

CAN MARKETING COMMUNICATION PRIME YOU TO ACT ‘GREEN’?

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ABSTRACT: As popularity of eco-friendly products has increased over the past decade, brands utilize green advertising and position their products as green to appeal to the taste of environmentally conscious customers. Even though many customers are concerned about the state of environment, they are discouraged from purchasing eco-friendly products and engaging in other sustainable behaviors due to economic and social barriers. This research poses a question how marketing communication can capitalize on environmental concern to promote desired green behaviors by priming customers to think about their pro-environmental values and motivations to act green. To answer this question, we analyze over 1500 customer responses to marketing communications on social media. In this content analysis study we utilize logistic regression to discover which primers are the most effective at activating green behaviors. This research provides managerial implications helping marketing communicators employ effective primers that will generate desired customer behaviors.

1. INTRODUCTION

Green advertising refers to the inclusion of ‘the promotional messages that may appeal to the needs and desires of environmentally concerned consumers’ (Zinkhan & Carlson 1995, 1). Marketing products by using representations of environmentalism influences consumers and results in positive attitudes toward brand (Follows & Jobber 2000). Therefore, marketers use green appeals that aim at conveying the ‘greenness’ of their products. However, by focusing solely on the eco-friendly characteristics of their products, they ignore how they could capitalize on pro-environmental values. Priming customers to focus on their values and motivations during the decision-making process could be even more effective at promoting desired behaviors.

Previous research looked at potential barriers to sustainability and consumer motivations to act green (e.g. Auger et al. 2008; Bazarova et al. 2012; Bennett & Williams 2011; Brough et al. 2016; Kim & Choi 2005; Luchs et al. 2010; Pagiaslis & Krontalis 2014; White & Simpson 2013). Another research stream in the area of green marketing focuses on green marketing strategy (e.g. Mitchell et al. 2010; LeCren & Ozanne, 2011), and outcomes of green marketing (e.g. Lin et al. 2013; Papista & Krystallis, 2013; Richey et al. 2014). Among rich literature on green product, promotion, distribution and branding, the most relevant research stream here is that dealing with promotion (see Davis, 1993; Banerjee et al., 1995; Carlson et al., 1996; Haddock, 2005; Gallastegui, 2002; Grankvist et al., 2007; Gill et al., 2008; Blengini and Shields, 2010; Leonidou et al., 2011; Wong et al., 2014). This extant literature of green advertisements focused on advertising messages, their credibility as a response to general skepticism of green claims (Leonidou et al., 2014; Banerjee et al., 1995), and the use of communication tools including websites, sustainability reports, and eco-labels (Herzig and Godemann, 2010; Gill et al., 2008; Blengini and Shields, 2010; Chatterjee and Mir, 2008; Cerin, 2002; Blengini and Shields, 2010; Proto et al.,

2007) as a means of spreading awareness and knowledge of environmental issues (Kumar 2016).

While this research stream greatly increased our understanding of the effectiveness of green advertising, there is a need to investigate what kind of green appeals will be affective at driving behavioral changes. So far ‘little research has examined the effectiveness of green appeals in advertisements’ (Chang, Zhang, & Xie, 2015, p.158) with an exception of scarce papers on message framing (e.g. Chang, Zhang, & Xie, 2015; White, MacDonnell, & Dahl, 2011) or environmental claims (Luchs, Naylor, Irwin, & Raghunathan 2010; Zinkhan & Carlson 1995; Goldstein, Cialdini, and Griskevicius 2008). The research that focused on advertising content (see Leonidou et al., 2011, 2014; Easterling et al., 1996) focused on trend analysis and looked at changes in advertising content over the years. Previous promotion-related research differentiated between process- and product-oriented claims, image oriented vs. environmental fact-based claims, or the strength of the claim, as well as whether the claims appealed to rationality or emotions (Easterling et al., 1996; Leonidou et al. 2011; Leonidou et al. 2014).

The two discussed research streams on (1) consumer motivations and (2) advertising appeals evolved separately without consideration that pro-environmental values and motivations to buy green can be primed with the use of corresponding advertising appeals. Priming involves using subtle cues or primes which activate associated knowledge structures in our minds and influence our cognitive processes (Scaffidi Abbate, Boca, Spadaro, Romano 2014). These influences can be so strong as to be able to influence our behavior (Skandrani-Marzouki & Marzouki 2012). Priming has been shown to result in making commitments to volunteer or influence what we choose to eat (Nelson and Norton 2005; Webster, Chakrabarty & Kinard 2016). Moreover, motivational priming can induce a regulatory orientation or enhance the currently held regulatory convictions, and can thus lead to a change in behavior

(Förster, Higgins, & Taylor, 2003; Higgins, Shah, & Friedman, 1997; Sengupta & Zhou, 2007). Priming can both activate and inhibit behaviors (Dijksterhuis & van Knippenberg, 1996).

While previous research identified factors influencing the intentions to buy green, we still struggle with understanding the factors that could mitigate the ‘green gap’, i.e. ‘the distance between the stated importance of protecting the environment and the actual behavior’ (Tseng, 2016, 326). Current research provides evidence that our consumption is constructive and context-dependent (Scott, Nowlis, & Mandel 2009; Zhu, Billeter, & Inman 2012), suggesting that the purchase of green products can be manipulated through priming regardless of environmental orientation of the customer. This constructive view of green behavior led to calls for considering contextual factors (Tanner & Kast 2003) which can involve the presence of advertising appeals serving as primes, which unconsciously activate individual responses during purchasing process (Pena & Blackburn 2013).

For instance, we know that high cost (Auger et al. 2007; Pagiaslis & Krontalis 2014; White & Simpson 2013) and perceived low effectiveness of green products prevent customers from opting for environmentally friendly products (Luchs et al. 2010; White & Simpson 2013). However, current literature hardly asks a question if advertising content could minimize the effect of these negative perceptions and overcome them to drive a purchase, or behavioral change. Moreover, social stigma, marginalization, and feminization of pro-environmental behaviors were identified as key barriers to green behaviors (Bazarova et al. 2012; Bennett & Williams 2011; Brough et al. 2016). Existing research, however, does not provide an answer to a question whether positioning a specific pro-environmental behavior as socially desirable would counteract these prevalent attitudes and encourage green purchases. Previous research also investigated the degree of environmental concern and identified it as a driver to green purchasing intentions (Kim & Choi 2005). The question, however remains how (and if) this concern could be stimulated in a specific market situation. For instance, can marketing communication prime an individual to have higher environmental concern just before the purchase? On the other hand, several studies show that environmental concern or positive attitude toward environmentally friendly products does not guarantee green behavior (Bonnell 2015; Kumar, 2017; Tseng, 2016). Some argue that these concerns and altruistic values are only temporary in nature (Corbett 2005; Paladino 2005). Therefore, one could ask if priming environmental concern, just before the purchase, would bear at least short-term effects and result in green behavior. While previous research tries to link environmental concern to intentions to buy green (Schuitema & De Groot 2015; White, McDonnell and Ellard 2012), we still do not know if we can successfully prime that concern as we do in e.g. preventive health campaigns, and the research is not clear as to whether loss-framed or gain-framed message strategies are more effective (see Chang, Zhang, & Xie 2015).

While these contextual factors could influence the behavioral response, we lack a complete understanding of how marketing communication can capitalize on them (Tanner & Kast 2003), (e.g. environmental concern, perception of green behavior as socially desirable, feeling of moral obligation, internal locus of control etc.) to activate pro-environmental values that lead to green purchasing behaviors. As little

academic understanding has been developed in terms of the effectiveness of different green appeals in driving green behaviors (Chang, Zhang, & Xie, 2015), to address this void in the literature we propose and test a conceptual model of how different green appeals result in green behavior to discover whether implicit priming of environmental values and motivations to act green significantly generate behavior. This model is then empirically tested based on the quantitative content analysis of 1579 pro-environmental social media posts on Facebook and users’ behavioral responses to them.

The contribution of this paper is threefold. First, this research analyzes a finer classification of green advertising appeals employed by brands in social media. We differentiate between two environmental primers i.e. (1) loss- and (2) gain- framed content; ethical appeals, i.e. (3) norm activation and (4) internal locus of control activation, and personal utility appeals, i.e. economic value, i.e. (5) discount, (6) value for money; and other personal gain values, i.e. (7) functional value, (8) health value, social value, i.e. (9) status appeal and (10) peer pressure. This fine-grained classification allows us to discover the effectiveness of different message strategies as called for by Chang, Zhang, and Xie (2015). Second, this research shows that certain environmental values can be primed with appropriate use of marketing communication. Rather than focusing solely on the greenness of the product, we take into account consumers’ values and motivations. This allowed us to show that environmental concern and internal locus of control can be activated by advertising and that marketing communication can lead to (at least) temporary behavioral change, when it employs appropriate priming strategies. We thus contribute to the discussion of the role of contextual factors in green behavior. Third, rather than looking at intentions for behavior change, we look at action taken by customers and show that the use of primers that appeal to certain motivations and values, which are temporary in nature, can in fact mitigate the ‘green gap’ (see Tseng 2016).

2. HYPOTHESIS DEVELOPMENT

2.1. Environmental appeals

Environmental concern refers to ‘feelings that consumers have about many different green issues’ (Zimmer, Stafford, & Stafford, 1994, 64). Previous research linked environmental knowledge and pro-environmental attitudes to propensity to engage in green behaviors (Kumar, Manrai, & Manrai 2017; Thapa 2010; Meinhold & Maclus 2005). Consumers who are environmentally concerned are motivated by altruism rather than the personal benefit (Cleveland, Kalamas, & LaRoche 2012) and are oftentimes ready to pay premium for green products (Royne, Levy, & Martinez 2011). Therefore, protective feelings toward environment increase the sustainable consumption (Kilbourne & Pickett 2008).

2.1.1. *Message framing strategies in priming environmental concern: loss- and gain- framed messages*

As environmental knowledge and environmental concerns are very important, exposing customers to pro-environmental messages can encourage their green behavior (Chib et al. 2009; Paladino & Ng 2013). This kind of messages utilize either ‘gain-frame’ or ‘loss frame’ (message framing strategies). The former focuses on the benefits of undertaking

a specific behavior, and the latter places the emphasis on the negative consequences (Levin, Schneider, & Gaeth, 1998).

The existing literature shows that both message framing strategies can elicit behavior. Gain-framed messages were previously studied in the context of promoting health prevention (Detweiller et al. 1999; O'Keefe & Jensen 2007), as well as promoting behaviors where inaction is associated with a relatively low risk (Detweiller et al. 1999). Loss-framed messages were studied in the context of high risk and illness detection behaviors (Meyers-Levy & Maheswaran 2004). The stronger the perceived threat, the more willing people are to take action (Dunlap & Xaio 2007; Dagher & Itani 2014). Loss-framed messages were shown to motivate people with risk-avoidance orientation (Sherman, Updegraff, & Mann 2008) and highly-involved customers (Maheswaran & Chaiken, 1991). In the context of environmental messages, it was shown that both loss-framed and gain-framed content results in positive brand attitudes and positive attitudes toward green products, and purchase intentions (Chang, Zhang, & Xie 2015). Therefore, we propose that:

H1. The inclusion of environmental gain-framed message is positively related to green purchase behavior.

H2. The inclusion of environmental loss-framed message is positively related to green purchase behavior.

2.1.2. *Pro-environmental norm activation – 'you should' and 'you can do this'*

Socially conscious consumer is "a consumer who takes into account the public consequences of his or her private consumption or who attempts to use his or her purchasing power to bring about change" (Follows & Jobber 2000, 724). He or she also puts the interests of others and the society at large above one's own interests (Corbett 2005; Paladino 2005). Previous research shows that individuals engaging in pro-environmental behaviors are driven by altruistic motives (Clark, Ketchen, & Moore 2003; Corbett 2005). Altruism has been shown to be a predictor of energy conservation behaviors, using phosphate-free laundry detergents, or giving up on using styrofoam cups (Cleveland, Kalamas, & Laroche 2005).

According to Schwartz Norm Activation Model (Schwartz 1977), norm activated altruism takes place when "an individual is aware of negative consequences for others and is willing to ascribe the responsibility at a personal level for preventing those consequences" (Guagnano 1995, 64). When individuals are informed of their personal responsibility and their social consciousness is evoked, they feel obligated to act to prevent the potential harm as the lack of action would result in guilt. It has been shown that moral obligation (or norm activated altruism) and perceived environmental responsibility is a strong motivator of environmentally friendly behaviors including green purchases (Oyserman & Lee 2008; Tanner & Kast 2003).

Previous research also suggested that altruistic motivation is temporary in nature (Corbett 2005), for instance, being in a good mood has been suggested to promote altruistic pro-environmental behaviors (Corbett 2005; Paladino 2005), and thus could be stimulated or inhibited by contextual factors such as priming through marketing communications. Thus, we propose:

H1. The inclusion of norm activation message is positively related to green purchase behavior.

The expectation of success and feeling of confidence about what we are doing is a predictor of undertaking the behavior (Wigfield & Eccles, 2000; Ajzen, 1991). Individuals with high levels of internal environmental locus of control exhibit higher levels of environmental sensitivity (Bodur & Saligollu 2005). They are more likely to engage in green behaviors (Cleveland, Kalamas, & LaRoche 2012) including recycling (Shrum, Lowrey, & McCarty 1994; Cleveland, Kalamas, & Laroche 2012), purchasing ecologically packaged products (Schwepker & Cornwell 1991; Cleveland, Kalamas, & Laroche 2012), saving water and energy, and purchasing environmentally-friendly products (Cleveland, Kalamas, & Laroche 2012; Yadav & Pathak 2016; Ellen et al. 1991)). Internal locus of control is also positively related to agentic disposition (Guagnano 1995) and priming participants with the concept of 'superhero' can lead to making commitment to volunteer (Nelson and Norton 2005).

Similarly to norm-activated altruistic motivations, internal locus of control can be stimulated by contextual factors, "people with an internal locus of control may only need to be reminded that their behavior in the area of the environment will make a difference" (McCarty & Shrum, 2001, 101; Cleveland, Kalamas, & Laroche 2012). Therefore, we propose:

H1. The inclusion of internal-locus of control activation message is positively related to green purchase behavior.

2.2. Addressing 'green gap' through priming personal gain

Despite increasing environmental concerns, our everyday consumption decisions are "driven by convenience, habit, value for money, personal health concerns, hedonism" (Vemer & Verbke 2006). Studies suggest that environmental concern is often not enough to purchase green products as they are associated with higher costs and lower effectiveness (Cleveland, Kalamas, & LaRoche 2005; Moghadam 2005). Therefore, many customers are not ready to pay extra for environmentally-friendly products (Ishaswinni & Datta, 2011). Even high levels of environmental concern does not generate large changes in behavior when a price premium is required (Montgomery 1997). This leads to the green gap phenomenon i.e. a situation where environmental concerns do not translate into green behavior (Tseng, 2016).

Consumers consider the benefits and costs of their behavior (Chang et al. 2006). Green consumption is oftentimes seen as a sacrifice because consumer has to give something up, expend extra effort, time, risk, and energy or pay premium, thus even environmentally concerned individuals are often not willing to make an extra effort for the sake of the environment (Chen & Chang, 2012; Li & Cheng 2014; Monroe 2003; Tseng, 2016).

As people exhibit altruistic behaviors for self-serving purposes (Batson & Shaw 1991; Corbett 2005), the pursuit of self-interest and perceived added value of seemingly altruistic behaviors play an important role in purchase intentions (Batson & Shaw 1991; Corbett 2005; Koller et al. 2011; Chen & Chang, 2012; Schuitema & de Groot, 2015; Wu et al. 2011). Therefore, informing customers about the benefits to themselves from purchasing green products has been shown to drive their preferences and behavior (Han & Kim 2010; Han et al. 2011; Wu et al. 2011; Manaktola & Jauhari, 2007). Among the added values from using environmentally-friendly

products are utilitarian benefits (economic value, functional value, health benefits) and social benefits (Hartman & Apaolaza-Ibanez, 2012; Lin & Huang 2012; Tanner & Kast 2003).

2.2.1. *Addressing economic concerns through priming monetary gain*

Economic considerations oftentimes trump environmental concerns (Cleveland, Kalamas, & Laroche 2005). Green products are seen as more costly than their traditional alternatives (Ferraro, Uchida, & Conrad 2005). As price is one of the key factors considered when making purchase decisions (Benedetto et al. 2014; Rezaei et al. 2011), high prices of green products are a key barrier to eco-friendly purchases (Nasir & Karakaya, 2014; Wheeler et al. 2013; Barber et al. 2014; Boztepe 2012). Previous research suggests that price plays an important role in the 'green gap phenomenon', i.e. the situation when environmental concerns do not translate into desired behavior (Gleim & Lawson, 2014). Therefore, customers might be more willing to purchase green products when offered a discount (Tseng, 2016), as perceived monetary gain mitigates the perceived sacrifice (Kaheneman & Tversky, 1979; Tseng, 2016). The importance of the economic considerations is reflected in the research by Cleveland, Kalamas, and Laroche (2005), where economic motivation was the only significant predictor of buying organically-grown fruits and vegetables, diapers, or products packaged in recycled materials. To address economic considerations, customers can be either offered a discount to address the concerns of perceived higher pricing (Nasir & Karakaya, 2014; Wheeler et al. 2013; Barber et al. 2014; Boztepe 2012), or reassured of the value for their money to address the concerns of lower effectiveness and to show long-term savings (Cleveland, Kalamas, and Laroche 2005). Therefore, we propose:

H1. The inclusion of discount appeal is positively related to green purchase behavior.

H2. The inclusion of value-for money appeal is positively related to green purchase behavior.

2.2.2. *Functional value and effectiveness*

Environmentally friendly products are in general perceived as less effective than regular products (Lin & Chang 2012; Luchs et al. 2010; Griskevicius et al. 2010). The perceived risk negatively affects the intentions to buy green products (Anderson, Wachenheim, & Lesch 2006). This aversion is further magnified when customers have little knowledge of the product (Doods, Monroe, & Grwal 1991). The research suggests that customers often lack adequate knowledge to evaluate the quality of green products (Paladino 2005), and as such, they often assume products labeled as green are less effective.

Product effectiveness, its utility and functional value are important factors driving sustainable consumption and purchases of green products (Schwepker & Cornwell 1991; Lin & Huang 2012; Biswas & Roy 2015). Despite negative opinions of green products, their perceived effectiveness can be successfully boosted by a credible endorsement (Aaker, Vohs, & Mogilner 2010; Lin & Chang 2012; Luchs et al. 2010; Scott, Nowlis, & Mandel 2009). Therefore, we propose:

H1. The inclusion of effectiveness claims is positively related to green purchase behavior.

2.2.3. *Health appeals*

With the increased interest in how agriculture and other food-related processes affect the environment and our health, we witness growing awareness of the food origin and environmental footprint (Spiller 2012; Goggins & Rau 2016; Pulkkinen et al. 2016). People consider seasonality and produce freshness when making their purchasing decisions (Kuhn 2012; Sims 2010) and thus look for products labeled as eco-friendly. With more interest in healthier product options including organic and locally grown products, which are advertised as a more healthy alternative to other not eco-friendly products (Milter 2015), health motives were identified as one of the key factors motivating people to buy green (Tanner & Kast 2003; Kim & Choi 2005). While different religious and ethnic groups have long paid attention to how their food has been prepared (Bonne et al. 2007), health-conscious customers opt for options previously reserved for these specific groups as a guarantee of a healthier product (Price et al. 2016). Therefore, we propose:

H1. The inclusion of health appeal is positively related to green purchase behavior.

2.2.4. *Social value*

Social value positively affects green behaviors (Lin & Huang 2012). "Social value is perceived utility derived from alternative association with one or more specific social groups" (Sheth et al. 1991). Environmentally friendly products are considered to be more socially acceptable (Follows & Jobber 2000) and "the image of an environmentally friendly person could thus project a good image of oneself to others" (Lee 2008, p. 582). Therefore, green behaviors can improve customers image and make them seen as environmentally responsible consumers (Nyborg et al. 2006; Lee 2008; Dagher & Itani 2014) and increase their status in their reference group (Steg & Vlek 2009; Steg et al. 2011; Steg et al. 2014).

Therefore, activating a customer status-related motives through appropriate marketing communication increases their tendency to buy green products even when they perceived them as something that requires making a sacrifice (Griskevicius et al. 2010). Thus, we propose:

H1. The inclusion of status appeal is positively related to green purchase behavior.

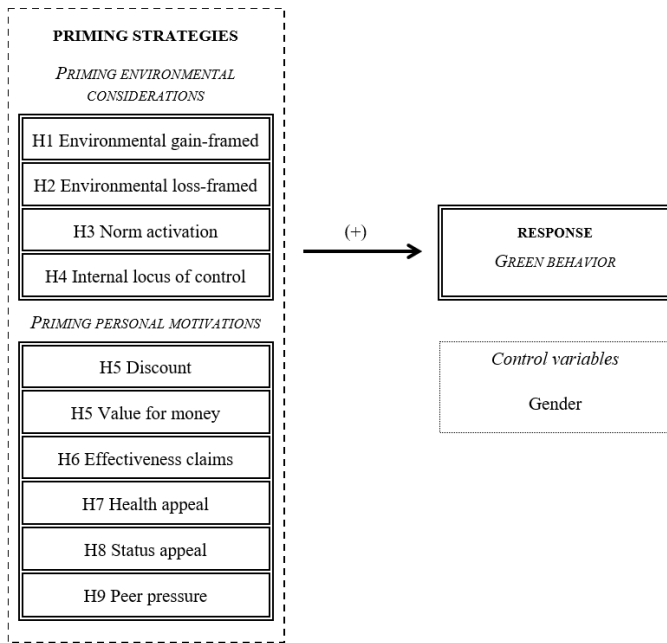
It has been long established that social pressure is a key driver of many consumer choices, including sustainable consumption (Biwas & Roy 2015).

Social norms influence intentions to take action (Lutz 1991) as they provide guidelines on what is appropriate or not appropriate behavior or action to be undertaken (Sexton & Sexton 2014). As these norms become internalized, they can facilitate purchasing of eco-friendly products (Jansson 2011; Prakash & Pathak 2017). Previous research revealed positive relationship between social influences and green behavior (Biswas, 2000; Cordano et al. 2010). Subjective norms, including those of peers and experts become internalized and lead to purchasing intentions and adoption of green behaviors (Chan 2001; Paladino & Ng 2013). Social pressure encourages intentions to buy green (Biswas & Roy 2015;

Zhao et al. 2014, Lorek & Fuchs 2013; Wang et al. 2014; Ritter et al. 2015), increases the predisposition for green behaviors, and acts as a moderator for other factors such as environmental knowledge (Sweeney et al. 2014). Thus, we propose:

H1. The inclusion of peer pressure appeal is positively related to green purchase behavior.

Figure 1. Research Model and Hypotheses



3. METHOD

Content analysis can be successfully used to study behavioral responses to marketing communication (Krippendorff 1980). An example of using content analysis in the context of behavioral responses to communication are studies by Chwialkowska (2017) and Swani, Brown, and Milne's (2014). To empirically test the hypotheses presented above, we conducted a quantitative content analysis of social media marketing communication and corresponding customer behavioral responses.

3.1. Sampling

To empirically test our hypotheses, we asked users who follow Facebook pages devoted to sustainability to participate in the study. We posted a survey link on fifty-seven Facebook pages. Pages were identified utilizing keywords "green", "organic", "sustainable", "bio", "natural", "environmental", "environmentally-friendly", "ecological", "eco".

Informants provided examples of the pro-environmental social media content they encountered on Facebook. They were also asked to (1) provide a link to Facebook post they have seen, or a screenshot of the content (for the content coding purposes), (2) indicate if the social media content evoked a behavioral reaction (purchasing the product advertised). To control for possible influence of levels of environmental internal locus of control, perceived environmental threat, and environmental concern, we asked 13 Likert scale questions. The questions were as follows (1) 6 item-scale of environmental internal locus of control (adapted from Ross, Ross, Short & Cataldo, 2015), (2) 4-item scale of perceived environmental threat (EXLBA scale: Cleveland, Kalamas, & Laroche 2005), and (3) 3-item scale of environmental concern (Corbett 2005).

The participation in the study was encouraged by partaking in the lottery where five participants could win an Amazon gift card of \$25. The survey was opened for a period of 31 days. We initially received 1847 responses, 149 were removed as they contained missing data, and in the next step 119 responses were removed as they were filled in from the same IP address. Our final sample consisted of responses provided by 1579 informants. The sample consisted of 47% women and 53% men. The median age of the respondent was 42.

3.2. Operationalization of variables

Data coding and analysis followed the procedure outlined by Neuendorf (2002). In content analysis research, the coding scheme (the operationalization of variables) is presented in the in the form of a codebook (Hoslti, 1969; Neuendorf, 2002). As recommended by Budd, Thorp, and Donohew (1967) and Neuendorf (2002) the data should be coded by two independent coders. To increase the inter-coder agreement, it is recommended (see Schutz 1958) to code variables on a dichotomous scale (see Schutz 1958). These strategies are widely accepted and have been employed in previous research in the field using content analysis (Chwialkowska 2018; de Vries et al., 2012; Swani et al., 2014) and logistic regression (Chwialkowska 2018; Swani et al., 2014). Thus, in this investigation, we employed two coders, and variables were coded as dummy variables: '1' if the priming strategy appeared in the specific post and '0' when it did not. The dependent variable for logistic regression model (behavioral response in the form of making a green purchase) was dummy coded. See table 1 for the summary of the constructs and measures.

Table 1. Constructs and Measures in Quantitative Content Analysis

Variable name	Construct	Coding	N
Independent variables			
Environmental Gain-Framed	Positively framed environmental messages that prime environmental concern by highlighting benefits of pursuing an action. (Chang, Zhang & Xie 2015)	Yes No	994 585
Environmental Loss-Framed	Negatively framed environmental messages that prime environmental concern by highlighting consequences of not pursuing an action. (Chang, Zhang & Xie 2015)	Yes No	729 850
Norm Activation	Environmental messages that ascribe the feeling of responsibility to evoke a sense of obligation to take action in the areas of environmental protection to prevent harm. (Guagnano 1995)	Yes No	106 1473
Internal Locus Activation	Messages that evoke the feeling of confidence and remind customers that their behavior in the area of the environment will make a difference. (Cleveland, et al., 2012)	Yes No	902 677
Discount	Messages announcing possibility of acquiring the product at a temporarily lower price that mention e.g. sales promotion, discount, coupon (Nasir & Karakaya, 2014)	Yes No	1005 574
Value for Money	Messages that reassure customers of the value for their money and emphasize long-term benefits and savings. (Cleveland, Kalamas, and Laroche 2005)	Yes No	73 1506
Effectiveness Claims	Messages endorsing the product for its utility and functional value e.g. mentions functionality-related information, product features and benefits. (Aaker et al. 2010)	Yes No	1302 277
Health Appeal	Messages depicting environmentally friendly product as a healthy alternative to other not eco-friendly products and emphasize health benefits. (Milter 2015)	Yes No	115 1464
Status Appeal	Messages depicting eco-friendly behaviors as socially desirable and something that enhances customers' good image and increases their status in their reference group (Steg et al. 2014)	Yes No	78 1501
Peer Pressure	Normative messages that depict eco-friendly behaviors as behavior endorsed, performed and/or expected by customers' peers. (Paladino & Ng 2013)	Yes No	333 1246
Gender (control variable)	Reported gender of the participant	Female Male	740 839
Dependent variables			
Green behavior	Reported action undertaken – purchase of green product	Yes No	414 1165

3.3. Coding procedure

To reduce the bias, and assure the validity of the study (Banerjee et al., 1999; Orne, 1975), the two coders were not informed of the purpose of the study. The coding procedure followed Neuendorf (2002). In the first phase, the codebook and the operationalization of each variable were explained and discussed with two independent coders. They were also given examples of content coded according to the coding scheme. In the next step, coders were asked to conduct pilot coding. Coders were given a sample of marketing communication provided by informants. They studied the codebook and coding form and conducted the pilot coding of sample posts. Next, the corresponding author answered their questions and clarified any points of disagreement. These measures were undertaken to ensure that both coders understand how different variables should be coded to prevent the differences in coding of the research data. (Budd, Thorp, and Donohew, 1967). In the next step, coders performed the coding process of the content provided by the informants.

3.4. Intercoder reliability

Cohen's Kappas for the comparison of the two coders had values between 85% for some items up to 92%. These levels of inter-coder agreement represent substantial strength of agreement, and sufficient inter-rater reliability (Landis and

Koch, 1997). Any disagreements were resolved through a discussion between the coders and the corresponding author.

4. RESULTS

4.1. Regression Models

To test our hypothesis, we run main effects binary logistic regression. We look at the relationship and importance of different content strategies and green purchase behavior. The independent variables represent 4 categories which represented the presence of (I) Environmental appeals priming customers environmental concerns: (1) loss-framed message, (2) gain-framed message; ethical appeals, i.e. (3) norm activation and (4) internal locus of control activation, (II) Appeals priming personal motivations to act green: (5) discount, (6) value for money, (7) effectiveness appeal, (8) health appeal, (9) status appeal, and (10) peer pressure. The dependent variable was purchase of advertised green product. Control variable (gender) was included as independent variables.

4.2. Descriptive statistics.

In table 2, we report descriptive statistics of content which resulted (or did not result) in green behavior as called for in the marketing communication. In total 1579 cases were analyzed. The data featured 26% of cases where consumers positively responded to primed behaviors and 74% of cases where they did not.

The percentages of the content that resulted in purchase behavior versus content that did not result in purchase were consistently higher among content that included internal locus of control (purchased = 82%), effectiveness claims (purchased = 71%), environmental gain-framed messages (purchased = 70%), environmental loss-framed content (purchased = 59%), and discount appeal (purchased = 54%).

On the other hand, the percentages of content that did not result in purchase behavior were higher for content that included value for money appeals (did not purchase = 87%), status appeal (did not purchase = 85%), norm activation (did not purchase = 79%), health appeal (did not purchase = 77%), and peer pressure (did not purchase = 67%).

Table 2. Characteristics of the Content That Resulted in Purchase and That Did Not

Content characteristics	N	% of posts	Purchased
Environmental gain-framed	994	63% ^a	70% ^b
Environmental loss-framed	729	46%	59%
Norm activation	106	7%	21%
Internal locus activation	902	57%	82%
Peer pressure	333	21%	33%
Discount	1005	64%	54%
Value for money	73	5%	13%
Effectiveness claims	1302	82%	71%
Health appeal	115	7%	23%
Status appeal	78	5%	15%
Total number of reports ¹	1579	-	26% ^c

^a Read as 63% of analyzed posts contained environmental loss-framed message.
^b Read as 70% of posts which resulted in green purchase behavior contained environmental loss-framed primer.
^c Read as 26% of analyzed posts resulted in purchase behavior.
¹ The proportions do not sum up to 100 % as some of the posts employed more than one message strategy.

None of the correlations between the exogenous variables exceeded 0.35 and thus are well below the recommended 0.7 level reducing the potential for multicollinearity issues in the regression analysis (Type-II error). Collinearity diagnostics were also performed and there were no tolerance values smaller than 0.20 (the smallest being 0.647) and all VIF values were well below the 10 cut off point (the greatest value 1.546) supporting the non-collinearity claim (Hair et al., 2009).

4.3. Model

The overall main effects model was statistically significant ($\chi^2 = 644.476$, $df = 11$, $p < 0.001$), indicating that the model was able to distinguish between cases when respondents reported purchasing the green product and when they did not

purchase it. Hosmer-Lemeshow (2000) Goodness of Fit Test is 12.511, ($p = 0.130$), with a significance level larger than 0.05, indicating support for the model (Hair, Black, Babin, and Anderson, 2009; Tabachnick, and Fidell, 2007). The Pseudo-R-square indicates that the model explained 0.335 (Cox and Snell R^2), or 0.490 (Nagelkerke R^2) of the variance. As Pseudo-R-square in logistic regression is only an indicative measure, logistic regression models are evaluated based on how well the model predicts the dependent variable compared to the accuracy of predicting it by chance alone (Hosmer-Lemeshow, 2000; Tabachnick, and Fidell, 2007). The model correctly classified content in 83.2%, sufficiently higher than the 0.50 threshold (Swani, Brown, & Milne 2014). The results are reported in table 3

Logistic Regression Results						
Message strategy	Estimate	Odds ratio	SE	WALD	Sig.	Hypotheses
Environmental gain-framed	.567	1.763	.168	11.373	.001	Supported
Environmental loss-framed	.203	1.225	.163	1.554	.213	Not supported
Norm activation	-2.590	.075	.313	68.545	.000	Not supported
Internal locus activation	1.968	7.154	.218	81.381	.000	Supported
Discount	-.264	.768	.155	2.889	.089	Not supported
Value for money	2.050	7.765	.320	41.107	.000	Supported
Effectiveness claims	.659	1.932	.190	11.966	.001	Supported
Health appeal	2.405	11.073	.335	51.390	.000	Supported
Status appeal	2.282	9.800	.415	30.269	.000	Supported
Peer pressure	.978	2.660	.176	31.043	.000	Supported
Gender (control)	.208	1.231	.171	1.486	.223	Not supported
Model fit	Pseudo $R^2 = 0.490$		$\chi^2 = 644.476$ $p < .01$		Predicted percent correct = 83.2%	

It was hypothesized that inclusion of environmental gain-framed appeal is positively related to purchase behavior,

which is reflected in the model ($\beta = 0.567$, $p < 0.01$), thus H1 is supported. Because the variable representing

environmental loss-framed appeal was not significant ($\beta = 0.203$, $p > 0.05$), H2 is not affirmed. We also cannot affirm H3, as the effect of including norm activation appeals was negative and significant, rather than positive ($\beta = -2.590$; $p < 0.01$). It was also hypothesized that inclusion of internal locus of control primer is positively related to purchase behavior, which is reflected in the model ($\beta = 1.968$, $p < 0.01$), thus H4 is supported. Similarly H5 is not supported as discount is not significantly related to purchase ($\beta = -0.264$, $p > 0.05$). In support of H6, value for money appeal is related to purchase, with a positive, significant variable ($\beta = 2.050$, $p < 0.01$). Similarly, we can also affirm H7, stating as the inclusion of effectiveness claims is positively related to purchase ($\beta = 0.659$, $p < 0.01$). Health appeal is also positively related to purchase behavior ($\beta = 2.405$, $p < 0.01$), thus supporting the hypothesis H8. In H9, it was predicted that inclusion of status appeal will be positively related to purchase behavior, which is reflected in the model ($\beta = 2.282$, $p < 0.01$), thus H9 is supported. In H10, it was predicted that inclusion of peer pressure primer will be positively related to purchase behavior, which is reflected in the model ($\beta = 0.978$, $p < 0.01$), thus H10 is supported. Control variable (gender) was not significant ($\beta = 0.208$; $p > 0.05$).

Internal locus of control primer was the strongest predictor purchase, recording the odds ratio of 81.381, followed by norm activation primer with odds ratio of 68.545 (negative influence), followed by health and value for money appeal with odds ratio of respectively 51.390 and 41.107. The content with Internal locus control primer was over 81 times more likely to be purchased controlling for all other factors in the model.

For respondents' Environmental Internal Locus of Control (adapted from Ross, Ross, Short & Cataldo, 2015), Cronbach alpha for 6 items was .785. For the measure Perceived Environmental Threat (Cleveland, Kalamas, & Laroche 2005), Cronbach alpha for 4 items was 0.772. For the 3 items representing Environmental Concern (Corbett 2005), Cronbach alpha was .901. Frequency of green behaviors did not differ based on the Environmental Internal Locus of Concern 1 ($\chi^2 = 0.384$, $df = 1$, $p > .05$), External Locus of Control ($\chi^2 = 1.120$, $df = 1$, $p > .05$), or Environmental Concern ($\chi^2 = 0.007$, $df = 1$, $p > .05$).

5. DISCUSSION

Previous research in the area of sustainability focused on consumer motives and values, but did not investigate how marketing communication can capitalize on them to promote desired green behaviors. As previous research focuses on green appeals conveying the 'greenness' of the company or product (e.g. Goldstein, Cialdini, and Griskevicius 2008; Luchs, Naylor, Irwin, & Raghunathan 2010; Leonidou et al., 2011, 2014), it ignored a wide variety of different message strategies, i.e., it did not consider that marketing communication can prime customers to focus on certain pro-environmental values during the decision-making process and it did not look at how marketing communication emphasizing personal benefits can prime customers to focus on motivations to buy green and influence their behaviors. This led to calls for studying the role of contextual factors in green purchase behaviors, and for examining the effectiveness of green appeals, as well as, ways of mitigating the 'green gap' (Chang, Zhang, & Xie 2015; Kumar 2016; Tanner & Kast 2003; Tseng 2016). Therefore, the purpose of this research was to discover whether the implicit priming of a consumer's pro-environmental values or motivations to buy green

generates desired green behavior. We differentiate between two environmental appeals i.e. loss- and gain- framed content, ethical appeals, i.e. norm activation and internal locus of control activation, and personal utility appeals, i.e. economic value, functional value, health value, social value, and show the effectiveness of different message strategies.

We show that priming pro-environmental values can lead to green behavior even among individuals with low scores of environmental concern, environmental knowledge, and internal locus of control. However, the results vary depending on what kind of primer is used. While respondents reacted positively to environmental gain-framed primer and internal locus control primer (supporting H1 and H4), the effects of environmental loss-framed primer were insignificant (H2 not supported), and inclusion of norm activation primer had significant negative effects (H3 not supported).

Previous research on message framing shows that gain-framed appeals are effective drivers of low risk behaviors ((Detweiller et al. 1999; O'Keefe & Jensen 2007), whereas loss-framed strategies are effective when studied behaviors are associated with high risk and illness-detection (i.e. matters of personal rather than global importance) (Meyers-Levy & Maheswaran 2004; Dunlap & Xaio 2007; Dagher & Itani 2014). This might explain the differences in results concerning the two message framing strategies as environmental risks are oftentimes considered as something far ahead in the future rather than an immediate threat and people tend to underestimate future losses and overestimate present gains (or their probability) (Chang, Zhang & Xie 2015) and no immediate negative consequences to oneself are expected.

Considering the differences in results concerning priming responsibility and the feeling of obligation (norm activation) and priming internal locus of control, people might not appreciate being told what to do or what is expected of them. Marketing communication is usually associated with telling us that we 'deserve something', or are 'worthy of buying something', or 'can do it'. Therefore, as the norm activation primers evoke the feelings of responsibility and guilt, people have tendency to block and reject this kind of communication, which can explain the significant negative effects on the desired behavior.

In regards to priming customer motivations to buy green, which involve appealing to perceived personal benefits, all but one appeal were significantly related to desired behavior. Value for money, product effectiveness, health, status, and peer pressure appeals were strong predictors (confirming H5, and H7-10).

As suggested by Tseng (2016), previous research ignored the role of price discounts in the effectiveness of green marketing. Previous studies focused on perceived consumer sacrifice related to green consumption (Ishaswinni & Datta, 2011; Lin et al. 2013; Chang 2013; Monroe 2003; Tseng, 2016), but did not provide the answers how to mitigate this negative perception. As our study shows, economic value appeal was one of the strongest predictors of purchase.

Interestingly, while the effects of value for money appeal were significant, discount appeal was not (H6 not supported), showing that providing discount was not enough to entice customers to purchase environmentally friendly product. This could be explained by that green products are considered more expensive and even if after the discount their cost is comparable to other not-environmentally friendly

alternatives, they are still considered less effective (Cleveland, Kalamas, & LaRoche 2005; Moghadam 2005) . Therefore, in the eyes of the customer, this does not lead to savings. On the other hand, priming value for money reinforces the feeling of personal gain and motives e.g. in the form of long-term savings.

Since the control variable gender was not significant in the logistic regression model, despite the green-female stereotype (Bennett & Williams 2011), this research results suggest that pro-environmental values and motivations to buy green can be universally primed.

5.1. Research implications

Therefore, the contribution of this paper is threefold. First, this research analyzes a finer classification of green advertising appeals employed by brands in social media. As previous research was inconsistent in terms of whether the environmental concerns and claims translate into green behavior (Keesling & Kaynama 2003; Montgomery 1997).

We differentiated between four environmental appeals and six appeals priming customer motives to buy green. In the former group we differentiated between gain-framed and loss-framed messages. This approach proved valuable as the two message framing strategies provided different results shedding more light on what kind of environmental appeals are effective.

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Second, this research shows that certain environmental values can be primed with appropriate use of marketing communication. Previous research showed that environmental concern or internal locus of control do not necessarily lead to green behavior (Bonnell 2015; Cleveland, Kalamas and Laroche 2012) because altruistic motivation is temporary in nature and our tendency to act in support of others or environment is highly dependent on contextual factors (Corbett 2005; Paladino 2005). We show that environmental concern and internal locus of control can be activated by marketing communication and lead to at least temporary behavioral change, and that to generate a one-time behavior change it is enough to evoke the pro-environmental values with the use of primers. Similarly, as this study shows that customer motivations to act green (personal gains) can be activated with relevant primers.

Third, rather than looking at intentions for behavior change, we look at action taken. We show short-term effects on one time green purchase or preservation behavior and what types of primers used in marketing communication can mitigate this change. Even though, ideally the environmental values would persist at guiding our behaviors with continuous effect, this research reveals they can be activated in a specific market situation to drive desired behavior.

5.1.1. Limitations and future research

We study one-time purchase and measure initial reaction to marketing communication. A longitudinal study could focus on how marketing communication can create long-lasting behavioral change.

We studied marketing communication on social media on pages dedicated to broadly-defined environmental issues. That means that our sample already had some degree of interest in environmental issues. Future research should investigate whether the priming effects of marketing communication will hold for a more representative sample.

Moreover, while in our research only the effects of environmental gain-framed messages were significant, cultural orientation such as long- vs. short-term orientation (Hofstede 2001) could potentially mediate the effect of loss- vs. gain-framed messages.

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