



## THE HIATUS BETWEEN ATTITUDE AND BEHAVIORAL INTENTION IN SUSTAINABLE CONSUMPTION: AN APPROACH USING A NECESSARY CONDITIONS ANALYSIS

<sup>A</sup>Flávio Santino Bizarrias  
<sup>B</sup>Jussara da Sila Teixeira Cucato  
<sup>C</sup>Marlette Cassia Oliveira Ferreira  
<sup>D</sup>Jussara Goulart da Silva

### ABSTRACT

**Objective:** to investigate the gap between consumers' attitudes and their intention to purchase sustainable products by analysing the necessary conditions for sustainable consumption.

**Method:** An analysis of necessary conditions was carried out based on latent scores from structural equation modelling based on partial least squares, PLS. The sample was obtained through a survey of potential consumers of sustainable products.

**Main results:** The study confirmed all the hypotheses, providing evidence of the level of need in relation to the variables of information, attitude and sustainable marketing strategies for sustainable consumption to occur.

**Relevance/originality:** Despite the growing number of studies on sustainability, there is still a need to understand the gap in the consumption of sustainable products. This study is a pioneer in establishing levels of need for the predictors that should predict the relationship between attitude, intention and behaviour.

**Theoretical/methodological contributions:** This study advances existing knowledge on the gap between attitude and intention in the consumption of sustainable products through the necessary conditions of antecedents of sustainable consumption, adding as a perspective the levels of occurrence of predictor variables.

**Keywords:** Attitude. Sustainable consumption. Purchase intention. Attitudes. Analysis of necessary conditions.

**Received on:** May/24/2024

**Approved on:** August/08/2024

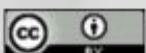
**DOI:** <https://doi.org/10.37497/2965-7393.SDGs-Countries.v6.n00.53>

<sup>A</sup> Escola Superior de Propaganda e Marketing (ESPM), São Paulo (Brazil). Orcid: <https://orcid.org/0000-0001-5574-7820> Email: [flavioxsp@hotmail.com](mailto:flavioxsp@hotmail.com)

<sup>B</sup> Escola Superior de Propaganda e Marketing (ESPM), São Paulo (Brazil). Orcid: <https://orcid.org/0000-0002-2805-5789>

<sup>C</sup> Instituto Federal de Educação, Ciência e Tecnologia de São Paulo, São Paulo (Brazil). Orcid: <https://orcid.org/0000-0002-9506-9785>

<sup>D</sup> Universidade Federal de Uberlândia -UFU, Minas Gerais (Brazil). Orcid: <https://orcid.org/0000-0003-1499-4811>





## 1. INTRODUCTION

Much has been discussed in academic circles and in everyday life about the changes in the environment and the environmental problems the planet is facing and their impact on people's daily lives. Phenomena such as floods, landslides, water and energy shortages, air, river and soil pollution, among many other problems that drastically jeopardise the quality of life and survival of people, animal and plant species, are increasingly present in today's discussions. Historically, human beings have been inclined to over-exploit nature and degrade the environment, as they have always used natural resources without any restrictions, wasting what they thought they had 'left over'. It is believed that environmental impacts (Eduardo, Ênio, Severo & Dorion, 2024) and deterioration are caused by the behaviour, attitudes and values of human beings in the pursuit of economic development (Keinert, Karruz, 2002)

This suggested contradiction between quality of life and economic development and the role of consumers in this process motivated this research. This study aims to analyse consumer behaviour in relation to environmental issues, such as their attitudes and intentions, under the influence of green marketing strategies such as communication through the provision of information and the development of stimuli on environmental issues.

The number of people concerned about environmental issues has increased, and organisations have been looking for green marketing strategies to adjust to new consumer expectations, as well as to meet the demands of environmental laws that encourage or even oblige companies to contribute to the environment, mitigating environmental impacts, such as reducing solid waste, collecting used packaging, disposing of products correctly and reducing the emission of polluting gases into the atmosphere. A major current challenge is to make consumers aware of the planet's environmental crisis to the point where this awareness can be converted into a change in consumer behaviour, habits, attitudes and lifestyles, aimed at sustainable consumption. There has been some public and private investment in programmes and incentives aimed at environmental awareness and preservation in these regions, such as the emergence of NGOs and awards for sustainable cities (Bizarrias, 2024). However, have consumers noticed and become aware of these actions to the point of adopting sustainable behaviour? Does green marketing actually influence the consumer purchasing process? These questions form the basis of this discussion..





This research is characterised as exploratory and descriptive of a quantitative nature, and was divided into two distinct phases: the first phase, exploratory in nature, involved drawing up the data collection instrument and surveying secondary sources, such as specific bibliographies, articles, websites and the search for a theoretical framework to support the study's objectives. In the second phase (descriptive phase), field research was carried out and structured questionnaires were applied via the Internet, with the data analysed using a necessary conditions analysis.

The main result of this study was to ascertain the level necessary for sustainable consumption to occur, in terms of information, green marketing strategies and sustainable attitudes. The formation of attitudes involves the retrieval of information from memory, the frequency with which this occurs and the subjective importance of the values associated with what is evaluated, or the object of the attitude. In this study, both sustainable products and sustainable behaviours are attitude objects (Azjen, Fishbein, 2005).

This work has been structured into eight sections. Firstly, there is this introductory section, followed by a literature review on the topics of Attitudes, Green Marketing, Consumer Behaviour and Sustainability. The fifth section contains the research's methodological procedures. The data is then analysed and discussed, followed by the final considerations and references.

## 2. THEORETICAL FOUNDATIONS

### 2.1 Marketing and sustainable marketing

Companies are increasingly realising the importance of developing strategies and projects focused on sustainability (Guimarães, Severo & Dorion, 2022) and green marketing, given the ecological crisis facing the planet, as well as the constant growth of the public focused on preserving the environment. Bearing in mind that consumers are increasingly concerned about environmental sustainability and a better quality of life, new opportunities have arisen for the launch of environmentally sustainable products. And in order to respond to the wishes of this group of consumers and create new competitive advantages, strategies have been developed that focus on environmental issues, known as 'green marketing strategies'.

Green marketing is a set of marketing strategies and policies used to develop an organisation's sustainable communication in order to captivate a certain audience, thus





increasing its market share and consolidating its strategic positioning, with a view to differentiating its products and developing a sustainable competitive advantage (Silva et al, 2009). In this sense, green marketing has been disseminated to establish ethical environmental values in organisations through the invention and dissemination of new goods and services, where demand is subject to the consumer's ecological awareness.

It is notable that humanity has undergone a great deal of development and man's needs have turned to the survival of the species. Regulatory bodies for the marketing practices of organisations and citizens have been developed as a way of mitigating the excessive and harmful consumption of products and actions that damage the environment. In recent years, problems related to air and water pollution and the disposal of solid waste have sensitised people, companies and governments to take action regarding the inappropriate handling of products that harm nature (Azevêdo et al, 2007).

An important fact is that green or environmental marketing is not only of interest to environmental organisations, which are active worldwide with the aim of safeguarding ecological and social balance, but also to companies that are willing to support and develop activities that seek to mitigate or eliminate the causes of environmental degradation and thus improve everyone's quality of life as a business model. It is noticeable that companies are more concerned with their institutional image than their concern for the planet (Zenone, 2006).

Green marketing has emerged to help companies' profitability and improve their image through more conscious practices (Almendrea, 2012). Companies assimilate Green Marketing as a strategic tool, positioning their products in the so-called 'green line', in which products/services are perceived as less harmful to the environment (Azevêdo et al, 2007).

In short, the main purpose of green marketing is to show consumers that an ecologically correct choice is very beneficial for consumption, given that the damage caused to the environment decreases, and consequently people's quality of life improves (Azevêdo et al., 2007). Through green marketing practices, companies publicise their environmental actions and seek to sensitise their customers and everyone else so that they too are willing to take part in these actions, considering that it is everyone's responsibility to preserve the environment (Lima & Ribeiro, 2023; Machado et al., 2024; Malaguti & Avrichir, 2023; Ribeiro & Lima, 2022). This is a developing belief.

The occurrence of information about sustainability is expected to be necessary for sustainable attitudes and behaviour. Sustainable action by consumers cannot be conceived





without information. Sustainable consumption cannot do without information about sustainable products. Disseminating information about sustainability is crucial to fostering sustainable attitudes and behaviour. Initially, awareness and education are fundamental; without knowledge of the environmental and social impacts associated with consumption, individuals remain unaware of the consequences of their actions. Relevant information not only sheds light on the problems, but also highlights ways to change, encouraging responsible practices. Furthermore, informed decision-making is essential in a market saturated with options. Without clear information about the sustainability of products, consumers struggle to make choices in line with their values, often inadvertently supporting unsustainable practices. The transparency offered by companies not only clarifies these choices, but also builds a bridge of trust, assuring consumers that their decisions support ethical initiatives.

This knowledge also empowers consumers, allowing them to exercise their purchasing power in a meaningful and responsible way. This empowerment can change the dynamics of the market, generating a growing demand for sustainable products and services and encouraging companies to adopt greener and more ethical methods. On the regulatory front, reliable and robust information is the backbone of effective policies and regulations. It allows policymakers to fully understand the impacts of various practices and to develop laws that promote sustainability and responsibility. In this sense, the proliferation of this information supports the development and adoption of sustainable standards and seals, guiding consumers in their choices and establishing benchmarks for companies. Information, therefore, is not just a resource; it is a catalyst for transformation towards more sustainable practices. The absence of this information not only perpetuates ignorance, but also stalls progress towards a more sustainable and ethical future. With this in mind, we propose the first hypothesis of this study:

H1↑nc: Information about sustainable products is a necessary condition for sustainable consumption to occur.

## 2.2 The hiatus between attitude and behaviour

Attitudes establish a relationship of closeness to or distance from the object being evaluated (Krosnick, Judd and Wittenbrick, 2005). Eagly and Chaiken (1993, p.1) define attitude as a "[...] psychological tendency that is expressed by evaluating a particular entity with some degree of favour or disfavour". Attitudes are based on information, therefore, whether it is





externally salient or accessed through the representation of the object in memory (Albarracín et al, 2005). This representation in memory can be stored for later evaluation even if we are not fully aware of it (Albarracín et al, 2005). External sources of information can be initiatives by organisations, such as communication campaigns, or news reports. In addition, consumers themselves are a source of information through their memory and previous behaviour (Blackwell, Miniard and Engel, 2008). Most of the time, attitudes are measured by means of preferences, whether for the brand, the value attributed to it or for some other reason. Preferences are ways of composing attitudes about one object over another. However, the fact that consumers prefer a certain product does not mean that they intend to buy it or that they will actually buy it. Attitudes can predict intention and intention can predict short-term behaviour (Bagozzi, 1981).

For Azjen and Fishbein (2000), attitudes can be divided into two parameters: attitude towards the object - refers to the object as a product, questioning which product they prefer more - and attitude towards behaviour - is strongly related to intentions, evaluating whether buying a certain product is bad or good.

The formation of attitudes is often strongly influenced by adverts and advertisements, because when a product is exposed through the media, consumers form their beliefs about the product's attributes and establish a subjective importance for each attribute.

Attitudes can change according to the way they are constructed, being more susceptible to change when faced with indirect experiences (such as seeing an advert or hearing about it) and less susceptible to direct experiences with the object, causing "[...] attitudes that are firmer and more resistant to change" (Blackwell, Miniard and Engel, 2008, p. 300).

In studies related to marketing and with more specific objectives in relation to favourable attitudes towards the environment, this relationship is present. People with a more positive ecological attitude show that they behave in a way that is more favourable to the environment or ecology. The intrinsic relationship between attitude and behaviour in the context of sustainable consumption is fundamental and cannot be underestimated. Without a favourable attitude towards sustainability, it is unlikely that consumer behaviour in line with these values will emerge. Attitudes act as the foundation on which behaviours are built; they shape our perception, inform our choices and directly influence our actions. Therefore, a positive predisposition towards sustainability is crucial for sustainable consumption practices





to materialise.

In this context, it is considered that only with a favourable attitude towards sustainability will individuals be predisposed to adopt sustainable consumption practices. This means that the change in behaviour starts at the psychological level - a change in mentality and values which, in turn, translates into tangible actions. Without this favourable attitude, sustainable practices will remain abstract and disconnected from the consumer's everyday reality. Furthermore, it is established that the absence of a favourable attitude towards sustainability results in a gap between knowledge about sustainable practices and their implementation. Even when consumers are aware of the benefits and needs of sustainable consumption, without a positive attitude, this awareness rarely translates into action. Attitude acts as a filter through which knowledge and awareness must pass in order to become effective behaviour. In other words, it is suggested that sustainable consumption is intrinsically dependent on a sustainable attitude. This means that without a genuine and profound change in attitudes towards sustainability, any attempt to adopt sustainable consumption practices will be superficial and short-lived. Sustainability should be seen not just as a choice or preference, but as an intrinsic value that guides all consumption decisions.

Therefore, attitude is not just a precursor, but an essential component for the emergence and maintenance of sustainable consumption behaviour. For society to move towards sustainability, it is crucial to cultivate attitudes that favour this transformation, creating fertile ground where sustainable consumption practices can flourish and sustain themselves over time.

H2↑nc: A favourable attitude towards sustainability will be a necessary condition for sustainable consumption to occur.

### 2.3 Green marketing strategies and the consumer

People have different ways of perceiving the world around them (Bagozzi, Gürhan-Canli, Priester, 2002) and interpreting the things that surround them. It is essential to study consumer perception. When creating and launching a product, an advertisement or carrying out any marketing activity, the opinion and perception of the consumer must be taken into account. This will often directly affect the image of the product and the company in a positive or negative way. Bagozzi, Gürhan-Canli, Priester, (2002) explain that perception is the procedure whereby





a person selects, organises and interprets the information received and thus creates an idea and gives meaning to the world.

In addition to physical stimuli, perception depends on the relationship between these stimuli and the person's internal conditions and the environment. Perception is strictly down to the individual, where the way they perceive and absorb information will define their attitudes and preferences. Kotler (2006) exemplifies that one consumer may perceive a fast-talking salesperson as false and aggressive; another may see the same salesperson as helpful and intelligent. People can have different perceptions of the same object due to three processes: selective attention, selective distortion and selective retention.

The perception of sustainable actions implies that the consumer will devote cognitive, affective and behavioural resources to evaluating these green marketing strategies. On the basis of these perceptions, they will construct the world around them with the meaning of environmental actions in their lives, reflecting their consumption responses. This leads us to formulate the other hypotheses of this study.

The absence of green marketing strategies leads to a lack of sustainable consumption is based on the premise that awareness and appeal are critical drivers of consumer behaviour. Without green marketing strategies, consumers may remain unaware of the sustainable options available or the importance of choosing them.

Green marketing plays a crucial role in highlighting the benefits of sustainable products and services, educating consumers about environmental impacts and making the sustainable choice an attractive and accessible option. It serves not only to inform, but also to persuade and motivate consumers to make better choices for the environment. On the other hand, the presence of green marketing strategies is generally linked to an increase in sustainable consumption. When companies adopt green marketing, they communicate their commitment to sustainability, influencing consumer perceptions and decision-making. This type of marketing can transform the market by creating a demand for green products, encouraging competitors to also adopt sustainable practices. It can change consumer preferences and norms, making sustainability a desirable attribute in products and lifestyles. However, the argument that sustainable marketing strategies cannot be replaced to enable sustainable consumption highlights a deeper truth. Whilst green marketing is a powerful tool, it is not a panacea. It must be genuine and backed up by truly sustainable business practices; otherwise, it risks falling into the realm of greenwashing, where marketing is more about the







perception of sustainability than actual sustainable practices. Furthermore, sustainable consumption is a multi-faceted issue that requires more than just marketing. It needs supportive policies, educational systems and cultural changes, as well as genuine and transparent marketing, to create a society that values and practices sustainability.

So while green marketing strategies are vital to promoting sustainable consumption, they must be part of a broader, integrated approach. Without them, there is a significant barrier to the adoption of sustainable practices by consumers. However, they alone cannot achieve sustainable consumption; they must be accompanied by real sustainable practices and wider social changes to effectively drive change towards a more sustainable future.

H3↑nc: Green marketing strategies are a necessary condition for sustainable consumption.

## 2.4 Proposed model

Based on the previous discussion, a model was proposed to be tested in this study, assessing the conditions necessary for sustainable consumption to occur, based on information antecedents and green strategy, and the attitude gap towards sustainability as an intermediary in this process. The model proposed in the previous discussion provides an intriguing analytical framework for understanding sustainable consumption, integrating essential elements such as information antecedents, green strategy and the attitude gap towards sustainability.

Initially, the model emphasises the importance of information antecedents, suggesting that access to detailed and transparent information about products, including origin, production methods and environmental impacts, is key to empowering consumers to make more sustainable choices. Figure 1 shows this model.



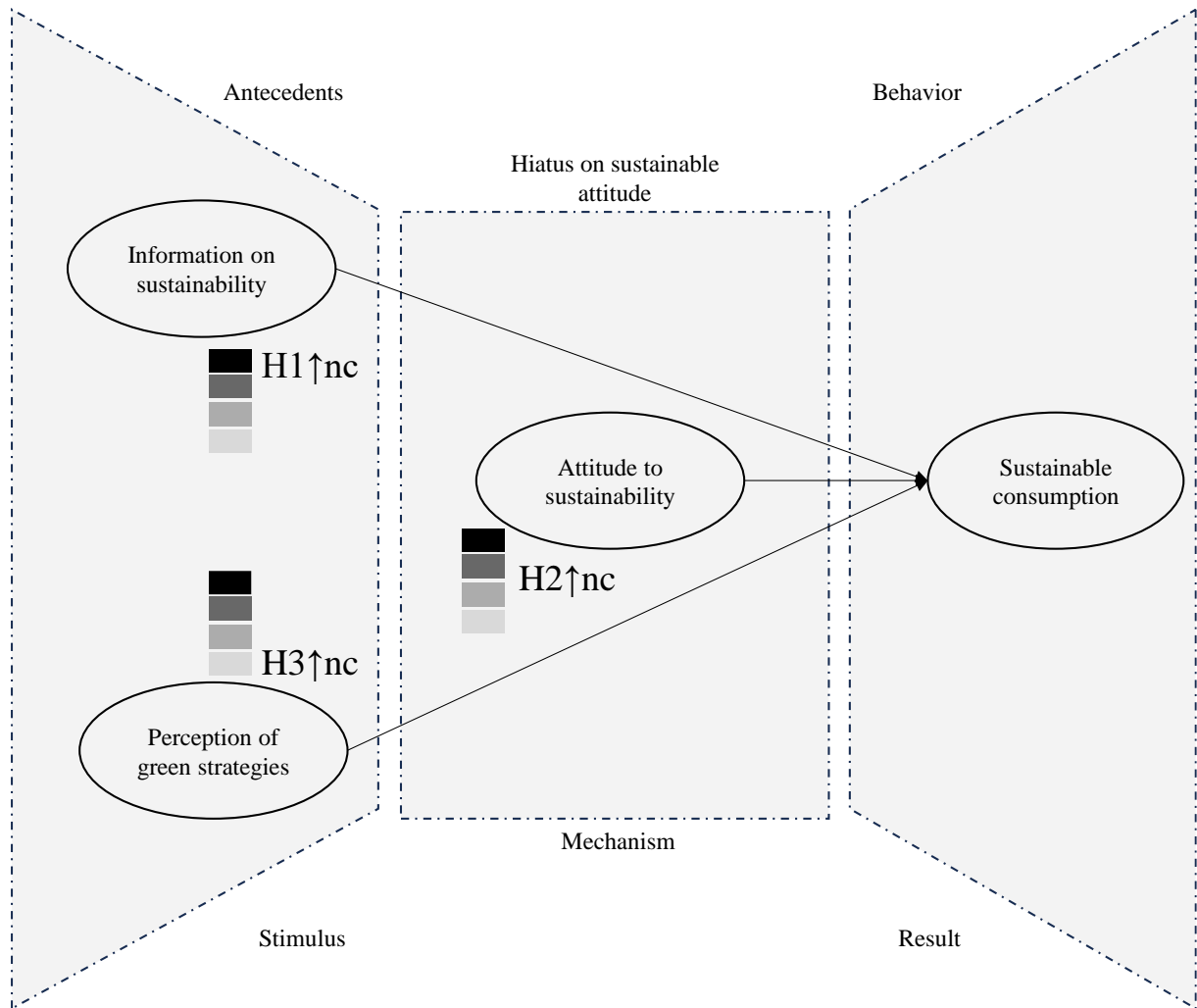


Figure 1. Proposed model

Note: nc = necessary condition

The model also emphasises the importance of the green strategies adopted by companies. These strategies can range from the use of recyclable materials and emission reduction practices to the implementation of energy efficiency and social responsibility policies. These practices not only contribute to environmental sustainability, but can also positively influence consumer perceptions and encourage more responsible purchasing decisions.

Another crucial aspect of the model is the consideration of the attitude gap towards sustainability, as a facilitating mechanism for sustainable behaviour. This gap reflects the discrepancy between consumers' favourable attitudes towards sustainability and their actual actions. Factors such as cost, convenience and the availability of sustainable options can influence this gap, preventing pro-sustainability attitudes from translating into consistent



consumer behaviour. To test this model, it would be essential to collect and analyse data on consumer attitudes, their consumption practices and the level of information they have on sustainable issues. In addition, an examination of companies' green strategies and how they impact consumer behaviour would be necessary. Methods such as questionnaires, interviews and analysing consumer data can be used in this process.

Validating this model can offer valuable insights for companies and policymakers. It can guide companies to align their marketing and production strategies with customer expectations regarding sustainable consumption. For policymakers, the model can indicate areas where education and regulation would be most effective in promoting sustainability. This model presents a comprehensive approach to understanding the factors that influence sustainable consumption and can have significant implications for business practices and public policy, based on an observation of higher-order factors (those that are more general and comprehensive) of the sustainable consumption phenomenon.

### 3. METHOD

To carry out this quantitative research, a survey was applied via the Internet. The sample was approached at higher education institutions, with a data collection instrument for the variables Attitudes towards sustainable consumption, Sustainable consumption, Perception of sustainable product strategy, Intention to buy sustainable products, as well as demographic variables, obtaining 328 valid questionnaires.

The scales were based on Silva (2012), Bedante (2004), Lages and Neto (2002), Enoki et al (2008), Peterson and Wilson (1985 cited by Bruner, Hensel and James, 2005). To analyse the statistical data, the latent scores of the relationship between the study variables were obtained, with sustainable consumption as the dependent variable based on structural equation modelling based on partial least squares, PLS (Ringle and Wende, 2010).

In order to investigate the objective of the study, a Necessary Conditions Analysis (NCA) was carried out (Dul, 2016). Necessary conditions analysis is a methodological approach used in various fields of study, including the social sciences, business and health, to determine whether certain factors are essential for the occurrence of a particular outcome. Unlike analyses that look for sufficient conditions, where the presence of a factor guarantees an outcome, the analysis of necessary conditions seeks to understand which elements must be





present for an outcome to occur, even if their presence alone does not guarantee it.

The assumptions of this analysis are fundamental to its understanding and correct application. Firstly, it is assumed that there is a relationship of dependence between the conditions and the result. In other words, without the necessary condition, the desired result simply cannot occur. However, it is important to recognise that these necessary conditions may not be sufficient on their own. Often, several necessary conditions must combine to produce the result. Furthermore, it is assumed that these conditions are identifiable and measurable in some way, allowing them to be analysed and understood.

In the context of sustainable consumption, the analysis of necessary conditions can be applied to identify which factors are indispensable for promoting and maintaining responsible and ecological consumption practices. Consumers need information (Oehler & Wendt, 2017). The combined use of PLS-based structural equation modelling with necessary conditions analysis allows for a robust approach to the phenomena of interest in which not only direct relationships are observed, but also at what level the variables of interest must manifest themselves for the dependent variable to also occur (Richter et al., 2020, 2023).

For example, awareness of environmental issues can be seen as a necessary condition for sustainable consumption. Without a basic level of understanding and concern for the environment, consumers are unlikely to adopt sustainable practices. Another possible necessary condition could be the availability of and access to sustainable products, or the consumer's attitude towards sustainability, as well as organisations' strategies for promoting sustainable products. If consumers don't have access to sustainable alternatives, or if these alternatives are too expensive or inconvenient, sustainable consumption may not occur. In addition, government policies and regulations that encourage sustainable practices can also be seen as necessary conditions, providing the framework and incentives for both consumers and companies to adopt more sustainable behaviours.

Applying this analysis to sustainable consumption can offer valuable insights for policymakers, companies and activists. By identifying the necessary conditions, they can develop more targeted and effective strategies to promote sustainability. This could include education campaigns to raise awareness, changes in legislation to facilitate sustainable practices or incentives for developing and marketing eco-friendly products. In short, analysing necessary conditions offers a powerful tool for understanding and promoting sustainable consumption, addressing the roots of the problem and identifying the most critical levers for





change.

Analysing necessary conditions is a technique that identifies elements that are indispensable for a certain outcome to occur. It investigates which factors must be present for an outcome to occur, although their presence alone does not guarantee that outcome. The process involves defining the desired outcome, collecting and analysing data to detect consistent patterns, and checking which conditions are always present when the outcome is achieved. This analysis is useful for understanding essential components in complex contexts, but it does not address the sufficiency of such conditions.

## 4. RESULTS

### 4.1 Characterisation of the sample

Of the 328 valid responses, 52 per cent of respondents were female and 48 per cent male. Almost all of the respondents have incomplete higher education qualifications. The income of the sample is primarily that of people in classes B and C. All those interviewed said they had environmental concerns when making consumption decisions.

### 4.2 Latent scores

The SmartPLS4 software (Hair et al, 2022) was used to obtain the latent scores, using structural equation modelling (Ringle and Wende, 2010). In structural equation modelling, which is an advanced statistical technique used to analyse complex relationships between observed and latent variables, latent scores play a fundamental role. In essence, latent scores are estimated values for latent variables, which are factors that are not directly observable or measurable, but are inferred from observed variables or indicators. Latent variables are abstract concepts such as intelligence, attitude or satisfaction, which cannot be measured directly with a single question or observation. Instead, they are constructed from multiple observed variables that are believed to be manifestations of that latent concept (Richter et al, 2020). For example, customer satisfaction can be a latent variable inferred from answers to questions about service quality, price and customer support.

Latent scores are then the numerical estimates of these abstract constructs for each individual or unit of analysis. They are derived through models that relate the latent variables





to their corresponding observed variables, often using methods such as maximum likelihood or least squares. These scores represent the position or level of each individual in relation to the underlying latent factor, providing a basis for subsequent analyses.

In practice, understanding and utilising latent scores allows researchers and analysts to work with complex and abstract concepts in a quantitative way, paving the way for deeper insights into causal relationships, patterns and impacts in areas as diverse as psychology, marketing and the social sciences. By enabling a more precise and richer analysis of complex data, latent scores are essential tools in structural equation modelling (Richter et al, 2023).

### 4.3 Necessary condition analysis

Initially, a structural equation model based on partial least squares was analysed, with Information on sustainability, Attitude towards sustainability and Perception of green strategies as predictors of Sustainable consumption. The model met all the adjustment criteria (Cronbach's alpha, composite reliability, VIF), as well as the model's convergent and discriminant validities (Hair et al., 2022).

The criteria for carrying out the NCA were based on Dul (2016). In analysing the necessary conditions, various indicators such as c-accuracy, slope, fit and p-value are essential for assessing the robustness and relevance of the conditions identified. The c-accuracy, or consistency accuracy, measures how consistently the presence of a condition accompanies the desired outcome; higher values indicate a strong association, suggesting that the condition may be essential to the outcome.

The slope helps to understand the strength of the relationship between the condition and the outcome, with a steep slope indicating a strong relationship and suggesting that changes in the condition are strongly linked to changes in the outcome.

The fit is another critical indicator that assesses how well the model with the proposed condition fits the observed data; a good fit indicates that the condition explains the result well, reinforcing its position as a necessary condition. Finally, the p-value is used to determine the statistical significance of the results; a low p-value suggests that the observed association between the condition and the outcome is unlikely to be due to chance, indicating a significant relationship. Together, these indicators provide a comprehensive and reliable understanding of the conditions required, allowing for deeper analyses and well-founded conclusions. These





results are shown in Table 1.

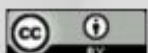
Table 1 - Results of the necessary conditions analysis

% Levels	Antecedents			
	Sustainable consumption	Information on sustainability	Attitude to sustainability	Perception of green strategies
0	NN	NN	NN	NN
10	NN	NN	NN	NN
20	NN	NN	NN	NN
30	NN	NN	2.8	NN
40	NN	NN	12.7	NN
50	6.7	17.8	17.8	3.7
60	11.2	19.1	19.1	9.1
70	15.7	23.1	23.1	18.1
80	28.6	31.4	31.4	21.9
90	34.9	46.9	46.9	29.4
100	43.5	56.8	56.8	32.9
Effect size	0.32	0.41	0.41	0.19
Scope	33.01	34.12	34.12	30.21
Slope	0.611	1.012	1.012	1.157
Accuracy	99.80%	100%	100%	99.70%
Fit	97.20%	100%	100%	78.8

Source: The authors

The results of the necessary conditions analysis (NCA) suggest that hypotheses H1↑nc, H2↑nc and H3↑nc have been proven, and revealed important insights into the factors that influence sustainability. Firstly, attitude towards sustainability stands out as the most relevant among the conditions examined. With an effect size of 0.41, it not only showed a strong association with the desired outcome, but also a c-accuracy of 100 per cent and a perfect fit of 100 per cent, indicating an extremely consistent and well-adjusted relationship. The slope of 1.012 reinforces this interpretation, suggesting a strong and positive relationship between attitude to sustainability and sustainable behaviour.

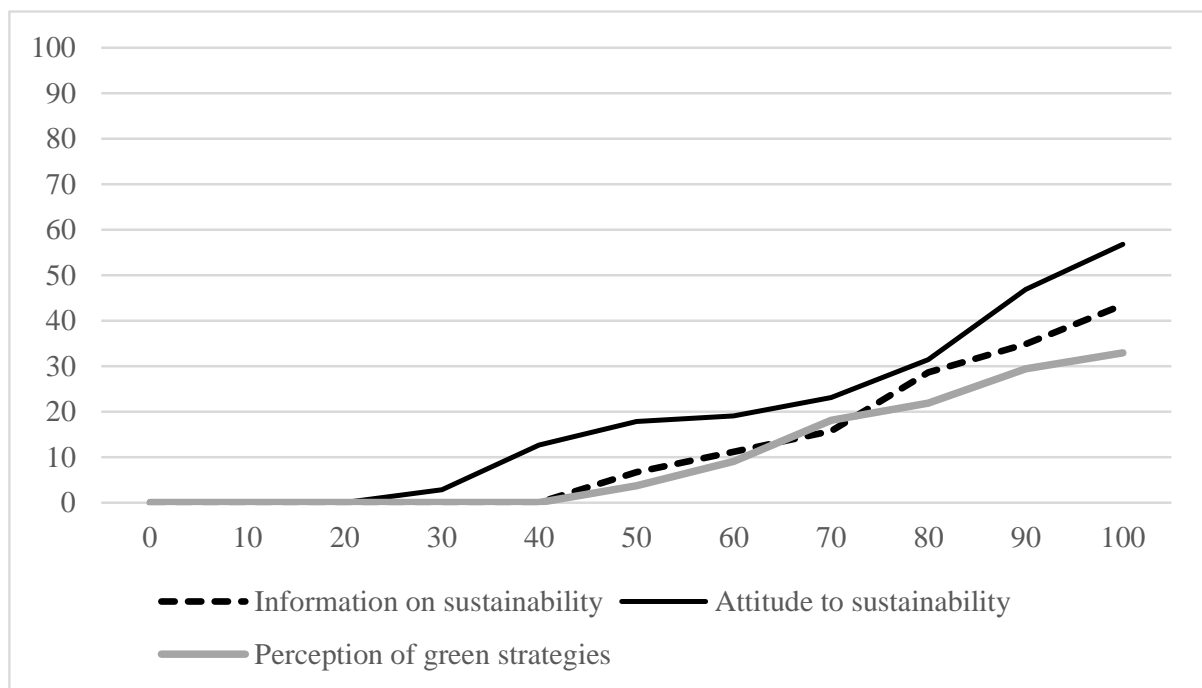
Next, information on sustainability also emerged as a significant factor, with an effect size of 0.32. The c-accuracy of 99.80 per cent and the fit of 97.20 per cent indicate high consistency and a good fit, demonstrating that knowledge and awareness of sustainable practices are strongly related to sustainable actions. The slope of 0.611, although lower than



that of attitude, still reflects a significant positive relationship.

Perceived green marketing strategies were identified as the third most relevant factor, with an effect size of 0.19. Although smaller compared to the other two factors, the c-accuracy of 99.70% and fit of 78.80% still indicate a remarkable and consistent relationship with sustainable behaviour. Interestingly, the slope of 1.157 is the highest among the factors, suggesting that although the overall effect of green marketing strategies is smaller, they have a strong individual relationship when present.

Graph 1 shows the evolution of the determining factors of sustainable consumption and their necessary levels.



**Graphic 1.** Evolution of the levels required for sustainable consumption

The level of information starts off more relevant than perception in relation to green strategies, this is inverted to an intermediate level, and then becomes more relevant definitively over time. Attitude remains the fundamental element for sustainable consumption throughout. The analysis also highlighted attitude towards sustainability as the most critical factor, closely followed by availability of information on sustainability and perception of green marketing strategies. Each of these elements plays a significant role in promoting sustainable behaviour, with important implications for engagement strategies, policies and commercial practices aimed at sustainability.





#### 4.4 Discussion

The results of the analysis of necessary conditions highlight critical factors that influence sustainable consumption, considering it as the dependent variable. Firstly, attitude towards sustainability emerged as the most influential factor, with high effect, c-accuracy and fit indices. This indicates that individuals' positive predisposition towards sustainability is fundamental to adopting sustainable consumption practices. In other words, when people value and prioritise sustainability in their beliefs and attitudes, they are more likely to make consumption choices that reflect these values. Next, information about sustainability also proved to be a significant factor, with high levels of c-accuracy and fit. This suggests that knowledge and understanding of sustainability issues and sustainable product options are essential to empower consumers to make greener and more responsible choices. When people have access to clear and reliable information about sustainability, they can make more informed consumer decisions in line with sustainable principles.

The results also indicated that perceived green marketing strategies were identified as the third most relevant factor. Despite having a smaller overall effect, their high c-accuracy and slope indicate that when companies effectively communicate their sustainable practices and products, this can have a significant impact on promoting sustainable consumption. This emphasises the importance of companies adopting and authentically communicating their sustainability initiatives, positively influencing individuals' consumption choices.

In short, these results point to the importance of internal factors, such as attitudes and knowledge, as well as external influences, such as marketing, in promoting sustainable consumption. Understanding these factors can help formulate more effective strategies to encourage more sustainable consumption behaviour. The main contribution of this study was to confirm the mediating role of Attitude in relation to Intention in the context of sustainable consumption, even if information on environmental issues is provided or consumer perception of sustainable issues is stimulated through marketing actions.

This study contributes theoretically to existing knowledge about sustainable consumption in a number of ways. The results obtained through the analysis of necessary conditions made valuable contributions to the theoretical understanding of sustainable consumption. They reinforce the idea that personal attitudes towards sustainability are crucial,





aligning with theories that emphasise the role of beliefs and values in driving consumer behaviour. This highlights the need for strategies aimed not only at changing superficial behaviours, but also at cultivating a deeper change of mindset towards sustainability. Furthermore, the importance of information on sustainability underlines theories that argue that knowledge and awareness are fundamental. This indicates that providing consumers with access to clear and reliable information can enable them to make more responsible choices, pointing to the need for environmental education and transparency in sustainable practices and products.

The influence of perceived green marketing strategies also has significant theoretical implications. It highlights the power of marketing to shape consumer behaviour and the need for marketing messages to be authentic and not misleading. This reinforces the literature on sustainable marketing and the need for regulations to guarantee the honesty of environmental claims. The results also promote a more holistic approach, integrating attitudes, information and marketing into a broader understanding of sustainable consumption. They suggest that effective interventions need to address multiple factors simultaneously, highlighting the complexity of consumer behaviour and the variety of influences that need to be considered. Ultimately, these findings guide the formulation of public policies, business strategies and educational programmes. By identifying the key factors that drive sustainable consumption, they provide a solid basis for actions aimed at promoting more sustainable behaviour. In short, the results enrich the theoretical dialogue on sustainable consumption, providing concrete insights to boost both academic understanding and applied practice in this vital area.

## 5. FINAL REMARKS

The main objective of this study was to analyse the gap between consumer attitudes and behaviour in relation to sustainable consumption by investigating the conditions necessary for the phenomenon to occur. This study aims to examine the influence of green marketing on purchase intentions for ecological products, with the premise that consumers who receive preliminary information on environmental issues or have their perceptions stimulated, tend to demonstrate a greater propensity for conscious purchasing. While industries and corporations are often identified as significant contributors to environmental degradation, this study recognises their potential role, along with other entities such as NGOs, the press and





educational institutions, as influential agents in modifying consumer habits and attitudes towards more conscious and sustainable consumption.

Contributing to the literature on environmental issues, this study reinforces the evidence that attitudes towards these issues generally precede the willingness to adopt sustainable consumption practices. As described by Ajzen and Fishbein (2005), attitudes are psychological entities that are relatively stable and resistant to change. Furthermore, the accessibility of the belief about an attribute, the recency of its activation and the importance of that belief are crucial factors in the formation of attitudes towards the object being evaluated (Ajzen, Fishbein, 2000). This study highlights and expands this understanding in the context of sustainable consumption. For corporations, it is suggested to develop educational campaigns that foster positive attitudes towards environmental issues, promoting awareness of the adverse effects of irresponsible consumption on the environment. This study suggests that in order to motivate consumers to adopt sustainable behaviours, mere information is not enough; a more comprehensive approach that also influences the perception of sustainable issues is necessary.

The results indicate that Brazilian consumers are moderately concerned about the environmental impact of their products, despite living in a context with constant natural stimuli. Companies can therefore benefit from implementing strategies such as environmental product certification and labelling to facilitate recognition and increase consumer confidence in products' environmental credentials. In addition, educational campaigns about the importance of eco-certifications and the promotion of green label recognition are recommended as means of keeping consumers engaged and informed about environmental issues.

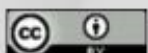
However, this study also points out that simply providing information and influencing environmental perception may not be enough to bring about a substantial change in consumer behaviour. If these actions contribute to the formation of positive attitudes towards environmental issues, then the likelihood of favourable consumer responses to these issues will be more significantly established.





## REFERENCES

- ABEP - Associação Brasileira Empresas de Pesquisa. (2013). Critério Padrão de Classificação Econômica Brasil. São Paulo: ABEP.
- Albarracín, D., Johnson, B. T., Zanna, M. P., & Kumkale, G. T. (2005). Attitudes: Introduction and scope. In D. Albarracín, B. T. Johnson, & M. P. Zanna (Eds.), *The handbook of attitudes* (pp. 3-19). Mahwah, NJ: Erlbaum. <https://doi.org/10.4324/9781410612823>
- Almendra, Fernanda Barbosa. Consumidor Verde: estudo de caso sobre perfil e características do mercado. 2012. 69 f. Monografia (Especialização em Gestão Ambiental) - Universidade Federal de São Carlos, São Carlos – S.P. 2012. Disponível em: <[http://www.stratmarket.com.br/publicacoes/Consumidor\\_Verde.pdf](http://www.stratmarket.com.br/publicacoes/Consumidor_Verde.pdf)>. Acesso em: 21 out. 2013.
- Azevêdo, Alexandre Cabral de; Galão, Fabiano Palhares; Baccaro, Thais Accioly. A pesquisa na área do comportamento do consumidor no Marketing ambiental – uma revisão da produção acadêmica Brasileira entre 1994 e 2007. SEMEAD, Paraná, Universidade do Norte do Paraná, 2007. Disponível em: <<http://www.ead.fea.usp.br/semead/11semead/resultado/trabalhosPDF/725.pdf>>. Acesso em: 16 mar. 2023.
- Ajzen, I., & Fishbein, M. (2005). The influence of attitudes on behavior. In D. Albarracín, B. T. Johnson, & M. P. Zanna (Eds.), *The handbook of attitudes* (pp. 173-221). Mahwah, NJ: Erlbaum. *The influence of attitudes on behavior*. In D. Albarracín, B. T. Johnson, & M. P. Zanna (Eds.), *The handbook of attitudes*
- Bagozzi, Richard P. Attitudes, Intentions, and Behavior: A Test of Some Key Hypotheses. *Journal of Personality and Social Psychology*, 41(4), 607-627 . <https://doi.org/10.1037/0022-3514.41.4.607>
- Bagozzi, Richard P.; Gurhan-Canli, Zeynep; Priester, Joseph R. *The social psychology of consumer behavior*. Open University Press. 2009
- Blackwell, R. D., Miniard, P. W., & Engel, J. (2008). *Comportamento do consumidor* (9 ed.). São Paulo: Pioneira Thomson Learning.
- Bedante, Gabriel Navarro. A influência da consciência ambiental e das atitudes em relação ao consumo sustentável na intenção de compra de produtos ecologicamente embalados. 2004. 159 f. Dissertação (Pós-Graduação em Administração) Universidade Federal do Rio Grande do Sul. Porto Alegre: 2004. Disponível em: <<http://www.lume.ufrgs.br/handle/10183/3904>>. Acesso em: 17 abr. 2023.
- Bizarrias, F. S. (2024). Governance and Sustainability in Developing Countries: Intellectual Structure, Trends and Lessons From Brazil and China . *ESG Studies Review*, 7(esg), e01618. <https://doi.org/10.37497/esg.v7iesg.1618>
- Bruner, Gordon C.; Hensel, Paul J.; JAMES, Karen E. *Marketing Scales Handbook - A compilation of Multi-Item Measures for Consumer Behavior & Advertising*. v. IV. South-Western Educacional Pub, 2005.
- Dias, Reinaldo. *Marketing Ambiental: ética, responsabilidade social e competitividade nos negócios*. São Paulo: Atlas, 2009.
- Dul, J. (2016). Necessary condition analysis (NCA) logic and methodology of “necessary but not sufficient” causality. *Organizational Research Methods*, 19(1), 10-52. <https://doi.org/10.1177/1094428115584005>





Eagly, A.H., & Chaiken, S. (1993). The psychology of attitudes. Fort Worth, TX: Harcourt

Eduardo, Ênio V. B., Severo , E. A., & Dorion, E. C. H. (2024). Northeast Bank of Brazil's Role in Promoting Entrepreneurial Innovation in Family Farming through Renewable Energy Financing. *ESG Studies Review*, 7(esg), e01622. <https://doi.org/10.37497/esg.v7iesg.1622>

Enoki, Priscilla Azevedo; ADUM, Samir HussainNami; FERREIRA, Mariana Zanchetta; Aureliano, Camila Aparecida; Valdevino,Sheila de Lima. Estratégias de *Marketing Verde* na percepção de compra dos consumidores na grande São Paulo. In: Revista Jovens Pesquisadores, Ano V, nº 8, p. 58-74. São Paulo: Jan./Jul. 2008. Disponível em<<http://www.mackenzie.br/dhtm/seer/index.php/jovenspesquisadores/article/view/922>>. Acesso em:03 jan. 2023.

Guimarães , J. C. F. D., Severo , E. A., & Dorion , E. C. H. (2022). Path to sustainable competitive advantage: integrating environmental, social, and governance principles in strategic resource management. *Review of Sdgs in Emerging Countries*, 4(00), e26. <https://doi.org/10.37497/2965-7393.SDGs-Countries.v4.n00.26>

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2022). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)* (3e). Thousand Oaks, CA: Sage.

Hair JR, et al. A primer on partial least squares structural equation modelling (PLS-SEM). SAGE Publications, 2014

Keinert, T., Karruz, A. P. (2002). Qualidade de vida: observatórios, experiências e metodologias. São Paulo: Annablume/FAPESP, 2002

Krosnick, J. A., Judd, C. M., & Wittenbrink, B. (2005). The measurement of attitudes. In D. Albarracín, B. T. Johnson, & M. P. Zanna (Eds.), *The handbook of attitudes* (pp. 21-76). Mahwah, NJ: Erlbaum.

Lima , A. A., & Ribeiro , T. de L. S. (2023). Mapping the evolution of corporate social responsibility: a bibliometric study in applied social sciences. *Review of Sdgs in Emerging Countries*, 5(00), e31. <https://doi.org/10.37497/2965-7393.SDGs-Countries.v5.n00.31>

Machado, M. E. B., Conti , D. de M., Ayarza, J. A. C., & Ferreira da Silva Filho, C. (2024). Enhancing sustainability: Leveraging ESG indicators to evaluate corporate social responsibility policies in Brazil's agribusiness sector. *ESG Studies Review*, 7(esg), e01620. <https://doi.org/10.37497/esg.v7iesg.1620>

Malaguti , J. M. A., & Avrichir , I. (2023). Geographical indications and their impacts on sustainable development: literature review. *Review of Sdgs in Emerging Countries*, 5(00), e22. <https://doi.org/10.37497/2965-7393.SDGs-Countries.v5.n00.22>

Nguyen, H. V., Nguyen, C. H., & Hoang, T. T. B. (2019). Green consumption: Closing the intention-behavior gap. *Sustainable Development*, 27(1), 118-129. <https://doi.org/10.1002/sd.1875>

Oehler, A., & Wendt, S. (2017). Good consumer information: The information paradigm at its (dead) end?. *Journal of Consumer Policy*, 40, 179-191. <https://doi.org/10.1007/s10603-016-9337-5>

Ribeiro , T. de L., & Lima , A. A. de. (2022). Environmental, social and governance (ESG): a bibliometric review study. *Review of Sdgs in Emerging Countries*, 4(00), e27. <https://doi.org/10.37497/2965-7393.SDGs-Countries.v4.n00.27>





Richter, N. F., Hauff, S., Ringle, C. M., Sarstedt, M., Kolev, A. E., & Schubring, S. (2023). How to apply necessary condition analysis in PLS-SEM. In *Partial Least Squares Path Modeling: Basic Concepts, Methodological Issues and Applications* (pp. 267-297). Cham: Springer International Publishing. [https://doi.org/10.1007/978-3-031-37772-3\\_10](https://doi.org/10.1007/978-3-031-37772-3_10)

Richter, N. F., Schubring, S., Hauff, S., Ringle, C. M., & Sarstedt, M. (2020). When predictors of outcomes are necessary: Guidelines for the combined use of PLS-SEM and NCA. *Industrial management & data systems*, 120(12), 2243-2267. <https://doi.org/10.1108/IMDS-11-2019-0638>

Ringle , C . M . , Wende , S . and Will , A . ( 2005 ) SmartPLS 2.0 (beta) , [www.smartpls.de](http://www.smartpls.de) , Hamburg, accessed 2 August 2010

Silva, Adilson Aderito da; Ferreira, Mariana Zanchetta; Ferreira, Priscila Azevedo. Estratégias de Marketing Verde e o Comportamento do Consumidor: um estudo confirmatório na grande São Paulo. In: Anais SIMPOI 2009. São Paulo, 2009. Disponível em: <[http://www.simpoi.fgvsp.br/arquivo/2009/.../E2009\\_T00255\\_PCN67409.pdf](http://www.simpoi.fgvsp.br/arquivo/2009/.../E2009_T00255_PCN67409.pdf)>. Acesso em: 25 mar. 2013.

Silva, Catarina Estefânia de Albuquerque Morais da. *Marketing Verde e o alinhamento empresa-consumidor*. 2012. 55 f. Dissertação (Mestrado em Ciências Empresariais) Universidade Técnica de Lisboa - Instituto Superior de Economia e Gestão. Lisboa: 2012. Disponível em: <<https://www.repository.utl.pt/bitstream/10400.5/4954/1/DM-CEAMS-2012.pdf>>. Acesso em: 17 abr. 2023.

Silva, A. de O., & Janes, D. dos S. (2023). Perspectives on sustainable development: the intersection of publishing and academic research in advancing sdgs. *Review of Sdgs in Emerging Countries*, 5(00), e29. <https://doi.org/10.37497/2965-7393.SDGs-Countries.v5.n00.29>

Trope, Y., & Liberman, N. (2010). Construal-level theory of psychological distance. *Psychological Review*, 117(2), 440-463. <https://doi.org/10.1037/a0018963>

Zenone, Luiz Cláudio.(2006). *Marketing Social*. São Paulo: Thomson Learning