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The Social Control Exerted by Advertising: A Study on the Perception of *Greenwashing* in Green Products at Retail

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Authors' contributions

This research was conducted in collaboration among the three authors. Author CMC performed the analysis of the concepts presented and the conclusion. Authors SSBJ and DS applied and performed the statistical analysis of the proposed model. All authors read and approved the final manuscript.

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ABSTRACT

Aims: The aim of this study was to investigate the influence of the perception of *greenwashing* in the beliefs, attitudes and the perceived benefits by consumers to green products at retail facing the social control exerted by advertising.
Study Design: For the verification of the proposed objective, an exploratory research was conducted within a quantitative nature through a *survey*.
Place and Duration of Study: State of Sao Paulo, Brazil, between November 2015 and February 2016.
Methodology: The study had a sample of 359 valid respondents of the State of São Paulo / SP. The sample is composed of 73% women and 27% men, whose family allowance was $ 1,250

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(26.6%) and US$ 625-940 (24.7%), and 75% of these consumers go to the supermarket at least once a week. For the data analysis, the *Structural Equation Modeling* (SEM) was applied through the software SMARTPLS 2.0-M3.

Results: It was observed that the *greenwashing* tends to cause confusion in the perception of green consumption, and when the consumer perceives the existence of *greenwashing*, it reacts negatively in relation to the beliefs, attitudes and perceived benefits for green products, and no longer believes in the product and in the credibility of the company.

Conclusion: One of the problems arising from the *greenwashing* is the impact on the companies that operate ethically in the market. For the consumers, it is difficult to identify the difference between products that answer the needs of environmental sustainability. And despite the strong pressure from the media and advertising, when the consumer realizes that in the product there are characteristics of *greenwashing*, it rejects the product or the brand that calls itself green and is not.

Keywords: Greenwashing; consumer behavior; advertising; beliefs; attitudes; perceived benefits.

1. INTRODUCTION

The media is the instrument responsible for the formation and consolidation of perceptions that each individual has of himself and of society as a whole. And with the constant concern and the demands of society on issues related to the environment, organizations began to adopt green marketing strategies for their products and services.

Advertising has an important role in this regard, because it is able to influence people's behavior. The mass means of communication are instruments that form the opinion of the community, as well as influencers of human behavior, and show up today, as mechanisms of social control [1]. Social communication was already deeply connected to social control systems in progress over the centuries XIX, XX and XXI [2].

The quality of information communicated by advertising is essential for the survival of the organization and should be treated as a product that needs to be defined, measured, analyzed and improved constantly to meet the needs of consumers [3]. Regarding the communication is the last step in the process of implementing sustainable practices [4].

There are the strategic actions that are actions aimed to success and seek to generate a deliberated effect on the receiver, caused through act or omission calculated, without considering the other's perspective [5]. The strategic action always has as a horizon the individual interests which aim to achieve success and power. In analysis it can be divided into two parts: the obvious and the latent, in the communication the latent strategic vision makes use of handling mechanisms and/or systematically distorted communication [6].

These mechanisms are often used in the contemporaneous society, particularly in regard to this market and the major media. It is observed that the maintenance of high demands is performed through the dissemination of advertisements that encourage the creation of human needs and desires. In this sector the press has a crucial role that is the media as social control vehicle and imposition of customs [7].

It was from 1990 that the market began the postmodern transition and was guided decisively to the immaterial values, emerging a concerned consumer with environmental issues [8]. Thus, there was an increase in products promoted as green, where organizations started to promote the value, or even themselves as being green to attract the environmentally segment that is growing.

The entrepreneurs observing the strengthening of business attitude directed to the social environmental responsibility began to look for ways to satisfy the new demands of their consumers. One such tool is the green marketing. Green marketing has come to incorporate ethical and environmental values in organizations through the generation and dissemination of new products and services [9].

However, despite the growing environmental concerns of society, and interest in green products, the actual purchase rate is low [10]. This is due to the fact that some companies marketed their green products through misleading green claims and exaggerated the

environmental performance of its green products / services [11].

Companies in order to attract green public often use claims that sound environmentally friendly but actually are vague, and sometimes may be false. As a result, the term *"greenwashing"* has become commonplace in the market, which is the dissemination of false or incomplete information by an organization to present an environmentally responsible public image [12].

The *greenwashing* emerged from the 1980s and gained wide recognition to describe the practice of unfair or exaggerated claims of sustainability or respect for the environment in an effort to gain market leadership [13].

One of the problems resulting from such advertising is that companies and corporations that operate ethically in the market, are eventually mistaken for companies that practice *greenwashing*, because for those who consume, it is difficult to tell the difference between a product that responds to requisites of environmental sustainability from the one that does not match due to a multitude of false and hidden information, creating confusion for those who consume [14].

Within this context, this article had as issue the following question: "What is the influence of *greenwashing* in the perception of beliefs, attitudes and perceived benefits by consumers to green products at retail?" Thus, the objective of the research was to investigate the influence of the perception of *greenwashing* in the beliefs, attitudes and perceived benefits by consumers to green products at retail.

Therefore, an exploratory research of quantitative nature was conducted through a survey with a sample of 359 respondents from São Paulo/ Brazil. As a result it was observed that the *greenwashing* confuses the consumer, and brings a negative relationship between their beliefs, attitudes and perceived benefits, not validating the hypothesis pointed.

2. MATERIALS AND METHODS

For the verification of the objective proposed by this work, an exploratory research of quantitative nature was conducted through a survey with a sample of 359 respondents from São Paulo/ Brazil. Regarding the justification of the method used, the exploratory research, with a non-probabilistic convenience sampling and with a quantitative nature, is characterized by a field approach seeking the situational characteristics presented by the interviewees to generate quantitative measures of the attributes observed by these [15].

Of the 359 respondents, 73% were female and 27% were male, with a monthly income (individual) of $ 1,250 (26.6%) and US $ 625-940 (24.7%). 63.7% are single and do not reside with their parents and 36.3% are married with up to two children. Only were interviewed the consumers who make purchases at least once every two weeks, 75% of the respondents hold weekly purchases and 25% fortnightly, in supermarkets. For data collection was used a specialized company in market research and thus were collected data from real consumers of São Paulo State. One limitation of the research was the fact that it did not filter on the frequency of purchase of green products.

It was applied the G Power 3.1.7 *software* for the data collected, following the specifications of Cohen (1988) [16], in which was necessary to obtain an average effect of 0.15 and a power test of 0.80 for the scale used in the survey with 33 items. A sample of at least 68 respondents would be sufficient to detect the desired effect from the modeling of structural equations with the partial least squares method (PLS). However, a sample of 359 consumers brings a greater consistency to the inferences shown in the data analyzes.

The current research was not intended to generalize the results, but to investigate the cause and effect between *greenwashing*, confusion of green consumption, perceived benefits, attitude and beliefs of green products, as presented in the proposed model of Fig. 1. These factors demonstrate that *greenwashing* may play a crucial aspect that deserves a possible lack of consumer confidence about the practices and green products available on the market, mainly at retail.

Under this approach, the considered hypotheses for the research are pointed below:

H1: There is a negative relation among the perception of *greenwashing* and the manifestation of beliefs for green products.

H2: There is a positive relation among the perception of *greenwashing* and the manifestation of confusion of green products.

H3: There is a negative relation among the perception of *greenwashing* and the manifestation of the attitudes for green products.

H4: There is a negative relation among the perception of *greenwashing* and the manifestation of the perceived benefits for green products.

Considering the objective of this work, and following the recommendations of DeVellis [17] for evaluation and testing of the scale shown in Table 1, the scale used was assessed and validated by five experts of marketing and environment area. They received the scale to classify the statements within the constructs used in the study along with the concepts of each construct [18].

In the application a Likert scale with seven points of agreement/disagreement was used, where 1 (one) meant the total disagreement and 5 (five), total agreement. Regarding the categorical variables of the survey, the variables were, gender, age, family income, marital status and purchase frequency (which were considered for the survey people who do grocery shopping weekly or fortnightly).

The software SPSS 22.0 analyzed data frequency tests and was used LISREL 8.80 for the adherence test for multivariate normal distribution. Tests were used with a significance level of 0.05.

The structural equation modeling (SEM) evaluated the model _ consistency with Smart PLS 2.0- M3 for a better analysis of data that were non-adherent to a multivariate normal distribution and with another complex model [19].

The models to measure for SEM are those that do not require multivariate normality. The Weighted Least Square (DWLS), weighted least squares (WLS) and PLS-PM were three models specially considered in research [20,21]. The first two require more extensive samples, while the latter is further assimilated for analyzing data into smaller samples, such as in the current study. The PK Mardia's test was significant ($p < 0.05$) and indicated that the data cannot be described by a multivariate normal distribution.

The PLS-PM was the alternative adopted by international researchers in various fields of knowledge [19] which allowed a greater "plasticity" in the data analysis.

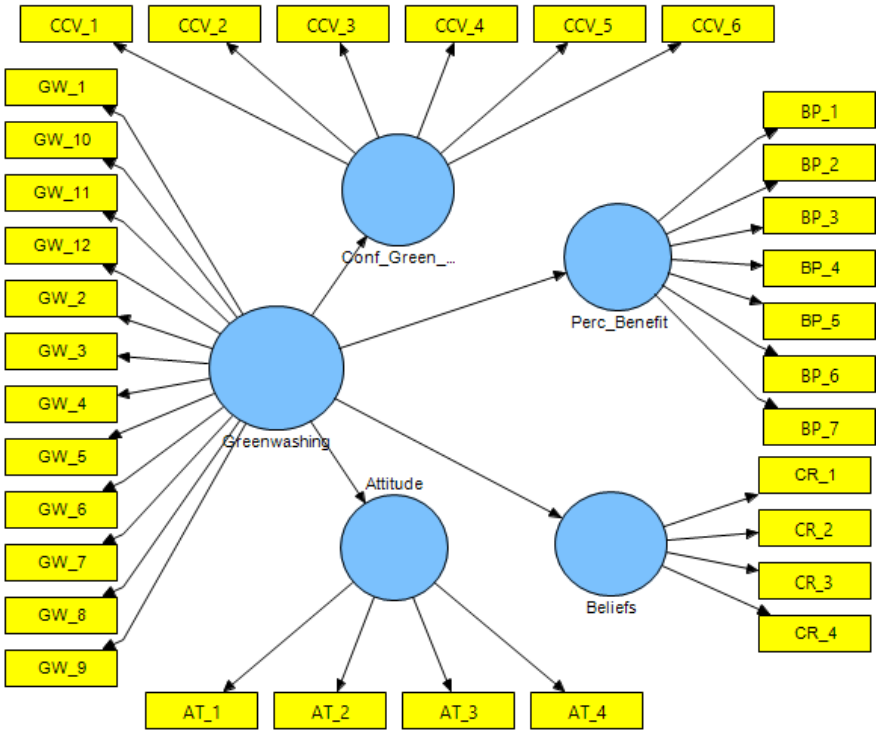

Fig. 1. Proposed model

Table 1. Survey schedule

Construct	Lab	Items
Greenwashing	GW_1	I'm sure that green products, mostly mislead the consumer
Greenwashing	GW_2	I'm sure that green products, mostly, are only green on the labels
Greenwashing	GW_3	I always note that the information that a product is green are always vague
Greenwashing	GW_4	I always note that the information that a product is green does not allow them to be proven
Greenwashing	GW_5	Green product manufacturers always exaggerate the characteristics (green) of their products
Greenwashing	GW_6	The vast majority of green products "dissemble" their true characteristics for appearing to be greener than they really are
Greenwashing	GW_7	The vast majority of green products do not present important information to be greener than they really are
Greenwashing	GW_8	Advertising of green products always lie
Greenwashing	GW_9	Green companies are those real ethics
Greenwashing	GW_10	I'm sure that green products are green just in advertising
Greenwashing	GW_11	There is no green Product in fact, only those that improve a few environmental practices
Greenwashing	GW_12	The websites of companies overstate the green features of their products
Confusion Green Consumption	CCV_1	There is a great similarity in a lot of products, it is very difficult to know which one is really green
Confusion Green Consumption	CCV_2	It is very difficult to recognize the differences between this product and other products with regard to environmental resources
Confusion Green Consumption	CCV_3	Due the fact that have a lot of products on the market is always difficult to recognize the differences about the green features
Confusion Green Consumption	CCV_4	There are so many products that it is difficult to decide on the purchase on the regard the proper use of environmental resources
Confusion Green Consumption	CCV_5	Always when I buy a product I do not feel sufficiently informed about the environmental resources
Confusion Green Consumption	CCV_6	Always when I buy a product I suspect its green features
Perceived Benefits	BP_1	Green products are always more reliable
Perceived Benefits	BP_2	Green products have always better quality
Perceived Benefits	BP_3	For me the consumption of green products is essential
Perceived Benefits	BP_4	Green products are cheaper
Perceived Benefits	BP_5	Green products are more durable
Perceived Benefits	BP_6	Green products are healthier
Perceived Benefits	BP_7	Green products always bring a better quality of life
Attitude	At_1	Green consumption practice is feasible for all
Attitude	At_2	Green consumption practice is very important for people
Attitude	At_3	Green consumption practice is fundamentally important
Attitude	At_4	The practice of green consumption preserves the future
Beliefs	Cr_1	My family believe that I should practice green consumption
Beliefs	Cr_2	My friends believe that I should practice green consumption
Beliefs	Cr_3	I value the opinion and feeling of my family for my green consumption
Beliefs	Cr_4	I value the opinion and the feeling of my friends for my green consumption

3. RESULTS AND DISCUSSION

Smart PLS 2.0 M3 was used to analyze data. The model was tested with all the items of the scale and adjusted to remove items without factorial load above 0.50 [20] and those that harm the adjustment model and its statistical validity.

The averages, standard deviations and coefficients of variance of the answers given by the respondents of the samples were collected for the discarded items. The very low genetic variability has been reported the majority provided a constant response or disagreement within the same item without giving a possible variability of the analysis.

The R^2 evaluates the variables that explain the constructs and indicate the quality of the fitted model. Rates of 0.75, 0.50 and 0.25, respectively, are considered significant, moderate and weak. [20] In the case of the average of the variance extracted (AVE), the rates must be greater than 0.50 for convergence models [21]. The Cronbach alpha (internal consistency) and compost reliability are used to assess whether the sample is free of prejudice or if the answers as a whole are trustworthy.

The communality (F^2) evaluates how the construct is "useful" for the model fit. Rates of 0.02, 0.15 and 0.35, respectively, are considered small, medium and large, while redundancy (Q^2) evaluates the accuracy of the adjusted model. The evaluation criteria must be greater than zero [20].

With the adjustments made, Table 2 shows the AVEs, the composite reliability, R^2, Cronbach Alpha, the communality (F^2) and redundancy (Q^2).

Using the criteria of Fornell and Larcker (1981) [22], the discriminant validity was performed through which the square roots AVE rates of each construction were compared with Pearson correlations between constructs (or latent variables). The AVE's square roots should be higher than the correlations of buildings. The discriminant validity indicates the extent to which constructions or latent variables are independent of each other [20], as Table 3 shows.

Since the model adjustment quality is confirmed, inferences about path coefficients and p-values of each relationship, removed from Fig. 2, could be made. Once the model is adjusted the rates may be employed to evaluate the hypothesis of search, as in Table 4.

The hypothesis considered unconfirmed are thus classified by a way of negative coefficient and provide a p-value in this casual relation with the significant model at the level of 10% instead of 5%. This situation means that a causal relationship exists, not of influence but rather of effect, ie when the *greenwashing* is perceived, the consumer stops to believe, to have a positive attitude and to realize the benefits of green product. This reinforces the assertion that a *greenwashing* practice causes the consumer rejection of a product or brand that calls itself green and is not.

In the tested model, it was also analyzed whether the *greenwashing* causes confusion in green consumption. This relationship was confirmed and demonstrated that the influence is strong (0.6346) and significant (p = 0.028).

Comparing the results of this research with the research of Braga Junior et al. [18] and research [23] which tested the influence of *greenwashing* and confusion in the green consumption within the consumer confidence in green products in Brazil, consumers have shown that *greenwashing* really has a negative effect on the image of the product and the company towards the consumer.

Table 2. Quality criteria of adjustments of Model without Moderation – Specification of SEM – Rates of Average Variance Extracted (AVE), composite reliability, R^2 and Cronbach´s Alpha, communalities, redundancy

	AVE	Composite reliability	R square	Cronbachs alpha	Communality	Redundancy
Attitude	0.604	0.856	0.005	0.807	0.271	-0.005
Beliefs	0.687	0.864	0.001	0.864	0.008	-0.011
Confusion	0.591	0.896	0.402	0.861	0.426	0.220
Greenwashing	0.537	0.927		0.913	0.438	0.439
Perceived benefits	0.650	0.902	0.007	0.885	0.423	-0.005
Reference values [19]	**>0.50**	**>0.70**	**0.02 small, 0.13 medium and 0.26 big**	**>0.60**	**Positive**	**Note 1**

Note 1: Rates 0.02, 0.15 and 0.35 are respectively considered small, medium and big

Table 3. Comparison of AVE square roots (black on the main diagonal) and the correlation between constructs

	Attitude	Beliefs	Confusion	Greenwashing	Perceived benefits
Attitude	**0.777**				
Beliefs	0.392	**0.829**			
Confusion	0.064	0.011	**0.769**		
Greenwashing	-0.071	0.030	0.634	**0.733**	
Perceived benefits	0.597	0.402	0.056	-0.087	**0.806**

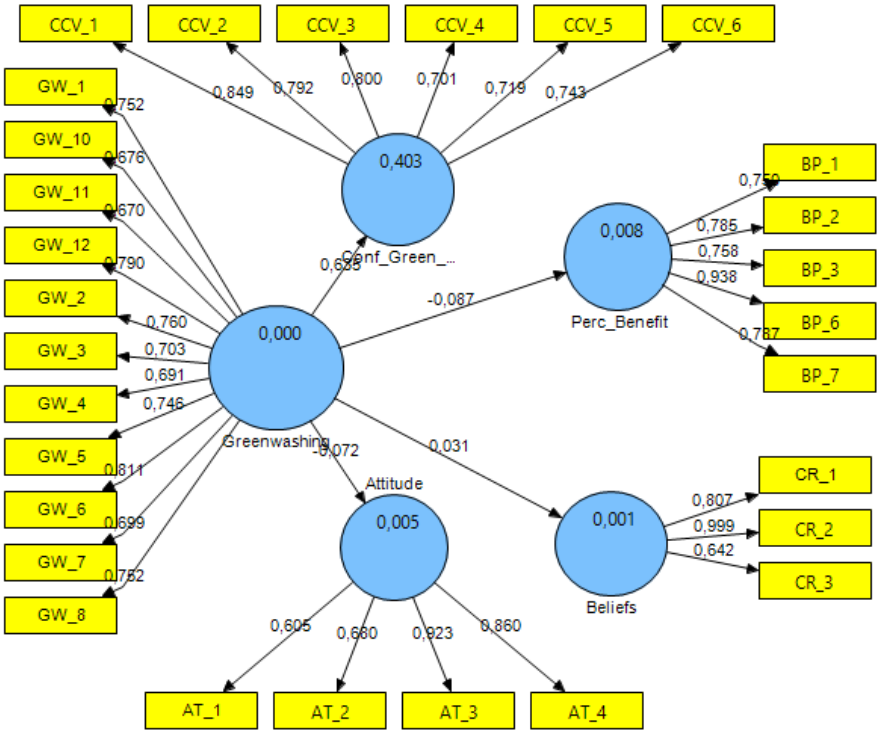

Fig. 2. Model adjusted in research

Note: All structural coefficients were significant (p<0.05). Significance was estimated by bootstrap method with N=600 and 1000 replications [19]

Table 4. Evaluation of hypotheses in current research

	Path coefficients (*β*)	p-value	Conclusion
Greenwashing => Attitude	-0.0718	0.078122	Not confirmed
Greenwashing => Beliefs	0.0306	0.070794	Not confirmed
Greenwashing => Conf_Green_Cons	0.6346	0.028058	Confirmed
Greenwashing => Perc_Benefit	-0.0872	0.087928	Not confirmed
Reference values	**Positive**	**<0,05**	

In the present study this statement becomes more evident when the causal relations of *greenwashing* with attitude, beliefs and perceived benefits become weak (-0.0718, 0.0306, -0.0872, respectively) and not significant at the level of p-value < 0.05.

Thus, it can be said that if the greenwashing is perceived, the consumer stops to believe in the product and in the company, it no longer realizes the benefits of consuming the product and ceases to have positive attitude, for example, of indicate the product to friends and family.

Another point that deserves discussion is the fact of the matter GW_9 (Green companies are those real ethics) do not stay in the model. Observing the responses by the average and standard deviation, it is observed that the consumers who responded to the survey understand that green companies are ethical. This may be the "reliable link" from the consumer towards the green product, which in case of disruption, other aspects become reinforced.

4. CONCLUSION

Taking into account the theories in relation to the mass communication media it is clear the consumer's role as a structural part of the mechanisms of social control of large media. At the same time, that since the 1960s had the increase of society's demands with issues related to the environment. Thus organizations began to spread in the media the green marketing strategies to influence the purchase decision of the population. However, the number of consumers who actually buy green products is low, resulting in a lack of confidence green and confusion that greenwashing causes in the consumers.

One of the problems resulting from this type of advertising is that companies that operate in the ethically market, are eventually mistaken with companies practitioners of *greenwashing*, because to those who consume, it is difficult to tell the difference between the product that responds as the requirements of environmental sustainability and identify these characteristics at retail.

Considering the objective of the research, it can be said that despite the strong pressure from the media and of the advertising appeal when the consumer realizes that there is in the product or service characteristics of *greenwashing*, the consumer reacts negatively regarding the beliefs, attitudes and perception of benefit. That is, the practice of *greenwashing* causes confusion in the consumer's purchasing decision, and this causes the rejection of a product or brand that calls itself green and is not.

A counterpoint to be reflected may be the possibility that the consumers are more concerned about the future of the society and the products that are offered making companies start to worry more about investments and disclosure of their actual actions.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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