitment	←	firm-created social media communication	0.46	0.00	0.44	0.00	-0.17

brand awareness/associations	←	user-generated social media communication	-0.16	0.04	-0.22	0.01	-0.56
perceived quality	←	user-generated social media communication	-0.24	0.01	-0.26	0.01	-0.14
behavioural loyalty	←	user-generated social media communication	-0.17	0.06	-0.33	0.00	-1.19
word of mouth	←	user-generated social media communication	0.02	0.84	-0.04	0.71	-0.41
commitment	←	user-generated social media communication	-0.12	0.22	-0.21	0.04	-0.71
brand awareness/associations	←	personal involvement inventory	0.06	0.19	0.05	0.22	-0.03
perceived quality	←	personal involvement inventory	0.23	0.00	0.20	0.00	-0.38
behavioural loyalty	←	personal involvement inventory	0.20	0.00	0.27	0.00	0.96
word of mouth	←	personal involvement inventory	0.45	0.00	0.57	0.00	1.46
commitment	←	personal involvement inventory	0.41	0.00	0.49	0.00	1.03

Source: own research

As it can be seen from the previous table, even though there are differences regarding influence of independent on dependent variables in the case of brands of environmentally friendly products belonging to different industries, these differences are not statistically significant.

Discussion, recommendations and conclusions

Results of the paper suggest that firm-created social media communication and personal involvement inventory affect positively and significantly all the elements of brand equity (in the case of personal involvement inventory the exception is brand awareness/associations). Hereby, firm-created social media communication has greater influence on brand awareness/associations, perceived quality and behavioural loyalty, while word of mouth and commitment are under the greater influence of personal involvement inventory. On the other hand, user-generated social media communication negatively affects perceived quality and behavioural loyalty.

Results of the research can have important managerial implication. Therefore, a company's attempt to reinforce different elements of brand equity can be used as a frame for giving recommendations.

The only form of communication through social media identified as important for brand awareness/associations is communication performed by the company itself. The more positive customers' evaluation of firm's brand communication is (in the case of environmentally friendly products) - the greater brand awareness/associations is; including the ability to differentiate the brand from other competitors. This can be especially important in the first phase of product life cycle and it suggests that there is no need to engage other parties in creating brand communication (such as agencies offering their employees' comments on the brand that would be visible to customers as voluntary comments of other brand customers).

When a company aims to improve perceived quality of its environmentally friendly brand, emphasis needs to be put on firm-created brand communication through social media as it is important for this kind of brand communication to be considered positive by customers. To achieve this, customer personal evaluation that they feel positively emotional about liking and sharing content about particular brand can be of importance as well. Possible recommendations will be given below where this factor is of greatest importance. Having in mind that customers' positive evaluation of other customers' activities on social networks regarding their presence and attractiveness negatively influences perceived quality of company's environmentally friendly brand, companies should not hire professional agencies to create such content. The reason for such negative influence can be the awareness of the researched customers (who are predominantly young, familiar with social networks and might know people engaged by such agencies) that such activities are undertaken, especially if evaluated as professionally performed, in cases where the brand is not valuable per se. Besides, other customers involved in brand communication might present themselves as more competent than they actually are, while their statements have no legal consequence for the company.

Study results also suggest that loyalty needs to be viewed as a multidimensional construct just as this is implied by recent theoretical developments. It can be seen that recommendations that should be given for increasing behavioural loyalty only partly resemble those that address strengthening word of mouth and commitment. As for improving behavioural loyalty, companies should undertake similar measures to those already listed when targeting perceived quality. However, when it comes to word of mouth and commitment, companies should take steps to encourage customers to feel positively emotional about sharing/liking its environmentally friendly brands. This can be a consequence of customer personal characteristics but can also be stimulated by company's activities. The company should suggest the significance of customer's activities on social networks by trying to make them feel important for the company, connect them with the brand and encourage their emotions towards such activities. On the other hand, taking care that company's communication on social media regarding environmentally friendly brand is positively evaluated by customers is to some extent less important, while customers' evaluations of other customers' activities on social networks regarding brand has no importance at all. Relying on word of mouth and commitment can be of greater importance after early phases of product life cycle.

These results should be taken into account by suppliers of environmentally friendly products with consideration of sample characteristics. Inclusion of all possible ways of brand communication through social media, including brand communication performed by customers, led to the necessity of recruiting respondents who apart from buying these brands have also liked and shared content about them. Some future research could include participants fulfilling different requirements and can consider respondents willing to buy brands but facing some obstacles, respondents having experience with brand communication through social media, but without their own active participation in it, respondents following social media other than Facebook regarding these brands or even respondents experiencing contact with other determinants of brand equity but not communication through social media.

Even though there is space for additional widening of the research, the paper can be described as innovative from several aspects. Firstly, it is, according to the authors' knowledge, the first research study investigating the effect of different forms of brand

communication through social media on elements of brand equity in the case of environmentally friendly products. The research can be important not only for marketing strategy and tactics of suppliers of such brands, but for potential social promotion of green consumption as well. Secondly, the model itself is innovative. It is the first research taking into account all forms of brand communication through social media (coming from company, other brand customers and customer himself/herself) on elements of brand equity. Also, unlike some other previous research regarding social media influence on brand equity, loyalty is treated as a multidimensional construct, which is in accordance with up-to-date research on loyalty. Thirdly, research of environmentally friendly products on geographical area covered by the study is scarce and results of similar research can be important for increasing consumption of such products in the given area.

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