UNIVERSIDADE FEDERAL RURAL DE PERNAMBUCO

PRÓ-REITORIA DE PESQUISA E PÓS-GRADUAÇÃO

PROGRAMA DE PÓS-GRADUAÇÃO EM ADMINISTRAÇÃO E DESENVOLVIMENTO RURAL

GREENWASHING ACCUSATION SCORE: A MEASUREMENT PROCEDURE

SEBASTIÃO VIEIRA DE FREITAS NETTO

RECIFE, JULHO/2019

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Dissertação submetida ao Programa de Pós-Graduação em Administração e Desenvolvimento Rural como exigência parcial à obtenção do título de Mestre em Administração.

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PARECER DA COMISSÃO EXAMINADORA DE DEFESA DE DISSERTAÇÃO DE MESTRADO ACADÊMICO DE

SEBASTIÃO VIEIRA DE FREITAS NETTO

GREENWASHING ACCUSATION SCORE: A MEASUREMENT PROCEDURE

A comissão examinadora, composta pelos professores abaixo, sob a presidência do primeiro, considera o candidato **SEBASTIÃO VIEIRA DE FREITAS NETTO**

Orientador:

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RESUMO

Os problemas ambientais são uma das principais preocupações dos *stakeholders* e da Sociedade como um todo. O problema está se agravando e os consumidores passaram a valorizar produtos eco-inovadores que possuem menor impacto ambiental. Perante esta demanda, as organizações em volta do mundo passaram a desenvolver produtos verdes e aplicar estratégias de marketing verde para ganhar competitividade e diferenciação. Entretanto, muitas empresas realizam de forma intencional, ou não, o *greenwashing*, que induz o consumidor a perceber uma maior performance social e/ou ambiental de um produto/serviço e/ou empresa, que pode influenciar suas decisões. Diante deste contexto, o objetivo geral desta pesquisa é analisar o fenômeno do *greenwashing* através de um modelo, proposto para medir o fenômeno em organizações. Os objetivos específicos da pesquisa são: identificar definições e conceitos relacionados ao fenômeno do *greenwashing*; identificar características e tipologias relacionadas ao fenômeno do *greenwashing*; propor um modelo para mensurar o fenômeno do *greenwashing*; e, aplicar o modelo em organizações e avaliar seus resultados. A pesquisa possui uma caracterização exploratória e prescritiva, através de uma abordagem quantitativa. Aplicando uma revisão sistemática da literatura foram identificadas as principais dimensões e tipologias do *greenwashing*, que foram utilizadas para o desenvolvimento do modelo chamado de *Greenwashing Accusation Score*. As dimensões foram chamadas de *firm-level claim, firm-level executional, product-level claim* e *product-level executional* e um *framework* foi elaborado. A ferramenta proposta foi aplicada em duas empresas multinacionais onde foram destacadas as dimensões de análise que obtiveram maior pontuação, *firm-level executional* e *product-level greenwashing.* O que pode indicar uma maior aplicação de elementos chamados *executionals* ao invés de *firm-level* e *product-level claim*. O trabalho possui como limitação um processo decisório individual, como sugestão para trabalhos futuros o modelo pode ser aplicado por um comitê de especialistas por segmento.

Palavras-chave: Marketing Verde, *Greenwashing,* Modelo Aditivo

ABSTRACT

Environmental issues are a major concern of stakeholders and of the Society as a whole. The problem is getting worse and consumers have come to value eco-innovative products that have less environmental impact. Faced with this demand, organizations around the world began to develop green products and apply green marketing strategies to gain competitiveness and differentiation. However, many companies intentionally or not, perform greenwashing, which misleads consumers to perceive higher social and/or environmental performance of a product/service and/or company, which may influence their decisions. Given this context, the general objective of this research is to analyze the phenomenon of greenwashing through a model, proposed to measure the phenomenon in organizations. The specific objectives of the research are: to identify definitions and concepts related to the phenomenon of greenwashing; identify characteristics and typologies related to the phenomenon of greenwashing; propose a model to measure the phenomenon of greenwashing; and apply the model to organizations and evaluate their results. The research has an exploratory and prescriptive characterization, through a quantitative approach. Applying a systematic literature review we identified the main dimensions and typologies of greenwashing, which were used for the development of the model called Greenwashing Accusation Score. The dimensions were called firm-level claim, firm-level executional, product-level claim and product-level executional, and a framework was developed. The proposed tool was applied in two multinational companies where the dimensions of analysis that obtained the highest score, firm-level executive and product-level greenwashing were highlighted. Which may indicate a greater application of elements called executionals rather than firm-level and product-level claim. The work has as limitation an single-person decision process, as a suggestion for future work, the model can be applied by a committee of experts by segment.

Keywords: Green Marketing, Greenwashing, Additive Model.

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SUMMARY

1. INTRODUCTION

According to Shafik (1994), economic development is often related to the depletion of natural resources, mass pollution, ecological imbalance and climate change. The rapid development of technology, transportation, and industry has caused a significant number of ecological problems such as arctic pollution, depletion of ocean resources, oil and gas production in biome areas, among others (Akopova, Nursapa & Kuderin, 2018).

Ottman (2011) explains that, more and more people are concerned about environmental issues. Over the last 20 years, the general apprehension regarding the theme has grown, increasing the general understanding about current and future impacts. Nidumolu et al. (2009) consider that the growing discussions about environmental and climate problems are leading companies to integrate these issues into their strategies and activities.

Dangelico & Vocalelli (2017) state that as a result of this growth, an increasing number of organizations are developing green products, and consumers are becoming increasingly interested in these products. Intense competitiveness compels organizations to continually pursue differentiation, and as a result, companies use “green” strategies to differentiate themselves while responding to ecological appeals (Du, 2014).

Rex & Baumann (2007) report that the percentage of market share in green products is still small, but through green marketing, price positioning, place and promotion strategies are creating new markets. Many organizations do not use these new strategies optimally, it happens that, according to Pearson (2010), they can do it the right way, but they do not do the right thing. The meaning to do it right or do the right thing comes from the frequently cited distinction of Bennis & Nanus (1985) compared the difference between optimization and prioritization. Given this context, Pearson (2010) explains that companies often hit optimization, but sin in prioritizing.

The term greenwashing was coined in 1986 by activist Jay Westerveld, who described hotel practices to promote towel reuse, and thus 'save the environment'; however, they had no strategy in areas of greater environmental impact, such as waste recycling (Pearson, 2010). Hotel organizations opted for an optimization of economic and environmental benefit, hiding a failure to prioritize for more relevant environmental impacts in the hotel industry (Pearson, 2010).

The practice of this phenomenon, perceived by Westerveld for more than 25 years in the hotel industry, can be observed in various market segments. Pearse (2014) exemplifies in several segments as the automobile industry, the commercial air transport, the beverage industry, coffee, fast food, fuel, sport, etc.

Within this context, many consumers are driven to purchase products and services from organizations that are not truly greener than traditional ones. This paper aims to investigate the phenomenon of greenwashing, proposing a metric tool and applying it to organizations.

1.1. Problem Delimitation

In the last two decades, the environmental problem has been increasingly highlighted, there is growing concern in consumers with their health and the health of the planet (Ottman, 2011). All generations have some kind of interest in environmental issues, from the Baby Boomers, who were born between 1946 and 1964, and were the first to develop green consciousness, to the most recent generations (Ottman, 2011).

According to Ottman (2011), those born between 1964 and 1977 are called Baby Bust or Generation X, have a more refined analysis of environmental issues, which also views political, social and educational issues.

Therefore, generation Y, comprising those born between the early 1980s and 1990s, grew up with technological access to computers and the Internet, they are the future leaders of the green movement and possess this special ability to express themselves through the Internet and reach millions of people (Ottman, 2011).

Finally, generation Z, which has been raised in the conscious world, and with a possible major future impact because of Information and Communication Technology (Ottman, 2011).

Table 1. Generations and their characteristics

Generation	Period	Characteristics
Baby Boomers	1946-1964	Socially conscious consumers, first to develop a “green conscience”;

Baby Bust or Generation X	1964-1977	They see environmental issues in the social, educational and political spheres;
Millennials or Generation Y	1980-1994	Today's leaders of the “green movement” have grown with the use of computers and the Internet, and through them reach millions of people around the world;
Generation Z	2000-current	Raised in the conscious and technological world, with a possible more relevant future impact.

Source: Ottman, 2011

Faced with this new market, organizations are adopting green marketing practices to improve business performance (Papadas et al., 2017). According to Porter (1985), to gain competitive advantage, organizations must perform the activities of their value chain better than their competitors or cheaper.

It is remarkable that marketing is no longer merely an area focused on sales and customer / consumer communication. This activity is an important strategic tool in the management of any organization, public, private or even philanthropic.

Ottman (2011, p. 54 apud NMI, 2009) reports that 83% of North Americans have a certain "green" tone in their values, activities or purchases. The remaining 17% may be considered as unconscious greens, as they comply with local rules and requirements, such as recycling. People have different characteristics, different lifestyles, live with the most diverse cultures in different social environments. It is clear, therefore, that these and other even more specific factors may directly influence purchasing behavior.

Kotler & Keller (2012) brings in his work some of these factors, presenting them as being decisive in deciding what to consume or not. A strong example, pertinent to this context, is the factor of cultural and religious influence exerted on Indian citizens regarding the consumption of beef.

Several authors classified green consumers in many different ways, Cleveland, Kalamas & Laroche (2005), examined the impact of a variety of personal characteristics and attitudes on ecological behavior, they found four dimensions 'altruism-biospheric', 'corporate skepticism', 'economic motivation' and 'individual recycling'.

Burke et al. (2014) divided consumers according to their adoption or rejection of green products, and identified that adoption occurs more for reasons related to impact,

health, personal relevance and quality. While, rejection for reasons related to indifference, expense, confusion and skepticism.

From a business perspective, a survey by Environmental Leader LLC & MediaBuyerPlanner LLC (2009) found that 82% of respondents are willing to invest in green marketing because organizations have realized the opportunity to sell a product for a higher price due to their green image and social responsibility (apud Lee & Lam, 2012).

Dangelico & Vocalelli (2017) state that trying to understand buying behavior by green consumer characteristics may be a mistake, the ideal is to understand it through their perception of buying.

The use of green marketing strategies in the area of marketing communication has had an exponential increase. Many of these companies have started to greenwash, intentionally or unintentionally, as a way to misleads consumers to perceive a green high performance that may not exist in the product/service and/or company. The problem question of this study is how to analyze the phenomenon of greenwashing through a proposed model to measure the level of accusation in real companies?.

1.2. Justification

The Green Marketing theme emerged in the late 70's, defined by Henion & Kinnear (1976), the growing number of related academic researches occurred as the relevance of environmental issues grew. The number of studies increased rapidly after 2008 and peaked in 2012, showing increasing interest in the literature (Dangelico & Vocalelli., 2017).

Consequently, the greenwash phenomenon emerged in the late 1980s, coined by activist Jay Westerveld (Greer & Bruno, 1996; Pearson, 2010) and there are few empirical studies on the subject.

Tavares & Ferreira (2012) state that the phenomenon is also important in the social and marketing context. Despite the growing literature on the phenomenon of greenwashing, there are still gaps in its meaning, definition and interpretation of its concept (Walker & Wan, 2011). According to Delmas & Burbando (2011); Marquis et al., (2016), there is a gap in the knowledge about the reasons why the phenomenon occurs, and the associated process (apud Seele & Gatti, 2015).

It is inferred that the consumption behavior of the inhabitants of the northern hemisphere is strongly influenced when it comes to environmentally friendly products, having these preferences of the buyer, but in Brazil, there are few studies on this topic (Motta & Rossi, 2008). There is no specific legislation for greenwashing in Brazil, in 2012 and 2013 bills were created to sanction and control this practice, but all were filed (Câmara dos Deputados do Brasil, 2018).

One of the essential elements in the construction of the greenwashing phenomenon is the accusation process of a third party (Seele & Gatti, 2015). The higher the level of stakeholder scrutiny, the greater the chances of this accusatory element occurring and thus having the correct effect on corporate legitimacy.

The investigation proposed by this research has been little explored in the literature, it investigates greenwashing and proposes a model to measure the phenomenon. Therefore, as a benefit and advantage, the proposed model can assist stakeholders in increasing the level of scrutiny regarding green marketing by measuring the greenwashing elements identified in the systematic review and generating a score of the accusational level of the phenomenon in organizations.

Thus, this research also seeks to provide a careful look at the subject in the field of communication, and may encourage sustainable consumption (Dangelico & Vocalelli, 2017), protect genuinely green organizations and curb the practice.

1.3. Objectives

The research has the general objective of analyzing the phenomenon of Greenwashing through a proposed model, to measure the phenomenon in real cases.

The general objective of this research has the specific objectives:

1) Identify definitions and concepts related to the phenomenon of greenwashing;
2) Identify characteristics and typologies related to the phenomenon of greenwashing;
3) Propose a model for measuring the phenomenon of greenwashing;
4) Apply the model to organizations and analyze their results.

1.4. Dissertation Structure

The dissertation is structured as follows, First two articles are presented to meet the objectives of the work. The first paper, entitled 'Concepts and Forms of Greenwashing: A Systematic Review', is related to the first and second specific objectives, that seeks to identify definitions and concepts of the phenomenon in the literature; and to identify characteristics and typologies related to the phenomenon of greenwashing.

The second paper, entitled 'The Greenwashing Accusation Score: A Measurement Tool' meets the third and fourth specific objectives, which proposes a model to measure the greenwashing level in an organization; and apply the model in organizations to analyze their results. Table 2 shows the specific objectives, their methodological relationship and the related paper. The last part of the dissertation presents the study conclusions, limitations and future work proposals.

Table 2. Methodological Relationship

Objective	Methodology	Related Paper
Identify definitions and concepts related to the phenomenon of greenwashing	Systematic Literature Review	Concepts and Forms of Greenwashing: A Systematic Review
Identify characteristics and typologies related to the phenomenon of greenwashing	Systematic Literature Review	Concepts and Forms of Greenwashing: A Systematic Review
Propose a model for measuring the phenomenon of greenwashing	Additive Model	The Greenwashing Accusation Score: A Measurement Tool
Apply the model to organizations and analyze their results	Greenwashing Accusation Score	The Greenwashing Accusation Score: A Measurement Tool

Source: The authors

2. CONCEPTS AND FORMS OF GREENWASHING: A SYSTEMATIC REVIEW

ABSTRACT

The aggravation of environmental problems has led companies to seek the development and commercialization of green products. Some companies misleads their stakeholders through a phenomenon called greenwashing. This paper aims to explore the phenomenon of greenwashing through a systematic literature review in search of its main concepts and typologies in the past ten years. The article identified several different conceptualizations of the phenomenon and through systematic review identified the dimensions and types of greenwashing.

Keywords: Green Marketing. Greenwashing. SLR.

1. INTRODUCTION

Since the aggravation of environmental pollution, many companies around the world have been paying more attention to environmental issues (Guo et al., 2018; Zhang et al., 2018; Roulet & Touboul, 2014). In China, environmental problems such as haze and water pollution have become increasingly prominent (Guo et al., 2014a).

India is facing environmental issues such as rising air pollution, loss of food security and e-waste disposal pollution (Fernando et al., 2014). They have a 1.2 billion population and have generated 2.3 k MtCO2 emissions into the atmosphere in 2017 (Global Carbon Atlas, 2018), classifying themselves as the third most polluter country only behind China and the U.S., long-time polluter ace.

Table 1.
Top 10 Territorial MtCO2

Rank	Country	MtCO2
1	China	9705
2	United States of America	5311
3	India	2377
4	Russian Federation	1668
5	Japan	1204
6	Germany	802
7	Iran	638
8	Saudi Arabia	632
9	South Korea	595
10	Canada	558

Source: Global Carbon Project, 2018

Due to increasing of environmental problems, and consequently in public awareness, many stakeholders are more aware of environmental consideration (Chen &

Chang, 2012). Over the past decade, stakeholders like investors, consumers, governments, and corporate customers are increasing the pressure on companies to disclose information about their environmental performance (Marquis et al. 2016, Kim & Lyon, 2015) and for environmental-friendly products (Guo et al., 2014a).

According to Vollero et al. (2016), companies from the Energy sector experiences increasing pressure from stakeholders to produce sustainable products and clean energy. Environmental awareness has grown on society (Antunes et al., 2015; Porter & Kramer, 2006; Wolniak, 2015), and especially on consumers (Antunes et al., 2015), they are eager for environmental-friendly products (Chang & Chen, 2013; Chen et al., 2014).

The Nielsen Media Research (2015) presented that 66% of global consumers are willing to pay more for environmentally-friendly products. When these customers perceive firms as socially responsible, they may be more willing to buy the products from this firms at a higher price (Grimmer & Bingham, 2013; Guo et al., 2014a).

In order to respond to this issues, Corporate Social Responsibility is gaining importance among business leaders (Porter & Kramer, 2006). CSR is defined as "a concept whereby companies integrate social and environmental concerns in their business operations and in their interaction with their stakeholders on a voluntary basis" (European Comission, 2009).

To reach the integration of social and environmental concerns in business operations companies must be sustainable and socially responsible (Antunes et al., 2015), not only economically. They have to aim the three bottom lines: economic, environmental and social performance or people, planet and profit (John Elkington 1994).

Sustainable development is defined by "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1987). The growing demand "drives firms to develop green marketing strategies to show consumers their good corporate image and social responsibility" (Zhang et al., p. 740, 2018).

As reported by Delmas & Burbano (2011), the green market is proliferating. Consumer, capital markets, products, services, and firms have been expanding. As there is an increase in green markets, it is followed by the phenomenon greenwashing (Majláth, 2017). The phenomenon is defined as "the intersection of two firm behaviours: poor environmental performance and positive communication about environmental performance" (Delmas & Burbano, 2011, p.65). There are many different definitions of

greenwashing, in various perspectives. This review attends to search the recent literature to identify the different definitions of greenwashing and its forms.

Stakeholders and society in general, demands transparency in disclosing information about the environmental impact of companies activities, this communication must be dynamic, through different channels and with the purpose of educating awareness (Antunes et al., 2015). The Federal Trade Commission (2012, p. 62122) instructs to "use clear and prominent qualifying language to convey that a general environmental claim refers only to a specific and limited environmental benefit(s)".

The advent of Web 2.0 brings new social media tools, and stakeholders can exercise new forms of interacting and sharing information through the Internet. Online corporate pages or blogs, wiki and petitions websites, and particularly social networks like twitter and facebook are redefining the interactions and communications between companies and their stakeholders (Fieseler et al. 2010).

Some companies invests in green marketing communications, to be perceived as eco-friendly and socially engaged. They advertise and CSR to achieve better purchase intentions and brand attitudes (Nyilasy et al. 2014). However, the reality behind corporate environmentalism can be disappointing, TerraChoice (2010) reported that 95% of products claiming to be green in Canada and the U.S.A. committed at least one of the "sins of greenwashing", from the sin of the hidden trade-off to the sin of worshiping false labels.

Greenwashing was first accused in 1986 by activist Jay Westerveld, when hotels begin asking guests to reuse towels, claiming that it was a company water conservation strategy, although, didn't have any environmental actions with more significant environmental impact issues (Pearson, 2010).

According to advertising firm Ogilvy and Mather, greenwashing practices is growing in the last decades to epidemic proportions (Hsu, 2011). With the increase of green markets, followed by greenwashing, a trust problem has emerged since customers have difficulties in identifying a true green claim (Nyilasy et al., 2014).

Green skepticism has grown with greenwashing, and it would obstruct green marketing (Chen et al., 2013). Real green claims would suffer from greater skepticism since it is hard for customers to differentiate the reliability of green marketing initiatives. TerraChoice (2010) has released a study to help customers identify greenwashing practices by companies with the seven sins of greenwashing.

In developed countries that have more significant environmental awareness, the regulation from the authorities is in a higher level of development compared to developing countries, in the U.S. regulation of greenwashing is extremely limited with uncertain regulation enforcement (Delmas & Burbano, 2011). In response to such non binding regulatory guidelines, scholars, activists and environmentalists have argued that its inadequately protect consumers from the harmful effects of the phenomenon of greenwashing (Feinstein, 2012).

There are none or poor green regulation in developing countries governments even though the mass population does have any or poor concerns about environmental care. The practice of recycling by waste sorting and collection that seems to be a regular thing to do by the millennials in developed countries (Ottman, 2011), on the other side in emerging countries, it is a privilege to have it.

The primary purpose of this article is to analyze the different typologies and characteristics of greenwashing. In order to achieve the objective, we sought to systematically review the last ten years in the literature. A Systematic Literature Review has been conducted in search of the phenomenon definitions and related concepts; and its characteristics and typologies.

2. METHODOLOGY

This research has followed the proceedings of a systematic review of the literature, based on the PRISMA checklist and flow diagram. Preferred Reporting Items for Systematic Reviews and Meta-Analyses, i.e. PRISMA, is an evidence-based minimum set of items for reporting systematic reviews and meta-analyses. PRISMA is not a quality assessment mechanism, although it may be useful for critical appraisal by reviewers and editors. Its objective is to help authors to improve the reporting of systematic reviews and meta-analyses (PRISMA, 2018).

A protocol has been developed to specify the carefully planning proceedings and eligibility criteria, to select and identify the data of documents. According to Shamseer et al. (2015), a protocol is an essential component of a systematic review, in the protocol are specified the pre-defined eligibility criteria and methodological approach, which ensures the consistency by the review team, accountability, research integrity and transparency.

2.1. Research Questions

- RQ 1: Which are the main definitions of Greenwashing and their evolution over the past ten years?
- RQ 2: Which are the characteristics and forms of Greenwashing?

2.2. Search Strategy

All content and papers selected for each phase of the review were available for all the researchers in the cloud, the data sheets were created using a document cloud base application that enables collaboration from different persons remotely located. This strategy permitted better control and enhanced standardization of the process of the systematic review.

With the purpose of identifying and recovering the smallest possible number of publications, the research incorporates a search strategy. The resources used to searches are Web of Science (www.webofscience.com); and Scopus (www.scopus.com). Other databases were excluded from the list of sources because they were not recommended by experts, because they need some kind of payment other than our educational institute can provide and because of the significance for the systematic review.

Scopus search engine offers a better tool in terms of detailed string than Web of Science. The search string from Scopus can be developed with a much-specified search query. When the search strings were applied, there were identified a total of 263 publications considering both engines.

The keywords applied in the search engines were: "greenwashing", "greenwash" and "greenwasher". Table 2 exhibits the specific search filters used on both Scopus and Web of Science databases.

Table 2.
Databases and search filters

Database	Search filters
Scopus	* Search in: Article Title, Abstract, Keywords * Document type: Article * Source type: Journal * Data range: 2009 to 2018 * Language: All
Web of Science (WoS)	* Search in: Topic * Document type: Article * Data range: 2009 to 2018

* Language: All

2.3. Data Selection

The Data Selection was performed in two steps: The first stage involved a Title and Abstract analyses; and the second stage involved an Introduction and Conclusion analyses.

In the first stage, an initial selection was performed on documents that reasonably satisfied the selection criteria based on the titles and abstracts reading. The process was handled in pairs to reduce possible bias and the researchers worked individually on the inclusion or exclusion of the documents and then compared the spreadsheets. When a divergence occurred and a consensus was not possible a third researcher was consulted. If the divergence still remained, the document was included in the list. Out of the initial selection of 263 documents, discarding the duplicates, after the first stage, 149 articles were selected to the second phase.

In the second stage, the selection was performed on documents that fairly satisfied selection criteria based on the introductions and conclusions reading. Similar to the first stage, the process was also managed in pairs with the same strategy in case of divergencies described in the first stage. After the second selection stage, 67 documents were selected for a full reading and data extraction.

2.4. Data Extraction & Quality Assessment

In the extraction stage, all the selected documents were assessed concerning the methodological quality, yet the results were not used to limit the selection. We had 67 documents that we found sentences that answered the first research question.

From the 67 documents selected for full reading, 16 papers presented sentences that answered the second research question, representing a total of 42 quotes that were extracted.

3. RESULTS

This section explains the analysis of the data extracted from the selected documents.

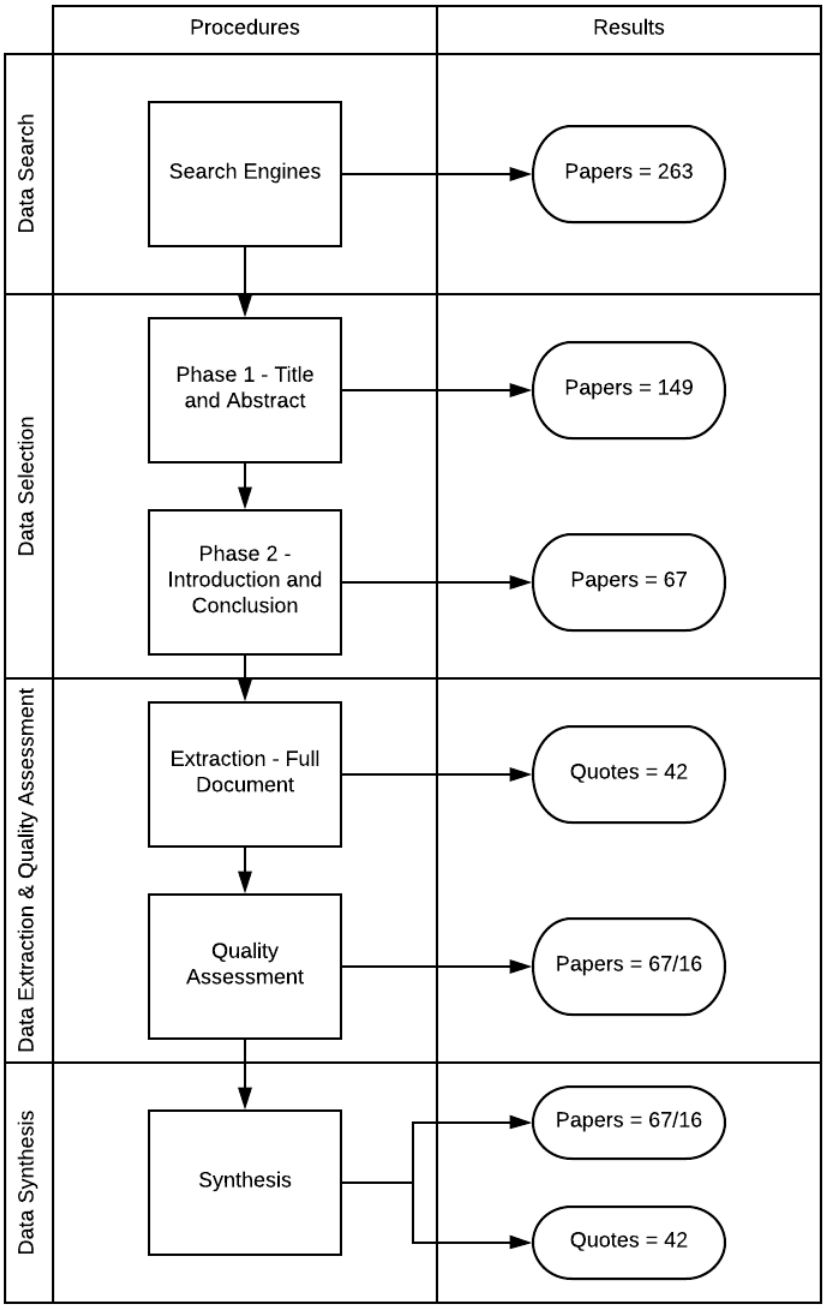

Figure 1. Results achieved on each stage at the systematic review process.

3.1. Characteristics of the studies included in the review

Table 3 reports the publication names of the journals that were included in the review. The journal that published most of the studies is "Journal of Business Ethics", followed by "BioTechnology: An Indian Journal", "Journal of Advertising", "Journal of Business and Technical Communication", and "Journal of Cleaner Production".

Table 3.
Number of articles included in the review per each journal.

Publication name	Number of documents
Journal of Business Ethics	11
Biotechnology: An Indian Journal	3
Journal of Advertising	2
Journal of Business and Technical Communication	2
Journal of Cleaner Production	2
Marketing Intelligence & Planning	2
Organization & Environment	2
Others (one document per journal)	43
Total	*67*

The 67 documents included in the review were published in 50 different journals. There is a strong presence of publications from “Journal of Business Ethics” with 11 selected documents. This journal is devoted to a wide variety of methodological and disciplinary perspectives related to ethicals issues in business.

There is a majority of Business and Management journals related to Environment and Sustainability issues in the selected papers. Others journals brought the greenwashing phenomenon in the fields of Advertising and Communications, Economics, Sociology and Ethics, Production Engineering, Marketing, Accounting, Tourism, Education and others. These results show the multidisciplinary characteristic of the phenomenon.

The selection included only papers in the period of 2009 - 2018, but no documents from 2009 and 2010 were included in this research. Observing figure 2 there is a relevant increase in the number of studies over time, with a peak in 2017. This trend suggests that there is an increasing interest for the phenomenon of greenwashing in the literature.

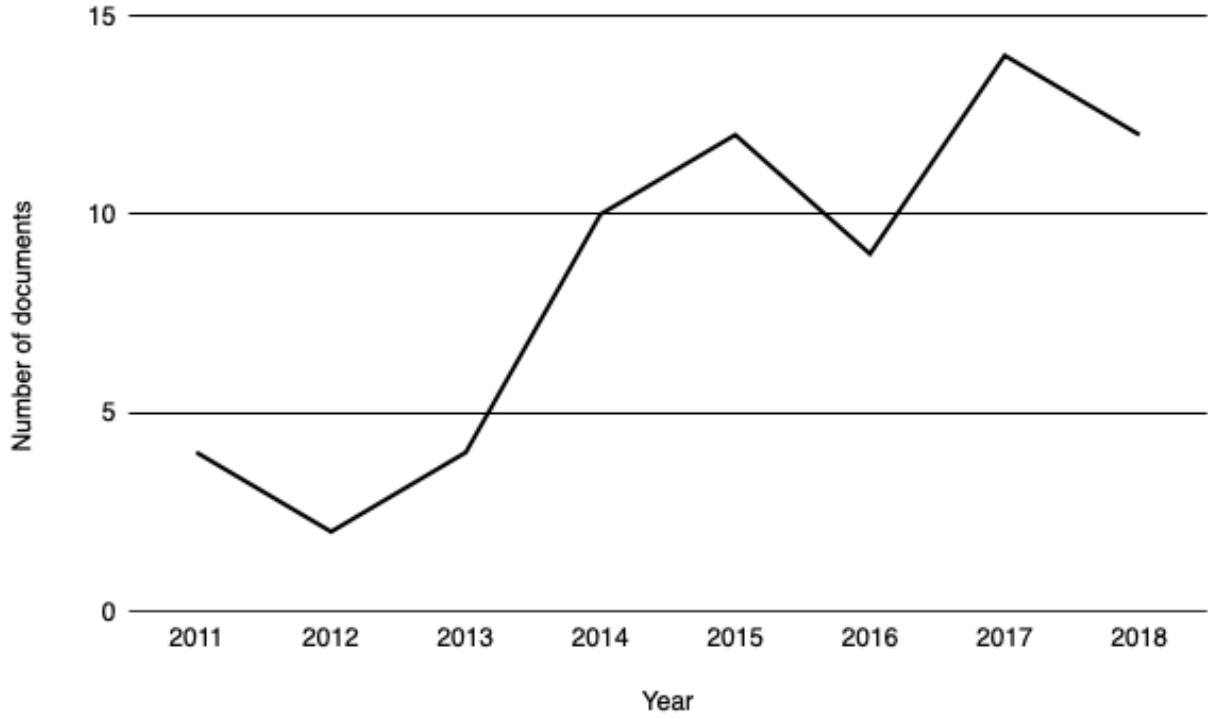

Figure 2. Evolution of the number of reviewed documents over time.

Due to the objective of this paper, documents included in the review have been examined with precise attention to two main topics: definitions of greenwashing and related concepts; and the phenomenon characteristics and typology. 67 documents provided insights on definitions of greenwashing and related concepts. From the 67 selected documents, 16 also provided insights on the phenomenon characteristics and typology.

3.2. Which are the main definitions of Greenwashing and their evolution over the past ten years?

The term Greenwashing was coined first in 1986, by an environmentalist Jay Westervelt. He published an essay on the hospitality industry about their practices to promote towel reuse (Wolniak, 2015; Guo et al, 2018).

Several dictionaries define the phenomenon of greenwashing, Webster's New Millenium Dictionary of English (2018) defines greenwash as "practice of promoting environmentally friendly programs to deflect attention from an organization's environmentally unfriendly or less savoury activities.". In 1999 the term was added to the Concise Oxford English Dictionary (2018), that defines it as: "Disinformation disseminated by an organization so as to present an environmentally responsible public image; a public

image of environmental responsibility promulgated by or for an organization etc. but perceived as being unfounded or intentionally misleading.".

According to Lyon & Montgomery (2015), there is no rigid definition of greenwashing due to its multifaceted nature. Above we describe the different main approaches we found in defining the phenomenon of greenwashing.

3.2.1. Greenwashing as Selective Disclosure

TerraChoice (2010) defines greenwashing as "the act of misleading consumers regarding the environmental practices of a company or the environmental performance and positive communication about environmental performance".

Delmas & Burbano (2011, p. 67) define as "poor environmental performance and positive communication about environmental performance". Baum (2012, p. 424) considers greenwashing "the act of disseminating disinformation to consumers regarding the environmental practices of a company or the environmental benefits of a product or service".

Tateishi (2017, p. 3) summarizes greenwashing as "communication that misleads people regarding environmental performance/benefits by disclosing negative information and disseminating positive information about an organization, service, or product".

All of this authors describe the phenomenon as two main behaviours simultaneously: retain the disclosure of negative information related to the company's environmental performance and expose positive information regarding its environmental performance. This two-folded behaviour can be named as selective disclosure.

We found several articles considering greenwashing a type of selective disclosure. Lyon and Maxwell (2011) presented the first economic analysis of greenwash, with specific persuasion game approach from Milgrom and Roberts (1986). Lyon and Maxwell (2011, p. 9) consider selective disclosure a form of greenwashing and define the phenomenon as "selective disclosure of positive information about a company's environmental or social performance, without full disclosure of negative information on these dimensions, so as to create an overly positive corporate image".

Lyon and Maxwell (2011) assume social and environmental dimensions on their work, others consider only the environmental dimension, considering the social dimension a different phenomenon.

Marquis et al. (2016, p. 483) define selective disclosure as "a symbolic strategy whereby firms seek to gain or maintain legitimacy by disproportionately revealing

beneficial or relatively benign performance indicators to obscure their less impressive overall performance".

3.2.2. Greenwashing as Decoupling

Some authors associate greenwashing to a decoupling behaviour. Siano et al. (2017, p. 27) relate greenwashing with symbolic actions, "which tend to deflect attention to minor issues or lead to create 'green talk' through statements aimed at satisfying stakeholder requirements in terms of sustainability but without any concrete action.".

Walker & Wan (2011) defines greenwashing as the gap between "symbolic" and "substantive" corporate social actions (CSA). Companies that have a negative CSR performance and at the same time apply a positive communication about their CSR performance.

Guo et. al. (2014b, p. 1828) defines greenwashing as essentially decoupling behaviours that are symbolic environmental protection behaviours with no environmental protection behaviour or failure to fulfil environmental protection commitments, to alleviate the external public pressures and uncertainties and to avoid the conflict with external constituents.". The authors reinforce that these decoupling behaviour of greenwashing brands os to maintain corporate legitimacy.

3.2.3. Signaling and Corporate Legitimacy theory

The phenomenon of greenwashing was also related to corporate legitimacy theory in the literature. It can be distinguished in three types of corporate legitimacy: cognitive legitimacy, pragmatic legitimacy and moral legitimacy. According to Seele & Gatti (2015), greenwashing occurs in the light of pragmatic legitimacy.

"Cognitive legitimacy is based on the shared taken-for-granted assumptions of an organization's societal environment. Moral legitimacy relies on moral judgments about the organization and its behaviour..."(Seele & Gatti, 2015, p. 242). And pragmatic legitimacy is "the result of self-interested calculations of the organization's key stakeholders, and it is based on stakeholder's perceptions of their personal benefit deriving from corporate activities and communication." (Seele & Gatti, 2015, p. 242).

Guo et al. (2014b) explain that when companies fail to reach their green goals, the decoupling behaviours can reduce cognitive legitimacy (take-for grandness of constituents), moral legitimacy (positive green evaluation), and pragmatic legitimacy (benefiting constituents).

3.3. Which are the characteristics and forms of Greenwashing?

According to Delmas & Burbano (2011) greenwashing is the act of misleading consumers regarding the environmental practices of an organization (firm-level) or the environmental benefits of a product or service (product/service-level). An example of firm-level greenwashing is the "Ecomagination" campaign from General Electric which advertised the organization's environmental practices while at the same time lobbied to fight new clean air EPA requirements (Delmas & Burbano, 2011). An example of product/service-level greenwashing is the Energy Star mis-certified refrigerators from LG, an eco-label of energy efficiency, which was found that 10 models of LG's refrigerators were not energy efficient to be certified (Delmas & Burbano, 2011).

We found two different major classifications of greenwashing: Claim greenwashing and Executional greenwashing. The studies on the literature concentrate on product/service-level claim greenwashing, while executional greenwashing was found only on two articles in this revision. Figure 3 below shows the main classifications in the phenomenon of greenwashing.

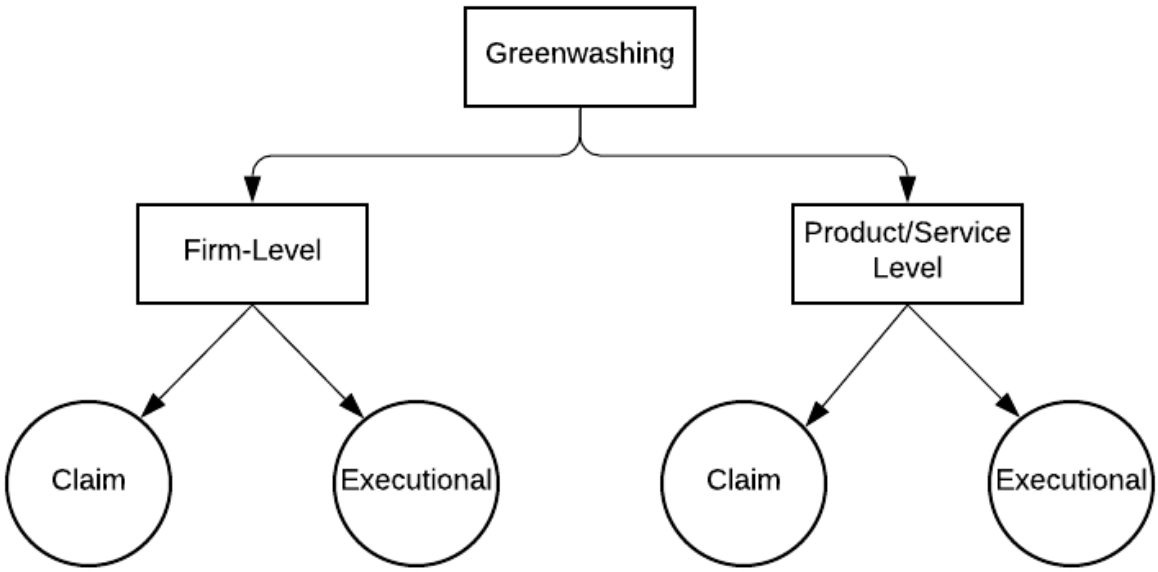

Figure 3. Major classifications of greenwashing.

3.3.1. Claim Greenwashing

The majority of research to date has focused on product/service-level claim greenwashing, which uses textual arguments that explicitly or implicitly refer to the ecological benefits of a product or service to create a misleading environmental claim.

Parguel et al. (2015), cited a study from 1991 in witch Kangun, Carlson and Grove distinguished three categories of greenwashed advertising: (1) those employing false claims; (2) those omitting important information that could help evaluate the claim sincerity, and (3) those employing vague or ambiguous term, which could be summed up as lying, lying by omission or lying through lack of clarity.

From Tateishi (2017) and Baum (2012) we found cited a study conducted by Carlson et al. (1993) that developed two typologies of green claims: (1) claim type; and (2) claim deceptiveness. Claim type involves five typological categories: (a) product orientation – claims centring on the ecological attribute of a product; (b) process orientation – claims centring on the ecological high performance of a production process technique, and/or an ecological disposal method; (c) image orientation – claims centring on enhancing the eco-friendly image of an organization, like claims that associates an organization with an environmental cause or activity which there is elevated public support; (d) environmental fact - claims that involves an independent statement that is ostensibly factual in nature from an organization about the environment at large, or its condition; and (e) combination - claims having two or more of the categories above. (Tateishi, 2017); (Baum, 2012).

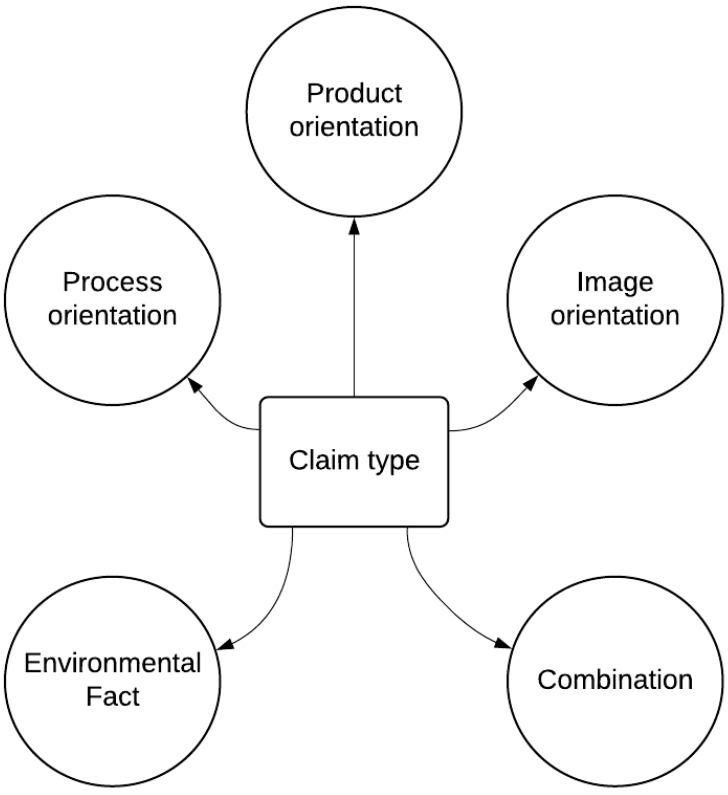

Figure 4. Types of claims (Carlson et al., 1993).

These claim types presented above can be classified in a second typology, claim deceptiveness, that also involves five typological categories: (a) vague/ ambiguous - claims that are overly vague, ambiguous, too broad, and/or lacking a clear definition; (b) omission - claims missing the necessary information to evaluate its validity; (c) false/outright lie - claims that are inaccurate or a fabrication; (d) combination - claims having two or more of the categories above; and (e) acceptable - claims that do not contain a deceptive feature (Tateishi, 2017).

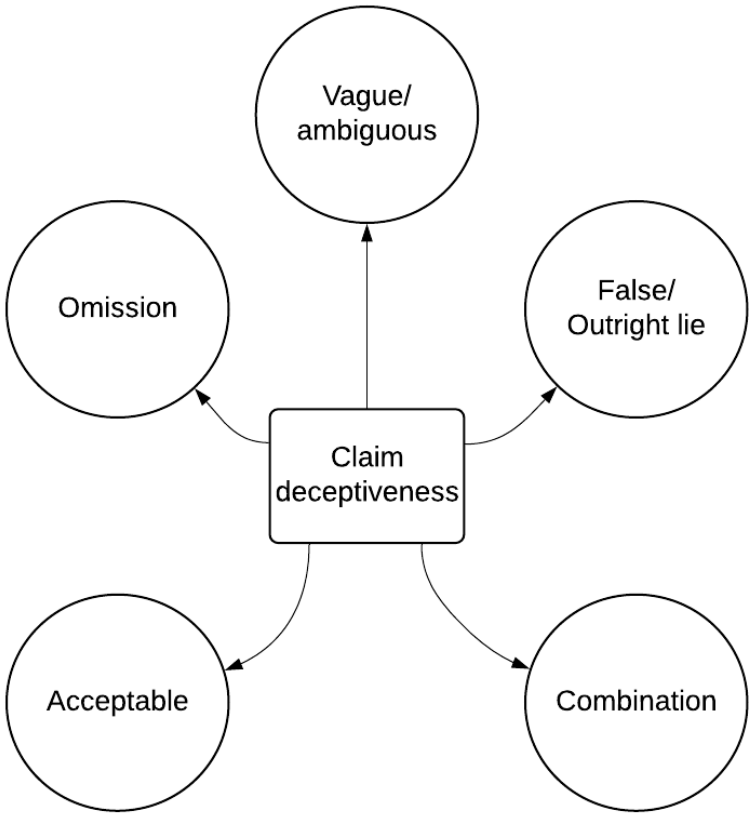

Figure 5. Claim deceptiveness (Carlson et al., 1993).

An environmental marketing firm called TerraChoice (2010) has created a classification called "the seven sins of greenwashing". The classification has been cited in several articles, Scanlan (2017) cited that it includes various fibs, half-truths, vagueness and other forms of trickery. Markham, Khare and Beckman (2014) described that the seven sins assist more precisely in detecting instances of firm-based or product-based greenwashing.

Baum (2012) cited that the seven sins of greenwashing can indicate the main ways in which a company can mislead consumers with environmental claims and uses these

seven sins as a framework for their advertising analysis. According to Antunes et al. (2015), the objective of the seven sins is to discourage companies to apply these green marketing strategies by giving the consumers information they need to be cautious in their purchase decisions.

Delmas & Burbano (2011) explains that the TerraChoice Group's seven sins are all product-level greenwashing. We have found quotes on 10 articles outlining the seven sins of greenwashing, that are described below (TerraChoice, 2010).

1. The sin of the hidden trade-off: A claim suggesting that a product is ‘green’ based on a narrow set of attributes without attention to other important environmental issues. Paper, for example, is not necessarily environmentally-preferable just because it comes from a sustainably-harvested forest. Other important environmental issues in the paper-making process, such as greenhouse gas emissions, or chlorine use in bleaching may be equally important (TerraChoice, 2010). Other examples are energy, utilities and gasoline corporations that advertise about the benefits of new sources of energy while some are drilling into unexplored areas to source oil and thus destroying natural habitats and losing biodiversity, disguising the imbued hidden tradeoff (Baum, 2012).
2. The sin of no proof: An environmental claim that cannot be substantiated by easily accessible supporting information or by a reliable third-party certification. Common examples are facial tissues or toilet tissue products that claim various percentages of post-consumer recycled content without providing evidence (TerraChoice, 2010). In short terms, if a corporation makes a claim that includes some kind of percentage or statistics info that are not verified with something that could prove it, like a fine-print text or a URL to lead to more information, the claim is considered as no proof (Baum, 2012).
3. The sin of vagueness: A claim that is poorly defined or too broad, a claim lacking in specifics that its real meaning is inclined to be misunderstood by the consumer. ‘All-natural’ is an example of this sin. Arsenic, uranium, mercury, and formaldehyde are all naturally occurring, and poisonous. ‘All natural’ isn’t necessarily ‘green’ (TerraChoice, 2010). Other examples are "Non-toxic" because everything is toxic in certain dosages; "Green", "Environmentally friendly", "Eco-friendly", and "Eco-conscious" are also vague because without elaboration they are meaningless (Baum, 2012).

4. The sin of worshipping false labels: A product that, through a false suggestion or certification-like image, mislead consumers into thinking that it has been through a legitimate green certification process. An example is a paper towel whose packaging has a certification-like image that makes a claim that the product "fights global warming" (TerraChoice, 2010). Other examples include green jargon such as "eco-safe" and "eco-preferred" (Baum, 2012).
5. The sin of irrelevance: An environmental claim that may be truthful but is unimportant or unhelpful for consumers seeking environmentally preferable products. ‘CFC-free’ is a common example, since it is a frequent claim despite the fact that CFCs are banned by law (TerraChoice, 2010).
6. The sin of lesser of two evils: A claim that may be true within the product category, but that risks distracting the consumer from the greater environmental impacts of the category as a whole. Organic cigarettes could be an example of this Sin, as might the fuel-efficient sport-utility vehicle (TerraChoice, 2010).
7. The sin of fibbing: Environmental claims that are simply false. The most common examples were products falsely claiming to be Energy Star certified or registered (TerraChoice, 2010).

Stephen J. Scanlan (2017) conducted a research in the oil gas industry (OGI) communication on hydraulic fracking and proposed new sins related to the conceptualisation of greenwashing. The OGI masks harm done and other risks with greenwashing in the form of new sins he elaborated build on TerraChoice (2010): (8) false hopes; (9) fearmongering; (10) broken promises; (11) injustice; (12) hazardous consequences; and (13) profits over people and the environment (Scanlan, 2017).

8. The sin of false hopes: A claim that reinforces a false hope. The OGI hydraulic fracking method has an enormous negative impact on the environment, critics argue that ecological modernisation is not possible and believing otherwise is harmful to the environment (Scanlan, 2017).
9. The sin of fearmongering: Claims that fabricate insecurity related to not "buying in" on an organization practice, like OGI hydraulic fracking (Scanlan 2017). Scanlan (2017, p. 16) explains that "shifting the scale of fear and seizing opportunities from instability and uncertainty borne out of wars in Afghanistan and Iraq, the global war on terror, and volatile fuel costs, alter the public perception of risk”.

10. The sin of broken promises: Claims promising that fracking will lift up poor, rural communities with riches from mineral rights and economic development, but when evidence shows the contrary, communities are left with irreversible impacts (SIEGEL, 2014 apud Scanlan, 2017). Scanlan (2017) describes that greenwashing obscures who loses regarding the negative impacts of fracking and OGI profits from exploiting the hopes and trust of the citizenry.
11. The sin of injustice: According to Scanlan (2017) the environmental communication examined in his research does not speak directly to communities most affected by fracking, it focuses on a segment of the population that benefits from fracking but don't suffer its consequences.
12. The sin of hazardous consequences: Greenwashing hides the reality of inequality and distracts the public from the dangers of risk other experience, Scanlan (2017) includes another sin in reference to harm done from hazardous consequences.
13. The sin of profits over people and the environment: To profit over people and the environment is what Scanlan (2017) describes as potentially the greatest greenwashing sin of all.

"The delivery of false hopes and resulting broken promises, fearmongering that reorients public understanding of risk and the hazardous consequences of fracking, environmental injustice, and the pursuit of profits over people and the environment have serious impacts on the planet" (Scanlan, 2017, p. 20).

Contreras-Pacheco and Claasen (2017) brought five firm-level greenwashing: (1) dirty business; (2) ad bluster; (3) political spin; (4) it is the law, stupid! (Bruno, 1992). Fifth firm-level greenwashing form: (5) fuzzy reporting (Berrone, 2016).

- Dirty business: Belonging to an inherently unsustainable business, but promoting sustainable practices or products that are not representative neither for the business or the society.
- Ad bluster: Diverting attention from sustainable issues, through the use of advertising. It is used to exaggerate achievements or present alternative programs that are not related to the main sustainability concern.
- Political spin: Influencing regulations or governments in order to obtain benefits that affect sustainability. It is common to notice that these spins are "justified" due to companies character of large taxpayers or employers.

- It's the law, stupid!: Proclaiming sustainability accomplishments or commitments that are already required by existing laws or regulations.
- Fuzzy reporting: Taking advantage of sustainability reports and their nature of one-way communication channel, in order to twist the truth or project a positive image in terms of CSR corporate practices.

3.3.2. Executional Greenwashing

Parguel et al. (2015) described a new form of greenwashing that the authors called 'Executional Greenwashing'. This strategy of greenwashing doesn't use any type of claim that was described before, but it suggests nature-evoking elements such as images using colors (e.g. green, blue) or sounds (e.g. sea, birds). Backgrounds representing natural landscapes (e.g. mountains, forests, oceans) or pictures of endangered animal species (e.g. pandas, dolphins) or renewable sources of energy (e.g. wind, waterfalls) are examples of executional nature-evoking elements (Parguel et al., 2015). The research addressed to this gap in the literature by documenting the executional greenwashing effect based on advertising execution knowledge.

These nature-evoking elements, intentionally or not, may induce false perceptions of the brand's greenness. According to Hartmann and Apaolaza-Ibáñez (2009, apud Parguel et al., 2015, p. 2) these elements can "trigger ecological inferences subtly by activating implicit references to nature through nature imagery".

Parguel et al. (2015) conducted a research that presented empirical evidence of the misleading effect of these nature-evoking elements named 'executional greenwashing effect' and moderators factors that may reduce its impact. The research consisted of a web survey considering two types of consumers: (a) non-expert consumers and (b) expert consumers.

The empirical results showed that the presence of advertising executional elements evoking-nature only generates higher perceptions of the brand's greenness among non-expert consumers, expert consumers were not significantly affected.

4. DISCUSSION

In this paper, we have discussed the main concepts of greenwashing and its main types that we found present in the literature. Due to its multidisciplinary characteristic, no general definition of greenwashing is accepted to recent day. The phenomenon has been discussed by researchers from several areas such as Business, Communication,

Economy, Production Engineering, Social Sciences, Environmental Management and Law.

Some scholars consider only environmental issues when talking about greenwashing, distinguishing it with the term bluewashing, which stands for social issues. Others researchers do not distinguish and consider greenwashing a social and environmental phenomenon.

We can see that greenwashing can be perceived and accused by the observer in several different ways. From product-level claims with environmental labelling to firm-level nature-evoked executional elements in Sustainability Reports, the phenomenon may be classified in a complex variety of options.

This multifaceted amount of forms in which greenwashing has been observed offers difficulty for consumers to identify the phenomenon manifestations. Even among consumers considered expert consumers, well informed about greenwashing and the market in question, it is a challenge to identify greenwashing. In consumers considered regular, who do not know or have limited information about the phenomenon, the accusation process is even more complicated.

A second implication is the challenge of creating regulations that may restrain and even prevent the practice of greenwashing by organizations. Currently, no country has effective legislation, recent work shows that organizations continue to greenwash consumers freely.

5. CONCLUSION

The main definitions of greenwashing were explored in the literature. Most researchers are based on the definitions of the Oxford English Dictionary (2018) and TerraChoice (2010). In these definitions, the phenomenon is seen as a deliberate corporate action with the presence of misleading elements, focused on the deception of stakeholders.

As greenwashing was first accused in 1986 by Jay Westerveld (Pearson, 2010), an activist who noticed an organizational communication with a misleading trait, the element of accusation is key in the process. Seele & Gatti (2015) were the only researchers who observed the phenomenon by adding the accusation as a key element in the process, a charge or claim from a third party that someone has done something illegal or wrong. Without the accusation element, the definition of the phenomenon is incomplete.

Aiming to reach the first objective, this review exposed the main definitions of greenwashing present in the literature. These definitions were presented in different conceptual perspectives, due to the multidisciplinary characteristic of the object of study. A limitation of the work found in its development were the keywords used in the search strings. Terms like 'CSR-Wash', 'Decoupling' and 'Selective Disclosure' may contribute to the number of articles selected in the systematic review.

To achieve the second objective, a categorization of the phenomenon was developed. This classification of greenwashing is the main academic contribution of the study, which can provide a theoretical basis for the accusatory element of the phenomenon.

In this emerging and growing green market, there are also organizations that are really green, the developed classification of greenwashing can also help to avoid unsubstantiated accusations and protect these genuine green companies.

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3. THE GREENWASHING ACCUSATION SCORE: A MEASUREMENT TOOL

ABSTRACT

Environmental issues increase the attention of governments, organizations, society as a whole and companies to eco-innovate and market green products. However, a practice known as greenwashing has become an alternative to unfairly gain corporate legitimacy. This paper aims to describe a new model for measuring the degree of greenwashing to assist stakeholders. We propose a model to measure the level of greenwashing accusation and we apply to two multinational companies to test it. The greenwashing accusation score was calculated in the selected cases and pointed out that nature-evoked executional elements stood out at product and firm-level. This may indicate that companies prefer to use elements called executionals rather than claims, as legislation focuses on regulating written communications. The model was effective in measuring the phenomenon but was based on a single person's decision making process, which can generate some biases, therefore as future work a group process can be applied.

Keywords: Sustainability. Green Marketing. Greenwashing. Additive Model.

1. INTRODUCTION

Sustainability is a hot topic today and has become a major concern for governments, organizations and society as a whole. Industrial development and globalization have accelerated the process of environmental degradation with pollutant emissions, resource depletion, ocean pollution, global warming, and so on. Sustainable development was defined as “development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs.” (WCED, 1987).

As environmental concern has grown in our Society, more organizations are exploring Green Marketing to differentiate themselves in the marketplace with eco-friendly products (Chen & Chang, 2011).

Chen and Chang (2012), in their study on the influence of perceived value and perceived risk on the intentions of buying green products, show that perceived value can positively affect green confidence and green purchase intention, while perceived risk can negatively influence the two. According to Nagar (2013), consumers who have a positive attitude towards green advertising increase their brand confidence.

Unfortunately some companies practice greenwashing, which Delmas & Burbano (2011, p.66) defined as "the act of misleading consumers regarding the environmental practices of a company (firm-level greenwashing) or the environmental benefits of a product or service (product-level greenwashing)".

In addition to the deliberate organizational act, the accusational element in the greenwashing process plays a fundamental role in its construction. According to Seele & Gatti (2015), organizations practice greenwashing to influence their stakeholders' perceptions towards environmental performance with false or misleading messages and increase corporate legitimacy. The higher the level of media scrutiny, NGOs and environmental activists in organizations' environmental claims, the greater the chances of a greenwashing accusation.

Given this context, this article aims to assist stakeholders in increasing the level of scrutiny regarding communications involving issues of social and environmental responsibility. To achieve this goal, we propose a model to measure the level of greenwashing accusation and we apply to two multinational companies to test it.

The article is structured with a theoretical framework on the subject of greenwashing, followed by the structuring of the staged model called Greenwashing Accusation Score (GAS), its application and results in the selected cases and finally the conclusions and references.

2. THEORETICAL REFERENCE

2.1. Corporate Social Responsibility

Organizations hold a high responsibility for current social and environmental problems, in 1953 Bowen wrote for the first time on Social Responsibilities of a businessman. CSR is defined as "a concept in which companies integrate social and environmental concerns into their business operations and their interaction with their stakeholders on a voluntary basis" (Öberseder, Schlegelmilch & Gruber, 2011, p. 451).

The reasons that motivate companies to engage in socio-environmental responsibility actions can be classified into two primary categories: public service and organizational service. The public service motives reflect the concern of organizations with the collective interest, for example, social and environmental concern. Differently, the reasons for organizational service reflect the concern of the organization with its own interests, how to maximize profits (Foreh & Grier, 2003).

Corporate social-environmental responsibility initiatives can also be divided into three dimensions: (1) commercial, (2) social and (3) ethics. These three dimensions have shown that they can affect the perception of the image of a company before its stakeholders (Singh et al., 2008).

The means, channels, and content of organizational communication may vary in each organization, depending on their motives for engaging in socio-environmental practices and organizational circumstances. It is necessary a structured and transparent plan aligned with the strategic planning to ensure that the company is correctly perceived by its stakeholders (Antunes et al., 2015).

2.2. Green Marketing

The concept of Green Marketing was first defined by the American Marketing Association (AMA), which in 1975 presented a workshop on the theme "Ecological Marketing" (Polonsky, 1994). This workshop focused on the impact of products oriented to ecological marketing (Líšková, Cudlínová, Pártlová & Petr, 2016). Subsequently, Henion and Kinnear (1976) used the results of the workshop to create the first book on Green Marketing also entitled "Ecological Marketing".

There are several definitions for Green Marketing, in the social, environmental, and even retailer dimension. According to Líšková, Cudlínová, Pártlová & Petr, (2016), Green Marketing is defined as all the efforts of an organization to produce, promote, pack and retrieve products in a way that is sensitive or responsive to ecological issues.

According to Kumar, Rahman & Kazmi (2013), sustainable marketing has a broader meaning, containing the dimensions of sustainability: economic, social and environmental, also called the triple bottom line.

Kotler & Armstrong (2014) explain that to deliver and communicate the desired position for consumers, the marketing mix must support the chosen positioning strategy. The mix consists of the 4 p's - product, price, place and promotion, involving the development of green positioning strategy (Rex & Baumann, 2007).

According to the research by Dangelico & Pontrandolfo (2010), there are several definitions for green products. Peattie (p.181, 1995) defined as "when its environmental and social performance in the production, use and disposal is better or is better in comparison with conventional products" (apud Dangelico & Pontrandolfo, 2010).

Ottman et al. (p.24, 2006) defined green product as: Although no product has zero impact on the environment, in companies, the term 'green product' or 'environmental product' is commonly used to describe those who exert great effort to protect or improve the environment while conserving energy and / or resources, and reducing or eliminating the use of toxic agents, pollution and waste.

There is still a difference between green marketing and green company. In the view of society, the big global polluters are perceived by the consumer as "environmentally friendly" companies. According to Ottman (p.20, 2011), "unfortunately, at the moment, the term green marketing has the same impact as greenwashing".

2.3. Greenwashing

The term greenwashing comes from the terms "whitewashing" and "brainwashing", which refer to trying to look better and to manipulate beliefs, respectively (Ross & Deck, 2011).

Although it emerged in the 1980s, coined and first accused by activist Jay Westerveld (Pearson, 2010), the term became popular in the 1990s, mainly due to the authors Greer and Bruno (1996), with the book 'Greenwash: The Reality Behind Corporate Environmentalism' which was developed from the Greenpeace report "Book on Greenwash" launched at ECO-92, United Nations Conference on the Environment that was held in Rio de Janeiro in 1992.

Several authors have used the definition of the Oxford English Dictionary (2018), which defines greenwash as disinformation disseminated by an organization to present a public image of environmental responsibility (Seele & Gatti, 2015).

Seele & Gatti (2015) contend that there is no acceptance among the general definition of the term greenwashing, the concept is defined ambiguously as it does not cover the social, economic and environmental scope.

Other authors use the definition provided by Greenpeace, a third sector organization, which defines greenwashing as: the act of mislead consumers about their environmental practices in relation to the environmental benefits of a product or service (Parguel et al., 2015, Chen & Chang, 2011; Delmas and Burbano, 2011; Fliegelman, 2009).

While most of the researchers are based on these two definitions that consider only one element of greenwashing, which is the company's action of a misleading green message, Seele & Gatti (2015) explains that the process of accusation is a central aspect of greenwashing. They define the phenomena as: "Greenwashing is a co-creation of an external accusation toward an organization with regard to presenting a misleading green message" Seele & Gatti, 2015, p. 248). In this paper, we propose a methodology to assist the process of accusation in the definition of greenwashing from Seele & Gatti (2015).

3. GREENWASHING ACCUSATION SCORE

In this section, we describe the greenwashing accusation score. The dimensions of analysis were developed from a systematic literature review that studied several scientific articles related to greenwashing over a period of 10 years.

The dimensions were constructed based on the definitions by Delmas & Burbano (2011) and Parguel et al. (2015). Delmas & Burbano (2015) define the phenomenon in two levels, called product-level and firm-level. Parguel et al. (2015) explain a new dimension of greenwashing that had not been previously observed, called executional greenwashing.

All dimensions have been applied several times in published studies and represent perceptions of the phenomena characteristics in several areas. The dimensions, descriptions and authors are shown in table 1.

Table 1.
The dimensions of G.A.S

Dimension	Description	Authors
Product/Service-Level Claim	Environmental claims regarding a product or service environmental performance.	TerraChoice (2010); Delmas & Burbano (2011); Baum (2012); Markham, Khare & Beckman (2014); Antunes, Santos & Hurtado (2015);
Product/Service-Level Executional	Nature-evoking elements such as images or sounds in the product or service communication execution;	Parguel et al. (2015); (De Jong, Harkink & Barth, 2017).
Firm-Level Claim	Environmental allegations regarding a firm's environmental performance.	Bruno (1992); Delmas & Burbano (2011); Berrone (2016); Contreras-Pacheco & Claasen (2017); Scanlan (2017).
Firm-Level Executional	Nature-evoking elements such as images or sounds in the corporate communication execution.	Parguel et al. (2015); (De Jong, Harkink & Barth, 2017).

Source: The authors.

Product/service-level claim corresponds to environmental allegations which uses textual arguments that explicitly or implicitly refer to the ecological benefits of a product or service.

The environmental marketing firm TerraChoice (2010) created the seven sins of greenwashing to assist identify different strategies of greenwashing. Baum (2012) used the seven sins as a basis for his framework to analyze green advertising. The seven sins are:

- The sin of the hidden trade-off: A claim suggesting that a product is ‘green’ based on a narrow set of attributes without attention to other important environmental issues. (TerraChoice, 2010).
- The sin of no proof: An environmental claim that cannot be substantiated by easily accessible supporting information or by a reliable third-party certification. (TerraChoice, 2010).
- The sin of vagueness: A claim that is poorly defined or too broad, a claim lacking in specifics that its real meaning is inclined to be misunderstood by the consumer. (TerraChoice, 2010).
- The sin of worshipping false labels: A product that, through a false suggestion or certification-like image, mislead consumers into thinking that it has been through a legitimate green certification process. (TerraChoice, 2010).
- The sin of irrelevance: An environmental claim that may be truthful but is unimportant or unhelpful for consumers seeking environmentally preferable products. (TerraChoice, 2010).
- The sin of lesser of two evils: A claim that may be true within the product category, but that risks distracting the consumer from the greater environmental impacts of the category as a whole (TerraChoice, 2010).
- The sin of fibbing: Environmental claims that are simply false (TerraChoice, 2010).

According to Parguel et al. (2015), all of the above are examples of claim greenwashing. Scanlan (2017) proposed new firm-level sins in his study in the oil gas industry communication on hydraulic fracking that are:

- The sin of false hopes: A claim that reinforces a false hope (Scanlan, 2017).
- The sin of fearmongering: Claims that fabricate insecurity related to not "buying in" on an organization practice (Scanlan, 2017).
- The sin of broken promises: Claims promising that a company's practice will lift up poor rural communities with riches from resource rights and economic development (Scanlan, 2017).
- The sin of injustice: Environmental communication that does not speak directly to the most affected communities (Scanlan, 2017).

- The sin of hazardous consequences: Harm done from hazardous consequences.
- The sin of profits over people and the environment: To profit over people and the environment (Scanlan, 2017).

The firm-level dimension corresponds to environmental allegations which uses textual arguments that explicitly or implicitly refer to the ecological benefits of a company performance. Contreras-Pacheco and Claasen (2017) brought five firm-level greenwashing:

- Dirty business: Belonging to an inherently unsustainable business, but promoting sustainable practices or products that are not representative neither for the business or the society (Bruno, 1992).
- Ad bluster: Diverting attention from sustainable issues, through the use of advertising (Bruno, 1992).
- Political spin: Influencing regulations or governments in order to obtain benefits that affect sustainability (Bruno, 1992).
- It's the law, stupid!: Proclaiming sustainability accomplishments or commitments that are already required by existing laws or regulations (Bruno, 1992).
- Fuzzy reporting: Taking advantage of sustainability reports and their nature of one-way communication channel, in order to twist the truth or project a positive image in terms of CSR corporate practices (Berrone, 2016).

Parguel et al. (2015) draws attention in their study to another strategy called executional greenwashing. De Jong, Harkink & Barth (2017), explains that in executional greenwashing "greenness is not explicitly claimed but suggested by peripheral cues such as imagery." (De Jong, Harkink & Barth, 2017, p. 81).

These strategies of greenwashing suggests nature-evoking elements such as images using colors, sounds, backgrounds representing natural landscapes, pictures of endangered animal species or renewable sources of energy (Parguel et al. 2015).

A summary of the questions included in Greenwashing Accusation Score is presented in Table 2. We removed from the questions the sin of profits over people and the environment, proposed by Scanlan (2017), because in all cases of greenwashing this characteristic is present and implicit to the phenomenon.

Table 2.
Dimensions and Questions of G.A.S.

Dimensions	Questions

Product-Level Claim	$q_{pc,1}$: Does the claim suggest that the product or service is green based on a narrow set of attributes without attention to other environmental issues? $q_{pc,2}$: Cannot the claim be sustained by easily accessible supporting information or by reliable third-party certification? $q_{pc,3}$: Is the claim too broad, lacking in specifics, with terms like 'all-natural', 'non-toxic', 'environmentally friendly', 'eco-friendly', or 'eco-conscious' poorly defined? $q_{pc,4}$: Does the claim apply a false suggestion or certification-like image that misleads consumers into a legitimate green certification process? $q_{pc,5}$: Is the claim relevant in the contex? Is unimportant or unhelpful, in a way that it's obvious because exists a regulation from the authorities? $q_{pc,6}$: Does the claim risk distracting the consumer from the greater environmental impacts of the category as a whole, even if it may be true within the product category? $q_{pc,7}$: Is the claim false/untrue?
Product-Level Executional	$q_{pe,1}$: Does the product environmental communication suggest nature-evoking elements such as images using colors (e.g. green, blue), nature landscapes (e.g. mountains, forests, oceans)? $q_{pe,2}$: Does the product environmental communication suggest nature-evoking elements such as images using pictures of endangered species (e.g. pandas, dolphins) or renewable sources of energy (wind, sun)? $q_{pe,3}$: Does the product environmental communication suggest nature-evoking elements such as sounds (e.g. sea, birds)?
Firm-Level Claim	$q_{fc,1}$: Does the claim belong to an inherently unsustainable business, promoting sustainable practices that are not representative neither for the business or the society? $q_{fc,2}$: Does the claim divert attention from sustainable issues, through the use of exaggerated achievements or present alternative programs that are not related to the main sustainability concern? $q_{fc,3}$: Does the claim try to influence regulations or governments in order to obtain benefits that affect sustainability due to the companies character of large taxpayers or employers? $q_{fc,4}$: Does the claim sustain environmental accomplishments or commitments that are already required by existing laws or regulations? $q_{fc,5}$: Does the company take advantage of sustainability reports and their nature of one-way communication channel, in order to twist the truth or project a positive image in terms of CSR practices? $q_{fc,6}$: Does the claim reinforce a false hope? $q_{fc,7}$: Does the claim fabricate a treat or insecurity related to 'not buying in' on an organization practice? $q_{fc,8}$: Does the claim make a broken promise, guaranteeing that an organization practice will provide economic development to the community? $q_{fc,9}$: Does the claim does not speak directly to the communities most affected by its practices? $q_{fc,10}$: Does the claim distracts the public from the dangers caused by hazardous consequences of its practices?
Firm-Level Executional	$q_{fe,1}$: Does the company environmental communication suggest nature-evoking elements such as images using colors (e.g. green, blue), nature landscapes (e.g. mountains, forests, oceans)?

$q_{fe,2}$: Does the company environmental communication suggest nature-evoking elements such as images using pictures of endangered species (e.g. pandas, dolphins) or renewable sources of energy (wind, sun)?
$q_{fe,3}$: Does the company environmental communication suggest nature-evoking elements such as sounds (e.g. sea, birds)?

Source: The authors.

To evaluate all the questions, a binary scale was adopted, where 0 represents the absence and 1 represents the presence. An additional option was also used when the question has no relation, defined as n/a - not applicable. The scale of assessment is set out in Table 3.

Table 3: Scale of Assessment

Scale	Value
Not applicable	n/a
None	0
Present	1

The computation of the possible values of the questions listed was done using the additive model. This model is divided into two stages, the first stage indicates intra-dimensional aggregation, which represents the definition of weights by the decision-maker, represented below by the variable w_i.

$$d_n = \sum_{i=1}^{n} q_i \frac{1}{w_i} \qquad \textbf{[1]}$$

where:

d_n: score of dimension *n*,

q_i: result of the assessment of question *i* of dimension *n*, and

w_i: weight of question *i* of dimension *n*.

In the first stage the weight considered was equal for all questions, but the model supports different weights. In the second stage, all results of each dimension (d_n) were computed in the model represented below, and it was also considered an equal weight for all dimensions. The final result was defined as the Accusation Score (As).

$$As = \sum_{q=1}^{n} d_q \frac{1}{w_q} \quad [2]$$

Therefore, the Accusation Score results in a value ranging from 0 to 1, where 0 represents the absence of what we called 'accusation propensity' and 1 represents a strong accusation propensity. To analyze the possible outputs of the model, an analysis model was constructed with four levels: (1) none; (2) present; (3) moderate; and (4) strong.

The first level, named 'None', shows the total lack of propensity for a greenwashing accusation, that is, there is no feature present in the content of the company's communication.

The second level, 'Present', represents that most of the dimensions had low values, demonstrating a possible greenwashing accusation, where at least one characteristic was identified in the content of the evaluated company's communication.

The third level, 'Moderate' indicates that more than one characteristic was identified in some dimensions, representing a moderate greenwashing accusation propensity. Lastly, the fourth level called 'Strong' indicates that several characteristics were identified in many dimensions, appointing to a strong greenwashing accusation propensity. The four levels are shown in Table 4 below.

Table 4.
Levels of Accusation Propensity

Level	Description
A = 0 None	Total absence of greenwashing accusation propensity.
0 > A <= 0.3 Present	Present greenwashing accusation propensity, at least one characteristic was identified.
0.3 > A <= 0.6 Moderate	Moderate greenwashing accusation propensity, more than one characteristic was identified.
0.6 > A <= 1.0 Strong	Strong greenwashing accusation propensity, several or all characteristics were identified.

Source: The authors.

4. NUMERICAL EXAMPLES

The data collected for the application of the proposed model were extracted from sustainability reports, television advertisement and printed advertisement. Inclusion and qualification criteria were created to define the research sample.

We have chosen sustainability reports, television and print advertisements as inclusion criteria because they were used as data sources in the papers that were selected as theoretical references in the elaboration of the metric model, proposed in this paper (TerraChoice, 2010; Parguel et al., 2015; Berrone, 2016; Scanlan, 2017; Contreras-Pacheco et al., 2017; De Jong, Harkink & Barth, 2017).

The Greenwashing Accusation Score was developed with four different dimensions of analysis, product/service-level, firm-level, claim and executional. We have chosen sustainability reports because they are firm-level communication. To attend the product dimension, we have chosen product advertisements that were displayed on the television or printed in magazines.

In the context of the research, one of the qualification criteria applied was that television and printed advertisements should be related to environmental and/or social issues. Sustainability reports already have this characteristic and companies selected to apply the model should have sustainability reports published on their website and advertise a product considered 'eco-friendly'.

Nowadays, sustainability reports are well known and highlighted at Rio + 20, the world conference on sustainability that occurred in 2012 in Rio de Janeiro, which set the goals of sustainable development with targets to be achieved by 2030. The Global Reporting Initiative - GRI (2018), an independent and non-profit global institution, were established in 1997 with the primary purpose of providing guidelines and standards for companies to disclose sustainability reports to their stakeholders (Global Reporting Initiative, 2018).

Currently the GRI already has more than thirteen thousand registered organizations, with more than thirty-three thousand reports published in more than sixty countries around the world (Global Reporting Initiative, 2018). Among the 250 largest companies in the world, 95% already issue their sustainability reports in GRI standards (Global Reporting Initiative, 2018).

Meeting the pre-established criteria, we have selected sustainability reports from the Coca-Cola Company and Nissan Motor Corporation. A print advertisement of an 'eco-friendly' Coca-Cola product was selected from its portfolio in the sustainability report and an advertisement on television in the USA of an 'eco-friendly' product was selected from Nissan's portfolio present in the sustainability report.

The choice of the selected cases was arbitrary, we selected cases that have issued sustainability reports in GRI. The focus of this study is to propose a greenwashing measurement tool and test it, not to evaluate companies.

5. RESULTS AND DISCUSSION

It was possible to obtain the Greenwashing Accusation Levell (GA) of each selected case with the application of the diagnoses in the research sample. The greenwashing accusation level of each of the four cases was determined through the staged model.

The results of the GA analysis ranged from 0.46 to 0.85. The overall GA of the 4 selected cases was obtained by averaging all GA, resulting in an average of 0.62. These results can be seen in Table 5.

Table 5: Diagnosis of Accusation level

Case	Degree of Accusation	Greenwashing Level
C1	0.46	Moderate
C2	0.85	Strong
C3	0.64	Strong
C4	0.55	Moderate

Source: The authors.

5.1. The Coca-Cola Company

In 2018, Coca-Cola earned a net operating revenue of US$ 31.9 billion and a market capitalization of US$ 202.1 billion. Founded in 1886, The Coca-Cola Company is the largest soft drink company in the world, its products are sold in more than 200 countries (Coca-Cola Sustainability Report, 2018).

Among the most valuable brands in the world, it is ranked fifth, according to a list published in 2018 by consulting company Interbrand. In front of them only technology companies, from the first position: Apple, Google, Amazon and Microsoft (Interbrand, 2018).

5.1.1. C1 - Coca-Cola Life Printed Advertisement

The first case selected was a product of The Coca-Cola Company, which seeking to meet growing consumer demand for healthier and less environmentally harmful products, launched in mid 2013 a new product called Coca-Cola Life, a low-calorie soft

drink sweetened with cane sugar and stevia leaf extract (Coca-Cola Sustainability Report, 2018).

Figure 1. Coca-Cola Life UK Magazine Advertisement

Source: Alamy, 2018.

Coca-Cola Life seems to be very healthy, a low-calorie and naturally sweetened soft drink. However, in a quantity of 250 ml, there is an amount of 17g of sugar, which according to the World Health Organization (2018) the recommended daily dose is 25g, meaning that only one Coca-Cola Life represents almost 70% of the recommended daily dose. Not considering other elements in its formula like coloring and caffeine.

The predominance of evocative green color on the label, and a green background environment, in this case represented by grass, points to elements of executional greenwashing (Parguel et al., 2015; De Jong, Harkink & Barth, 2017). The variable in the model related to executional sounds were considered not applicable in C1 due to its printed advertising characteristic.

The name 'life' makes the association of vitality and health to the product. The company has marketed this new brand of soda as healthy with 'natural' sugar, these words 'life' and 'natural' may represent elements of greenwashing (TerraChoice, 2010).

The result of calculating the greenwashing accusation level in the first case, C1, obtained a value equal to 0.46, indicating a moderate level of greenwashing accusation. Therefore, more than one feature has been identified in some dimensions, in this case in product claim and executional dimensions. The dimensions related to the company were considered not applicable in C1 because of its communication at product level.

5.1.2. C2 - Coca-Cola Sustainability Report

In the SR, we have applied the model considering the two corporate dimensions 'firm-level claim' and 'firm executional'. The product dimensions were considered not applicable in C2. The result of calculating the greenwashing accusation level in C2, obtained a value equal to 0.85, indicating a strong level of greenwashing accusation at firm-level. Therefore, several characteristics were identified in all dimensions, in 'Firm-Level Executional' dimension, the max value was reached.

With the highest value achieved, all elements considered as 'executive greenwashing' were noted in the sustainability report. The use of green color and endangered wildlife imagery was present following the report's allegations.

Several claims were considered half truths and vague, for example: "we are expanding reduced-, low- and no-sugar options across our portfolio." or "18 of our top 20 brands are low- or no-sugar or have a low- or no-sugar option" (Coca-Cola Sustainability Report, 2018). Meanwhile products like Coca-Coca Life are marketed as a green product with a very high sugar ratio compared to the WHO recommendation on daily sugar consumption.

Coke has always been very good at big events. When the climate conference took place in Copenhagen in 2009, Coca-Cola devised a marketing strategy to reinforce the climate-friendly tone of the event. A series of posters featuring a man living in harmony in nature, and below the Hopenhagem heading and the utopian graphics of mountains, forests and flowers, was a bottle of coke with the words 'a bottle of hope'.

In 2015, Coke claimed in its sustainability report that it intended to recover or refill 75% of the bottles and cans introduced in the marketplace by 2020. In 2016, the result was 59%, which remained in 2017 and dropped to 58% in 2018. But this false hope came only for new bottles and cans introduced in the marketplace, not considering existing ones. Now in 2018, coke's SR claims to reach a number of 100% of bottles and cans recovered or refilled by 2030 and makes allegations like: "We believe a World Without Waste is possible".

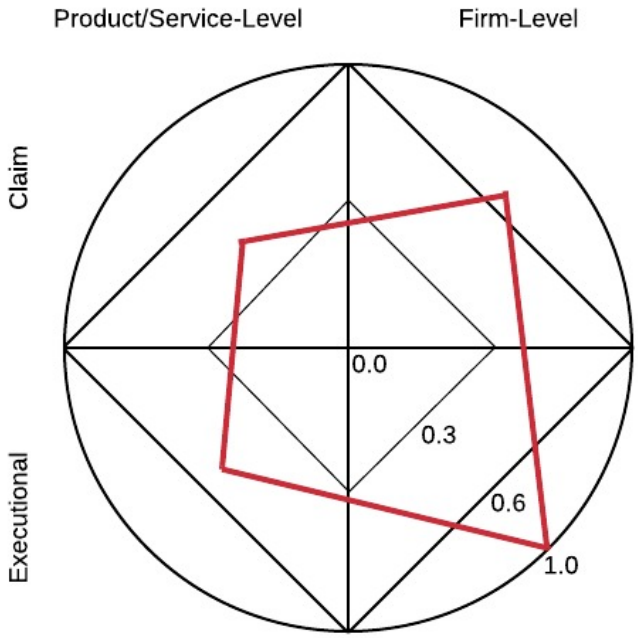
Also present in the report are allegations about the business characteristic of being large employers, large taxpayers, big community investors and others. Which puts pressure on stakeholders, like governments, about business continuity and growth.

Coke is committed to reducing its emissions by 5 percent, but only in industrialized countries. In developing countries, where it is growing the most, the strategy is to stabilize.

Importantly, this objective also applies only to 'manufacturing emissions' which is irrelevant in comparison to the retailers' millions of HFC cooling machines (Pearse, 2014).

Figure 2 shows the greenwashing accusation map applied at Coca-Cola Company, with C1 at product level and C2 at company level.

Figure 2. Polar GAS Map of the Coca-Cola Company



Source: The authors.

Each vertex of the map represents the greenwashing accusation in a given dimension. As shown in Figure 2, the dimensions that stood out were 'Firm-Level Executional' (1.0) and Firm-Level Claim (0.7). This indicates a higher value of Firm-Level dimension in comparison to Product-Level, which might suggest that the company adopts more greenwashing practices at Firm-Level rather than Product-Level.

When averaging between C1 and C2 results, we have a value for the overall assessment of the organization, which was 0.65. This score points to a strong level of greenwashing charges.

5.2. Nissan Motor Corporation

In 2018, Nissan earned a net sales of US$ 107 billion. Founded in 1933 in Japan, the Nissan Motor Company is one of the largest motor companies in the world, its products are manufactured in 20 countries and their products and services are offered in more than 160 countries around the globe (Nissan's Financial Report, 2018). Among the

most valuable brands in the world, it is ranked fortieth, according to Interbrand's 2018 Best Global Brands report.

5.2.1. C3 - Nissan Leaf - Television Advertisement

In 2010, the Japanese automaker launched the Nissan Leaf, marketed as a green car, a fully electric vehicle. Since it was introduced to the market until now, they have already sold more than 400,000 units of the vehicle, the vast majority were sold in the United States. (Nissan, 2019).

Shown in figure 3, the Nissan Leaf commercial exhibits a polar bear fleeing its natural habitat due to melting glaciers, and walking to a North American suburb to give a warm hug to a Nissan Leaf owner. At the end of the ad, is made claims like "100% electric" and "Innovation for the planet, innovation for all".

Figure 3. Nissan Leaf Television Advertisement in USA

Source: Pearse, 2014.

These allegations do not have false information, but Nissan is telling only part of the story. When Nissan claims that all Nissans Leaf are 100% electric and that there are no tailpipe emissions, they are not telling false information. However, plenty of electricity used to power these vehicles comes from stations that operate on fossil fuels. Especially in the United States where more of the fleet operates. This might indicate the presence of the sin of hidden-trade off (TerraChoice, 2010).

In this context these allegations are half truths and Leaf generates greenhouse gas pollution from fossil fuels, just not from the tailpipe. When Nissan makes the ad ending claim "Innovation for the planet, innovation for all" they don't explain that the vast majority of its portfolio is fossil fuel-powered, so probably they are just innovating for all.

All elements of executional greenwashing were present in the add, to environmental background and color, a polar bear as the main character, to nature-evoked sounds. The name of vehicle, Leaf, are related to nature, to the green color of plants, which is another possible greenwashing strategy in the product.

As in C1, only product dimensions were applied, the result of calculating the greenwashing accusation level obtained a value equal to 0.64, indicating a very strong level of greenwashing accusation at product-level. Several characteristics were identified in 'Product/Service-Level Claim' dimension. In 'Product-Level Executional' dimension, the max value was reached.

5.2.2. C4 - Nissan Sustainability Report

In 2018, Nissan's sustainability report, allegations such as "lead the world toward the realization of zero-emission, zero-fatality society"; "realizing a zero-emission, zero-fatality society"; "zero emissions and zero fatalities through Nissan Intelligent Mobility ..." etc, were repeatedly made.

The company promises to reduce carbon dioxide emissions by 40% in new cars and 30% in carbon emissions from corporate activities by 2022. By 2050, 90% reduction in emissions from new cars and 80% from corporate activities (Nissan, 2019).

As shown in figure 4, the company's main promises are bold. On the other hand, they also claim that the ratio of women in managerial positions will be 13 % in Japan and 16 % Globally by 2023. At long-term they make no claims about it, just a general promise about diversity and inclusion, which isn't bold at all.

Figure 4. Nissan's Claims Example

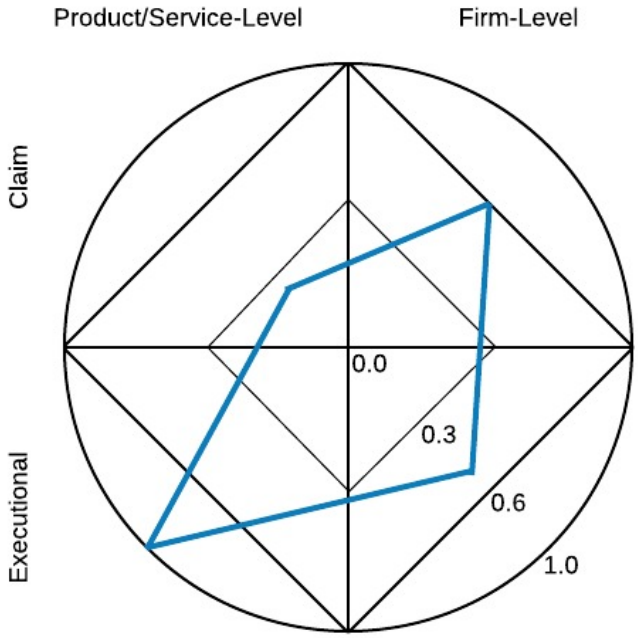
Source: Nissan Sustainability Report, 2018.

While the company claims it is 'Realizing a zero-fatality society', in late 2018, the organization announced the recall of 150,000 cars for nonconformities involving inspections on brakes, steer wheels, speed gauges and vehicle stability. Since October 2017, the automotive company has recalled more than 1 million vehicles (Kelly, 2018).

The "Realizing a zero-emission" claim is not very accurate as it only includes new vehicles, leaving out the millions of vehicles already on the market-place. In relation to electric vehicles, as discussed in C1, it does not consider the process of electric power generation in coal-fired power plants as other components of the vehicle, for example the tires and batteries. This statement does not seem consistent when most vehicles sold by the company are powered by fossil fuels.

Like in C2, only firm-level dimensions were applied. The score was 0.55, indicating a strong level of greenwashing accusation at firm-level. Therefore, some characteristics were identified in 'Firm-Level Claim' dimension and 'Firm Executional'. In figure 5, these values are visually shown.

Figure 5. Polar GAS Map of the Nissan Motor Corporation



Source: The authors.

As shown in the map, the dimensions that stood out were 'Product-Level Executional' (1.0) and Firm-Level Claim (0.6). This indicates a higher value of 'Product-Level Executional' dimension in comparison to Firm-Level, and a higher value of 'Firm-Level Claim' dimension in comparison to 'Product/Service-Level Claim'. These results might suggest that the company adopts more executional greenwashing practices at Product-Level and more claims at Firm-Level.

When averaging between C3 and C4 results, we have a value for the overall assessment of the organization, which was 0.59. This score points to a moderate level of greenwashing charges.

6. CONCLUSION

In this paper we propose a model to measure the accusation level of greenwashing, based on the development of the concept of greenwashing. According to Seele & Gatti (2015), greenwashing cannot only be defined as a deliberate misleading communication action by an organization, the accusation process is a central aspect.

In a high level of third-party scrutiny situation, misleading corporate claims and executional elements are more likely to lead to accusations of greenwashing and to result in a negative effect on corporate legitimacy. As the accusation is a critical element that alters the effects of corporate communication, Seele & Gatti (2015) argues that by

increasing the scrutiny level we can prevent greenwashing.

To help increase corporate scrutiny and assist stakeholders to identify the phenomenon, the main objective of the work, we have successfully applied the Greenwashing Accusation Score to two major multinational companies, The Coca-Cola Company and Nissan Motor Corporation. The results were calculated and pointed several scores in the studied dimensions, indicating different levels of accusation of greenwashing among the analyzed cases.

Nature-evoked executive elements stood out in the scores pointing to a greater presence of this type of strategy. Possibly, a explanation is that this kind of accusatory element is easier to hide from regulations that mainly regulate green claims.

As a limitation, the GAS runs on single-decision maker evaluations. This may promote a set of biases. Which, can be minimized by carefully choosing expert decision makers as well as involving multiple decisors evaluations.

For future work, the model could be applied to non-expert greenwashing consumers and to expert greenwashing consumers groups to compare the difference between them. A large number of companies from several sectors could be used to compare the whole sector score with each company's score and also compare the score variations between sectors.

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APPENDIX

GAS Questions Results

	C1 - Coca-Cola Life	C2 - Coca-Cola SR	C3 - Nissan Leaf	C4 - Nissan SR
qpc1	1	n/a	1	n/a
qpc2	0	n/a	0	n/a

qpc3	1	n/a	0	n/a
qpc4	0	n/a	0	n/a
qpc5	0	n/a	0	n/a
qpc6	1	n/a	1	n/a
qpc7	0	n/a	0	n/a
qpe1	1	n/a	1	n/a
qpe2	0	n/a	1	n/a
qpe3	n/a	n/a	1	n/a
qfc1	n/a	1	n/a	1
qfc2	n/a	1	n/a	1
qfc3	n/a	1	n/a	0
qfc4	n/a	0	n/a	0
qfc5	n/a	1	n/a	1
qfc6	n/a	1	n/a	1
qfc7	n/a	0	n/a	0
qfc8	n/a	1	n/a	1
qfc9	n/a	0	n/a	0
qfc10	n/a	1	n/a	1
qfe1	n/a	1	n/a	0
qfe2	n/a	1	n/a	1
qfe3	n/a	n/a	n/a	n/a

4. CONCLUSIONS AND LIMITATIONS

To achieve the first two objectives of the work, a systematic review was performed, which through a rigorous selection of articles in the indexed databases, identified the main definitions used by the researchers. Most researchers are based on the definitions of the Oxford English Dictionary (2018) and TerraChoice (2010) which defines the phenomenon as a deliberate act of misleading by the organization, presenting a high environmental performance.

Seele & Gatti (2015), using a theoretical approach based on the theories of legitimacy and signaling, explains that the accusation of greenwashing by a third party is an essential element in the phenomenon process and they add this element in the phenomenon definition.

Different approaches to the definition of greenwashing were highlighted by the review, as limitations, we identified words that were outside the search string that could have been included, these keywords were identified throughout the review construction process.

The second objective of the research identified the main characteristics of the phenomenon and its dimensions. Several characteristics were highlighted and four dimensions were built from the review, which served as a theoretical basis for the construction of the third specific objective that proposes a measurement tool to assist in the accusation process of the phenomenon.

To help increase stakeholder scrutiny in relation to greenwashing and assist in the identification of the phenomenon, a model based on the constructed dimensions was proposed. The model called 'The Greenwashing Accusation Score' was built and applied in two multinational companies. The model brings as an academic contribution a new vision to measure the phenomenon of greenwashing, including a new structuring of analysis dimensions.

G.A.S. proved effective and the results pointed to a higher score on product-level and firm-level executional greenwashing dimensions. Which may indicate a preference of organizations for the use of executional elements over claims, possibly because regulation focuses on textual communications. This conclusion suggests a greater attention from regulators to this specific greenwashing practice, which uses nature-evoked executional elements.

As a limitation of the work, the model runs on individual decision making assessments, this can promote a number of biases. To minimize bias a new model can be built by running expert and non-expert group decision-making assessments

For future work, the model can be applied to a larger number of companies from many different segments to compare differences between sectors and between companies and the average of their sector. The model can be applied with temporal cuts to compare the evolution over time.

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