

THE ROLE OF COMMUNICATION VARIABLES IN PROMOTING A PRO-ENVIRONMENTAL BEHAVIOUR

*A STUDY TO BETTER COMMUNICATE
“ANTI-CONSUMPTION” BEHAVIOUR*

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Abstract

The aim of this study is to understand how to better communicate anti-consumption behaviour. Anti-consumption has an integral role and in particular, the acts of rejecting, reducing and reusing products, resources, and services are essential elements to sustainable consumption. Therefore, especially nowadays, understanding how to promote this behaviour is an important topic to consider. To achieve this goal, three communication variables (message framing, message appeal, and label of the behaviour) are studied. Moreover, the role of people's pre-existing environmental concerns is analysed and considered as a possible moderator of the relationship between independent and dependent variables. To achieve the research goal, a 2x2x2 between-subjects experimental design (N=221) is used. As stimulus material eight different texts are created accordingly to the different combinations of independent variables. The data is collected by using an online questionnaire where participants are asked to read the text and give their opinion on different questions measuring the dependent variables of the study. The results have shown that not every communication variable had significant effects when communicating anti-consumption behaviour. However, it has been demonstrated how the use of a certain message appeal, or the combination of specific communication variables lead to specific outcomes while communicating anti-consumption behaviour. For example, it was found that the use of rational messages, as well as the combination of message appeal and label of the behaviour, has significant effects on behavioural intention. Moreover, it was interesting to find how different levels in people's environmental concerns (especially moderate and high levels) moderate the relationships between communication variables and for example, attitude towards the behaviour and behavioural intention.

Keywords

Anti-consumption; Message framing; Message appeal; Label of the behaviour; Environmental concerns

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1. Introduction

*“We buy things we don’t need
with money we don’t have to impress people we don’t like”
Dave Ramsey (2013)*

This quote might be one of the many we always see on our Facebook homepage when we scroll down during a boring moment of our daily routine, but why is this quote so meaningful? One of the main questions that we do not take into account when we purchase is “What is it behind the way we consume? What are the consequences of mindless consumption? How is consumerism changing our world?”.

In recent years, the way marketing and communication works has drastically increased the level of consumption, especially in western societies. More and more studies have been conducted to better understand consumer behaviour and to find new ways to promote and sell products and services. A communication strategy that involved for example “the principle of persuasion” (Cialdini, 2007) is just one example of the many psychological ways adopted by marketing to persuade, and sometimes manipulate consumers to purchase more. Of course, as human-beings we need to consume to survive, but what happens when we consume more than what we need, for example, just to satisfy unnecessary materialistic needs?

Nowadays, the way we consume products and services has a direct impact on the environment. Hence, with all the environmental issues we are facing, a more aware and sustainable consumption needs to be a central topic in our society.

As stated by Heiskanen and Pantzar (1997), the topic of sustainability is often presented around issues of sustainable consumption. Despite different debates about it, the notion of sustainability is still elusive as its official definition: “sustainable consumption is the use of goods and related products which respond to basic needs and bring a better quality of life, while minimizing the use of natural resources and toxic materials as well as the emission of waste and pollutants over the life cycle, so as not to jeopardize the needs of future generation” (Norwegian Ministry of Environment, 1994, cited in OECD, 2002).

For some people, the consumption of “greener” products is referred to sustainable consumption (Ottman, 2003) while for others, sustainable consumption is wider and entails reconsidering the social and cultural function of materialistic consumption and affluence (Schumacher, 1974). The latter view includes downscaling consumption and reframing the

normative framework based on material prosperity and wealth to an “anti-consumeristic ethic” (Press & Arnould, 2009).

According to this point of view, the traditional model of self-interested consumers and individualization loses effectiveness by the adoption of environmental consciousness and moral restraints on consumption choices, and additionally taking actions on daily life to reduce the impacts on the environment (Dodson, 2003). This idea includes the notion of downscaling consumption and behaving in an anti-consumption way that might represent an innovative motivation force for sustainable development.

A study conducted by Black and Cherrier (2010) shows that, in who is trying to live a more sustainable life, anti-consumption has an integral role and in particular, the acts of rejecting, reducing and reusing products, resources, and services are essential elements to sustainable consumption.

A radical concept such as anti-consumption might lead to negative reactions. People could be skeptic about the meaning of this word, it might be perceived slightly too “radical” and consequently, people might start to experience negative emotions about what it concerns. But what if the way we talk about anti-consumption behaviour is presented in different ways? What is the effect of different communication variables while communicating this topic?

In communication, the role of message features plays an important role. For example, the success of a health campaign often depends on the persuasiveness and impact of its message (Andsager, Bemker, Choi & Torwel, 2006). Specifically, researches have tried to determine which appeal and types of message an audience prefers, remembers and finds effective. In the marketing and consumer literatures, several models of persuasion suggest that people involved with an issue are more favourable to process relevant messages in detail (Chaiken 1980; Petty and Cacioppo 1986). For example, a research conducted by Maheswaran and Meyers-Levy (1990) showed that people are more risk aversion when alternatives are framed positively but are more risk-seeking when options are framed negatively with a focus on benefit loss.

Also, a more emotional or more rational oriented message can lead to different persuasion outcomes while communicating and promoting a certain topic. Some researchers showed that rational messages are more effective in introducing positive consumer attitudes. On the other hand, other researches demonstrated that rational messages are more successful in strengthening positive consumer responses (Mazzotta, de Rosis, & Carofiglio, 2007). Due to the persuasive relevance of message appeal and message framing; these message variables

need to be considered to better understand how to communicate the anti-consumption behaviour.

Another important factor to take into consideration while promoting the behaviour is its name. The label anti-consumption might not properly fit the behaviour itself. Only the way the behaviour is presented is not enough to understand how it can be efficiently promoted. As marketing strategies demonstrated, the name of the brand plays a key role in the success of a company and its products (Malik et. al., 2013). Therefore, the name of the behaviour to promote is an additional important variable that needs to be manipulated and analysed.

This study aims to research more about how to better communicate an important behavior as anti-consumption. The aim is to furnish the best way to talk about this topic and make the communication more persuasive, and therefore more effective.

To achieve this goal the main research question has been set:

RQ: “To what extent do communication variables (message framing, message appeal, and label of the behaviour) influence consumers’ attitude towards the behaviour, behavioural intention, and impact on perceived comprehensiveness of the behaviour?”

2. Theoretical framework

In this theoretical framework, it is defined what anti-consumption behaviour is, what the characteristics of this behaviour are, and how the concept has been developed over the years. Then the dependent variables are defined. Consequently, the possible effects of the independent variables are shown. Subsequently, those findings are matched with the anti-consumption behaviour in order to assume some possible research outcomes. Finally, the moderating role of environmental concerns is discussed. Altogether, this forms the framework of the research design.

2.1 Anti-consumption behaviour

As stated by Lee et al. (2009), “Anti-consumption literally means against consumption, yet the word is not synonymous with alternative, conscientious, or green consumption; neither does anti-consumption merely comprise the study of ethics, sustainability, or public policy”. Anti-consumption should not be intended as contrary to business success or improved quality of life, neither it is supposed to interfere with societal and business progress. Conversely, behaviours as rejection, reduce and reuse products, resources, and services should be seen as tools for sustainability (Black & Cherrier, 2010).

Khan (2017) illustrates the contrast between anti-consumption and materialism. The author describes the materialism as the emphasize of “possessions and money for personal happiness and social progress” (Moschis and Churchill, 1978). As opposed to materialism, Cherrier (2009) describes anti-consumption as the representation of the attitude able to decline to give resignation to the ideology of progress and material growth.

In 1990, Wall advanced the idea of a deliberate refusal to consume as a part of the pursuit of a more sustainable society. Subsequently, Agarwal (2013) formalized this idea into the concept of anti-consumption.

As mentioned by Iyer and Muncy (2009), a movement of anti-consumption exists in a mass-consumption society. Craig-Lees (2006) carefully pointed out that anti-consumers have never formed a monolithic anti-consumption movement. Rather, different approaches to anti-consumption and the motivation that lead anti-consumption behaviours vary among personal, political, and environmental concerns. As suggested by Choi (2011), participants of the anti-consumption movement refuse or avoid consuming for social or psychological reasons, they also include personal conviction or preference, rather than out of necessity. Including both

individual and groups, “non-consumption” is no longer a niche movement. Rather, it is developing into a major trend in the global market.

Nowadays, anti-consumption behaviour should be considered more seriously. The way we consume is no longer sustainable. Our current consumption patterns have an enormous impact on the environment. This consumption model contributes to world problems such as pollution, climate change, extinction of species, and resource depletion. Therefore, the goal of this research will be focused on the strategy to better communicate and promote the anti-consumption behaviour. This can be a first step in persuading people to embrace a new way to consume, a new way to behave that could make a strong and beneficial contribution to the welfare of our planet.

2.2 Dependent variables

2.2.1 Attitude towards anti-consumption behaviour

As stated by Ajzen and Fishbein (1977), attitudes are influenced by different aspects of the individual’s world. For example, another person, an object, a policy, or a behaviour. Although many definitions of attitude have been suggested, most investigators agreed that the own evaluation of the entity in question represents the person’s attitude. In a paper by Allport (1935), an attitude is defined as: “A mental and neural state of readiness, which exerts a directing, influence upon the individual’s response to all objects and situations with which it is related”. Since the attitude towards anti-consumption behaviour has not been defined yet, it could be explained as the personal evaluation of rejecting, reducing, and reusing products, resources, and services for the sake of the environment.

In a study conducted by Steg and Vlek (2009), it has been demonstrated how pro-environmental behaviour change requires consumers to develop more positive pro-environmental attitudes over time in order to lead to a more sustainable consumption. This relation between attitudes and behaviour can be explained by the expectancy-value model (Ajzen, 1991). According to this influential perspective, consumers are viewed as forming attitudes through active cognition: they collect information on the attributes forming an object, subsequently, on the basis of their prior beliefs, they consider each attribute, and draw final perceived values concerning the good (Bentler & Speckart, 1979). Once these attitudes are generated, they are stored in memory, and if new important information becomes available, these attitudes are revised and used anytime they are activated (Petty, 2006).

According to Panzone, Hilton, Sale, and Cohen (2016), this deliberate process of cognition leads to judgments called explicit attitudes.

In order to better communicate and promote the anti-consumption behaviour, and understand how to enhance the willingness to adopt this behaviour, the role of explicit attitudes needs to be investigated as a dependent variable.

2.2.2 Behavioural intention

To explain customer behavioural intentions, Fishbein and Ajzen (1975) developed the Theory of Reasoned Action (TRA). This theory assumed that humans are rational in making methodical use of any available information, and the intentions are the single most important predictor of human behaviours (Ding & Ng, 2009). Originally, the model was created and used to predict intentions to take reasoned action in ordinary life experiences. As stated by Guo et al. (2007), TRA focuses on the impacts of cognitive components. Moreover, Oppermann (1995) demonstrated how TRA is important to analyze non-routine thinking decisions and for such behaviors which require critical deliberation. In other words, consumers' contextual decision making can be comprehended using TRA and its effectiveness in explaining psychological/cognitive processes (Han and Kim, 2010). As stated by Han and Kim (2010), individuals' intention to engage in a given behaviour is the central principle of TRA. Therefore, the willingness or readiness to engage in a behaviour under consideration is referred to "intention". According to this theory, the intention to adopt anti-consumption behaviour could be defined as the extent to which people are willing to reject, reduce, and reuse products, resources, and services for the sake of the environment.

As stated by Ajzen (2002), an intention is considered as the best predictor of and a precursor to behaviours. TRA has been widely studied, tested, and validated in different settings, for example, health behaviours, online mediums, organic food, alcohol use etc. (Netemeyer & Bearden, 1992; Lee & Green, 1991). Additionally, using the Theory of Reasoned Action model, intentions have been predicted in green marketing areas, such as recycling behaviours, and green purchase behaviours (Lam and Hsu, 2004).

In the context of pro-environmental behaviours and more specifically, the consumption of green products, a positive relationship between behavioural intention and attitude has been widely entrenched (Mostafa, 2007). For example, it has been demonstrated that environment-friendly beverage packaging is preferred by consumers who hold a positive attitude towards preserving the environment (Birgelen et al., 2009). Furthermore, as verified

by Barber et al. (2010), the intention to adopt a behaviour is positive influenced by the attitude consumers hold towards the behaviour.

2.2.3 Impact on perceived comprehensiveness of the behaviour

A central aim of this study is to understand the extent to which people perceive and comprehend the anti-consumption behaviour. To understand how people comprehend the behaviour it is important to know to what extent people perceive the behaviour to have an impact on their daily routines and know the perceived degree of intrusiveness of the behaviour. In the marketing field, the perception of an advertising as intrusive should be considered as a cognitive evaluation of the degree to which the advertisement interrupts a person's goals (Edwards, Li & Lee, 2002). Specifically, intrusiveness is presented as the degree to which a person considers the presentation of information as adverse to his or her goals. In this research, adopting anti-consumption behaviour could be perceived as a threat to daily life goals and routines. For example, being at the supermarket and having to pay more attention to the products that are necessary to be bought might be perceived as a limitation or a huge effort in a common daily routine. Therefore, it becomes necessary to understand the way by which the perceptions of intrusiveness can be limited to reduce the negative outcomes (Edwards, Li & Lee, 2002).

In this study, the role of communication variables could lead to different perceptions of the meaning and intrusiveness of the behaviour, and consequently, the behaviour could be comprehended to have different impacts on people's daily goals. For these reasons, and in order to better communicate the anti-consumption behaviour, it is important to understand how people intend the behaviour and its impact on daily life situations.

2.3 Independent variables

2.3.1 Message framing

Messages can focus on either positive benefits of pursuing an action (i.e., "gain frame") or the negative outcomes of not pursuing an action (i.e., "loss frame"). As stated by Levin, Schneider, and Gaeth (1998), gain/loss framing is also treated as "message framing". Individuals react in a different way to the same information depending on whether messages are framed emphasizing the disadvantages (i.e., loss frame) or advantages (i.e., gain frame). According to Maheswaran and Meyers-Levy (1990), message framing is one of the most commonly manipulated characteristic influencing the attitudes and behaviours of consumers.

Many studies have been conducted to better understand whether the use of positive framing is more or less persuasive than a negative framing. Also for Chandy et al. (2001), the most common strategy to frame a message involves the use of message frames that underline either the positive or negative consequence related with a certain behaviour; this strategy is called ‘goal framing strategy’. Levin et al. (1998) revealed that, in fostering the promoted behaviour, negatively framed messages seem to be more effective than positively framed messages. In their social marketing research, Ferguson and Gallagher (2007) found a greater persuasiveness of negative frames related to health-related behaviours such as fostering breast self-examination (Meyerowitz & Chaiken, 1987), HIV/AIDS prevention (Marchand & Filiatrault, 2002), and the use of condoms for a safe sex practices (Block & Keller, 1995). Jung and Villegas (2011) demonstrated that, when people feel a strong involvement in the topic of the message, the use of such negative frames is particularly stronger.

Other studies showed that messages with negative frames are more effective than positive frames also in promoting environmental behaviours such as solid waste reduction. Other supportive studies were conducted in the field of consumption situations; for example, Chang et al. (2015) demonstrated that messages with negative frames are more persuasive when consumers are particularly worried about environmental issues.

Another possible explanation of the efficacy of negative framing is mentioned by White et al. (2011): negatively framed messages are more persuasive than positive frames because consumers, and more general recipients, process negative messages more accurately.

According to the previous studies related to environmental or social issues, negative message framing seems to be more persuasive than a positive framing. Therefore, since the anti-consumption behaviour can be considered as a pro-environmental behaviour, the use of a negative message would lead to a more positive effect on attitude towards behaviour and consequently on the behavioural intention to adopt it. In line with the previous reasoning and the literature found, the following hypotheses are proposed:

H1a: Negative message framing (loss oriented) has a more positive influence on the attitude towards anti-consumption behavior compared with positive message framing (gain oriented).

H1b: Negative message framing (loss oriented) has a more positive influence on the behavioural intention compared with positive message framing (gain oriented).

2.3.2 Message appeal

The advertising literature reported that message appeal (i.e., rational versus emotional) is one of the primary strategic considerations (Singh & Dalal, 1999; Stafford, 2005). Schiffman and Kanuk (2007) defined the use of message appeal as the application of a psychologically motivating power to arouse action and desire in consumer's decision. The appeal is used to attract people's attention, to change the perception of a product and to emotionally affect individuals about a specific product or service (Belch & Belch, 2002)

The emotional appeal is known as a method used in persuasive communication that is designed to create an emotional response. As stated by Aristotle, an emotion is one of the main important modes of persuasion. A common way to compose an emotional appeal is the use of anecdotes, and metaphors as well as descriptive language. According to Kotler and Armstrong (1994, p. 468), "Emotional appeals attempt to stir up either negative or positive emotions that can motivate purchase. These include fear, guilt and shame appeals that get people to do things they should or stop doing things they shouldn't... communicators also use positive emotional appeals such as love, humor, pride, and joy". In this paper, the manipulation of the message could include some metaphors and anecdotes to enhance people's emotions concerned with environmental issues.

A rational appeal is known as a method of persuasion focused on providing factual information about specific details regarding the argument shown in the message. As mentioned by Belch and Belch (2012), rational appeals underline the facts, logic of persuasion and learning. The extent of the arguments make sense or are logical, influence the message persuasiveness related to a topic. Environmental information about the actual world situation might be used in order to create a rational appeal in the message to manipulate in this paper.

Several studies have been conducted to better understand when the use of emotional appeal or rational appeal is more efficient. Baker and Churchill Jr (1997) showed that messages formulated to focus more on the customer emotions are more effective in increasing awareness of people, for example by evoking discussion. In contrast, messages that underline product attributes and related information, using a more rational approach, are more effective in evoking purchase intentions (Lloyd & Clancy, 1991).

Several studies conducted in the advertising field have explored and debated the effectiveness of the two different approaches. An example is a study conducted by Aaker and Norris (1982). The outcomes of this research reported that informational appeals have higher effectiveness than emotional appeals. In contrast, other scholars have demonstrated that

emotional appeals result in more positive reactions and higher levels of recall (Choi & Thorson, 1983).

A study related to purchase intentions, knowing the possible environmental consequences, demonstrated that marketers use rational appeals that highlight the benefits towards the environment to give positive sentiment and stimulate brand interest to highly involved consumers (Dahlstrom, 2011). According to Coad, De Haan and Woersdorfer (2009), consumers who know more about the existence of certain environmental problems will have the feeling of responsibility and belief that by adopting new behaviours, they will be able to improve the situation.

Therefore, since the aim of the research is to promote anti-consumption, previous literatures related with green consumption or environmental-friendly behaviour seem to suggest the adoption of rational messages to efficiently communicate a pro-environmental behaviour.

According to what has been said above, a rational appeal might have more impact on environmental issues and consequently, it might have a stronger impact on the attitude towards anti-consumption behaviour and behavioural intention. Therefore, the following hypotheses are proposed:

H2a: A rational appeal has a more positive influence on attitude towards Anti-Consumption behavior compared with emotional appeal.

H2b: A rational appeal has a more positive influence on behavioural intention compared with emotional appeal.

2.3.3 Label of the behaviour

One of the main purpose of this study is to understand which label better fits the anti-consumption behaviour. Therefore, the idea is to deal with the label of the behaviour as it is done with the name of a brand to promote.

Richardson et al. (1994) described brand name as a commonly used tool to build or maintain quality and trust perceptions, moreover, it also represents a quantity of information about a product or a company. Wienkielman et al. (2000) defined the idea of branding as a tool able to work as a signal. With the use of an efficient brand name, people and consumers can quickly recognize a product as one they are familiar with or one they like. The brand name works as a memory cue that allows consumers to retrieve important information from memory. There are different information that could be retrieved, for example, about past

experiences of the brand, brand perceptions or association to the brand. The information and perceptions people have about the brand are crucial in guiding our decisions and behaviours (Wienkielman et al., 2000).

In a social marketing context, one of the main issues is to understand what labels and meanings need to be connected to desired, or sometimes even undesired, behaviours as well as to the personal or social benefits and costs that come from these behaviours. Consequently, one challenge for branding in social marketing campaigns is to understand how to ensure that individuals correctly value the immediate benefits of desirable behaviours, i.e., feel part of an exchange or be a part of a social change (Keller, 1998).

In this project, the aim is to analyze which label is better to efficiently communicate the anti-consumption behaviour. Two words have been manipulated during this experiment: a negative-sounding word “anti-consumption” and a positive-sounding word “conscious-consumption”. Lowrey and Shrum (2007) investigated the effect of phonetic symbolism on brand name preference. The outcomes of this experiment demonstrated that the sounds of words can change people perception and judgments. With this experiment, Lowrey and Shrum (2007) confirmed the possibly pervasive effect of a preference for positive-sounding words over negative-sounding words (Smith, 1998).

According to what is previously mentioned above, it can be assumed that the use of a positive-sounding label such as “conscious- consumption” will have a more positive impact in order to communicate the anti-consumption behaviour. Consequently, more positive effects on attitude towards anti-consumption and people’s behavioural intention are expected when using the label conscious-consumption. Moreover, the use of conscious-consumption as a label might be perceived as a softer and less-demanding term to indicate the anti-consumption behaviour. Therefore, depending on which label is used, it is important to analyze to what extent people perceive the behaviour to have an impact on their daily life. Even though the behaviour explained is the same, different outcomes can result from the use of different labels.

According to the literature found and the reasoning behind it, different hypotheses have been formulated.

H3a: The use of the label “conscious-consumption” has a more positive influence on attitude towards anti-consumption behaviour compared with the label “anti-consumption”.

H3b: The use of the label “conscious-consumption” has a more positive influence on behavioural intention of the behaviour compared with the label “anti-consumption”

H3c: The use of the label “conscious-consumption” has less impact on perceived comprehensiveness of the behaviour than the use of the label “anti-consumption”.

2.4 Moderator

Environmental concerns

As stated by Shultz and Zelezny (2002), “attitudes of environmental concern are rooted in a person’s concept of self and the degree to which an individual perceives him or herself to be an integral part of the natural environment”. The quality of the environment is critically influenced by the level of knowledge, attitudes, values, and practices of people (Mansaray & Abijoye, 1998).

In a study conducted by Gärling et al. (2003), the interest was focused on relationships between environmental behaviour (e.g. travel mode choice) and general environmental beliefs. Studying the relationships between general beliefs and behaviours is important because general beliefs may influence a wide range of behaviours (De Groot & Steg, 2007). For example, Chyong et al. (2006) demonstrated how attitudes are the most consistent explanatory factors in predicting consumers’ willingness to pay for green products. Moreover, in a study among 380 university students about the intention to use a “green” electricity brochure, Bamberg (2003) concluded that environmental concerns probably affect environmental behaviour indirectly via specific beliefs.

In this study, anti-consumption behaviour, and, more specifically, behaviours as rejection, reduce, and reuse of products, resources, and services, can be defined as a pro-environmental behaviour because of their low negative environmental impact. Therefore, since a positive level of people’s environmental concerns influence the adoption of pro-environmental behaviours (e.g., buying products good for the environment or choosing public transportation instead of cars) (Bamberg, 2003), it can be assumed that people who are more concerned about the environment will be more interested in anti-consumption behaviour. For these reasons, the role of the moderator “Environmental concerns” could lead to a higher moderating effect on the attitude towards the anti-consumption behaviour, a higher behavioural intention and a higher impact on perceived comprehensiveness of the behaviour.

Assumed that a positive attitude towards environmental concerns will moderate the effect of the independent variables on the dependent ones, the following hypotheses have been created.

- H4a:** A high level of participant's environmental concerns has a more positive moderating effect between the message framing and the attitude towards the behaviour than a low level of environmental concerns.
- H4b:** A high level of participant's environmental concerns has a more positive moderating effect between the message framing and the behavioural intention than a negative level of environmental concerns.
- H4c:** A high level of participant's environmental concerns has a more positive moderating effect between the message appeal and the attitude towards the behaviour than a negative level of environmental concerns.
- H4d:** A high level of participant's environmental concerns has a more positive moderating effect between the message appeal and the behavioural intention than a negative level of environmental concerns.
- H4e:** A high level of participant's environmental concerns has a more positive moderating effect between the label of the behaviour and the attitude towards the behaviour than a negative level of environmental concerns.
- H4f:** A high level of participant's environmental concerns has a more positive moderating effect between the label of the behaviour and the behavioural intention than a negative level of environmental concerns.
- H4g:** A high level of participant's environmental concerns has a more positive moderating effect between the label of the behaviour and the impact on perceived comprehensiveness of the behaviour life than a negative level of environmental concerns.

2.5 Research model

The aim of this research is to investigate the role of communication variables in communicating anti-consumption behaviour. Based on previous research in communication, this study assumes that the positive effect of message framing, message appeal, and label of the behaviour on the attitude towards anti-consumption behaviour, behavioural intention, and perceived behavioural impact on people's daily life. The model suggests that the use of a negative message, a rational message, and the label conscious-consumption will have a more positive effect on the dependent variables. Moreover, the moderator environmental concern will have a significant impact on the outcomes of this study while a higher attitude towards

anti-consumption behaviour will lead to a higher behavioural intention to adopt the pro-environmental behaviour. Accordingly, the following research model is presented.

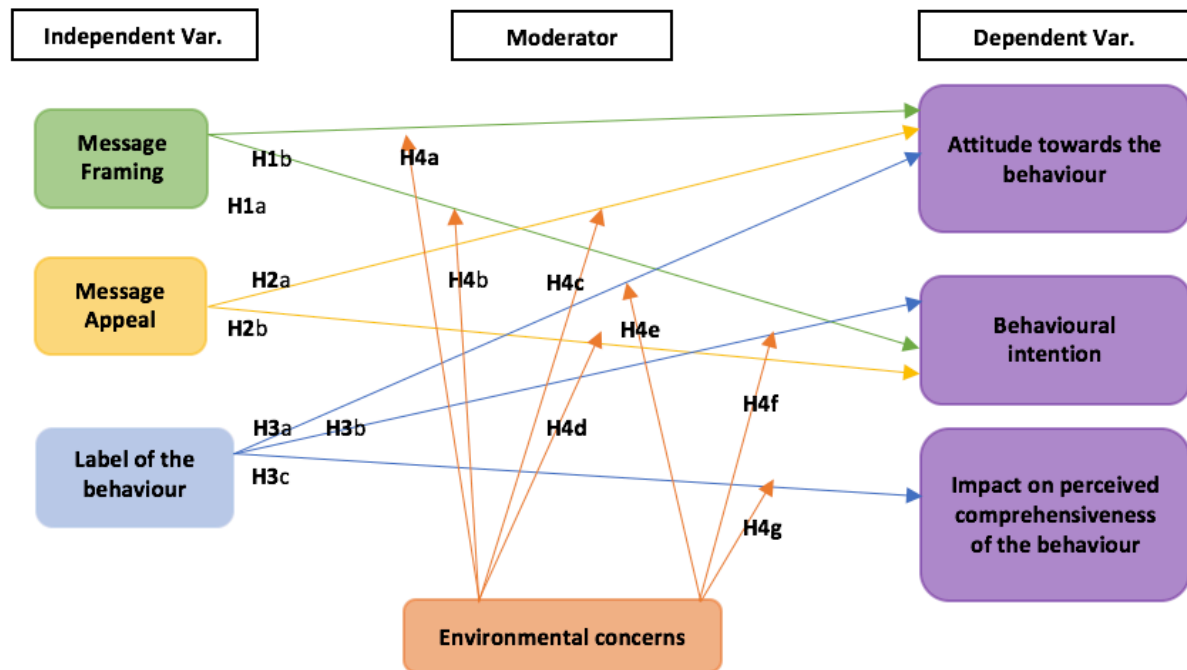


Figure 1: Conceptual research model

3. Research method

3.1 Research design

A between-subjects experimental study was conducted to examine the effect of the message framing, the use of message appeal, and the label of the behaviour on attitude towards anti-consumption behaviour, behavioural intention, and perceived behavioural impact on people's daily life. The moderator environmental concerns will be used in this study.

The current study utilizes a 2 (message framing: positive gain oriented/negative loss oriented) x 2 (message appeal: emotional personal oriented/rational logical oriented) x 2 (label of the behaviour: anti-consumption/conscious-consumption) between subject experimental design. Therefore, eight experimental condition groups were developed to analyze which combination of independent variables in the main text leads to higher effects on the dependent variables.

3.2 Procedure

The main study was created using the software Qualtrics. The recruited participants were randomly assigned to one of the eight experimental conditions with the randomized tool of Qualtrics.com. The questionnaire started with a brief introduction to the study and its purpose. Moreover, in the first section, participants were asked for their consents to participate in the experiment and some demographic questions (age, gender, nationality, level of instruction) were presented. The experiment started with the presentation of one of the experimental conditions, which comprised of a text that needed to be carefully read by all participants. After that, a series of 7-point Likert scales question were presented to indicate the participants' level of attitude toward anti-consumption behaviour, behavioural intention, perceived behavioural impact on people's daily life, and environmental concerns. The survey ended with the same condition shown before and consequently, few control questions were asked. This survey required approximately 15 minutes to be completed.

3.3 Stimulus materials

For the main questionnaire, different versions of the main text were created using the combination of different message stimuli (see Figure 5 for an example of the stimuli presented). The first part of the text included the following introduction: "Our current

consumption patterns have an enormous impact on the environment. We buy too much. We even tend to buy things we do not need. By doing so, we contribute to world problems such as pollution, climate change, extinction of species, and resource depletion. Western countries take more than they share. We are living at the expense of our children and grandchildren. For example, the number of natural resources retrieved to produce goods increases with 60 billion tons each year. We now use 50% more resources than only 30 years ago. This cannot go on like this. The future of our planet is at stake.” The introduction was kept the same for each participant in order to give to the participants the opportunity to get to know more about the case study and be more involved for the further manipulations.

Three other sections followed the introduction. Each section of the text was created to test an independent variable. To see which manipulation was more effective, two different versions of each section were created and randomized. For example, for the label of the behaviour section, one version of the text contained the word anti-consumption and the other version the word conscious-consumption. Table 3.3 shows the general structure of the main text. In the following part, the manipulation created are shown for each independent variable.

Table 3.3: Structure of the main text

STRUCTURE		STIMULI PRESENTED	
Introduction		<i>Same for all participants</i>	
1st section (definition of the anti-consumption behaviour)	<i>Text containing the word anti-consumption</i>	OR	<i>Text containing the word conscious-consumption</i>
2nd section (description of what the anti-consumption behaviour can lead to)	<i>Positive, gain oriented text version</i>	OR	<i>Negative, loss oriented text version</i>
3rd section (call-in-action message)	<i>Emotional, personal text</i>	OR	<i>Rational, logical text version</i>

Label of the behaviour

For this study, two different versions of the label of the behaviour text section were created. Both versions explained the concept of anti-consumption. The main manipulation was the use of two different words to describe the same behavior: anti-consumption in one version and conscious-consumption in the second version (See Figure 2). The purpose of the manipulation was to find which word has a higher effect on the three dependent variables.

Anti-consumption stimulus	<i>"More and more people realize this and commit themselves to anti-consumption behavior. They try to resist the influence of marketing manipulations on their behaviors. Anti-consumption behavior involves downscaling consumption and behaving with environmental awareness and moral restraints on consumption choices. They only buy what they really need, and avoid unnecessary waste."</i>
Conscious-consumption stimulus	<i>"More and more people realize this and commit themselves to conscious-consumption behavior. They try to resist the influence of marketing manipulations on their behaviors. Conscious-consumption behavior involves downscaling consumption and behaving with environmental awareness and moral restraints on consumption choices. They only buy what they really need, and avoid unnecessary waste."</i>

Figure 2: Label of the behaviour stimuli

Message framing

The independent variable message framing was presented with two different versions of the same text. The content of the text showed what are the effects of the adoption of the anti-consumption behaviour are. In the first version, the text was positively oriented with a focus on the benefits gained by adopting the anti-consumption behaviour. In the second version, a negative orientation with a focus on the possible losses formed the content of the second stimulus (see Figure 3).

Positive stimulus	<i>“Adopting this behavior as a way of life will make a strong and beneficial contribution to the welfare of our planet. It will decrease energy and resource consumption and waste and consequently will lead to a global solution to many of the problems we are facing today (for example, global warming and deforestation)”.</i>
Negative stimulus	<i>“Not adopting this behavior as a way of life will have a strong and harmful effect on the welfare of our planet. It will further increase energy and resource consumption and waste and consequently will lead to an aggravation of many of the problems we are facing today (for example, global warming and deforestation)”.</i>

Figure 3: Message framing stimuli

Message appeal

The content of the last section was dedicated to the call-in-action message. As for the previous sections, this message was created in two different variations. The first one showed a more personal and emotional text, while the second one represented the rational appeal manipulation (see Figure 4).

Emotional appeal stimulus	<i>“Changing the world starts with small decisions you make every day. Next time you consider buying a new shirt or a new pair of shoes, ask yourself the question: Do I really need it? Why do I need to buy something new? Will it make me truly happier or is it just an illusion? Try to be more critical about the way you consume. You can make a difference!”</i>
Rational appeal stimulus	<i>“Changing the world starts with people’s daily and personal decisions. Each person on earth uses on average 22 kg of natural resources. Just deciding to decrease daily consumption has a strong impact on the health of the earth. People need to be more aware of the way they consume. Every human being can make a difference.”</i>

Figure 4: Message appeal stimuli

Figure 5 shows an example of one text with a combination of stimuli used in the main questionnaire.

INTRODUCTION (same for all the participants)	Our current consumption patterns have an enormous impact on the environment. We buy too much. We even tend to buy things we do not need. By doing so, we contribute to world problems such as pollution, climate change, extinction of species, and resource depletion. Western countries take more than they share. We are living at the expense of our children and grandchildren. For example, the number of natural resources retrieved to produce goods increases with 60 billion tons each year. We now use 50% more resources than only 30 years ago. This cannot go on like this. The future of our planet is at stake.
LABEL OF THE BEHAVIOUR (in this case the word anti-consumption is shown)	More and more people realize this and commit themselves to anti-consumption behavior. They try to resist the influence of marketing manipulations on their behaviors. Anti-consumption behavior involves downscaling consumption and behaving with environmental awareness and moral restraints on consumption choices. They only buy what they really need, and avoid unnecessary waste.
MESSAGE FRAMING (in this case a positive and gain oriented message is presented)	Adopting this behavior as a way of life will make a strong and beneficial contribution to the welfare of our planet. It will decrease energy and resource consumption and waste and consequently will lead to a global solution to many of the problems we are facing today (for example, global warming and deforestation).
MESSAGE APPEAL (in this case an emotional and personal message is presented)	Changing the world starts with small decisions you make every day. Next time you consider buying a new shirt or a new pair of shoes, ask yourself the question: Do I really need it? Why do I need to buy something new? Will it make me truly happier or is it just an illusion? Try to be more critical about the way you consume. You can make a difference!

Figure 5: example of main text

3.4 Pre-test: manipulation check

In order to develop the treatment conditions for the use of the label of the behaviour independent variable, the use of message framing independent variable and the use of the message appeal independent variable, the manipulation check was conducted to estimate if subjects perceive the stimuli material the way it was assumed in the study. In order to check how people perceived the manipulations, several questions were asked to specifically understand, for example, whether the negative message framing was perceived as loss oriented and whether the positive message framing was perceived as gain oriented, whether the label of the behavior was perceived to be radical or not, and whether the stimuli were seen as emotional or rational oriented. To test these manipulations, a short questionnaire was

created. 53 participants ($N=53$) filled in the survey. After a cleaning process of participants who did not fit the requirements for the survey (e.g., consent, missing demographic information, participants closing the questionnaire before the end), the outcomes of 42 participants ($N=42$) were analyzed with SPSS.

A reliability test (see Table 3.4.1) was done to ensure that the constructs used to conduct the manipulation checks were reliable. The items of label of the behaviour variable scored a positive Cronbach's Alpha value of .77. These results showed a good reliability level of the questions used to test the stimuli created for the independent variable. Also for the message framing, the reliability of the construct used to test this independent variable was measured and tested, here six items were analysed. The first reliability analysis showed a Cronbach's alpha value ($\alpha=.69$) below the minimum score for reliability ($\alpha=.70$). For this reason, one item was deleted to obtain a more reliable construct ($\alpha=.72$). Regarding the message appeal measurement, after the reliability analysis, two out of four items were deleted due to a very low Cronbach's alpha value ($\alpha<0.70$). In this case, during the analysis only the items testing the rationality of the conditions were considered because of a positive α -value ($\alpha=.70$). Table 3.4.1 shows an overview of the items used for the manipulation check.

Table 3.4.1: Overview of items used for the manipulation check

Manipulation	Cronbach's Alpha	Items
Label of the behaviour	.77	<ol style="list-style-type: none"> 1. The word in bold seems radical to me 2. The word in bold generates negative feelings 3. The word in bold sounds positive 4. The word in bold exaggerates the meaning of the described behaviour
Message framing	.72	<ol style="list-style-type: none"> 1. I perceive this message to have a positive orientation 2. After reading this message, I am feeling optimistic and hopeful 3. I think this message focuses strongly on problems 4. I think about bad consequences after reading this message 5. I think this message focuses strongly on solutions
Message appeal	.70	<ol style="list-style-type: none"> 1. The way the message is presented seems rational and logical to me 2. The message is more objective than personal

Subsequently, several independent sample t-tests were conducted to check whether the manipulations used in this test were successful. For the independent variable label of the behaviour, two different versions of the same message were created; one version containing the label of the behaviour “anti-consumption” and the second version with the label “conscious-consumption”. Different questions (see Table 3.4.1) were asked to understand whether participants distinguished the differences between manipulations. For example,

participants were asked to express their opinion regarding the sound-orientation (positive or negative sounding) of the label or regarding the perception about the radicalism of the behaviour. A significant difference ($p < .001$) (see Table 3.4.2) was found within the scores for “anti-consumption” and “conscious-consumption” conditions. These results led to the conclusion that the manipulations were successful and appropriate to be used in the main experiment; people perceived a difference between the use of the label “anti-consumption” and the label “conscious-consumption”.

Table 3.4.2: t-test results comparing anti-consumption and conscious-consumption label

Condition	N	Mean	SD	t	df	p
Anti-consumption	25	4.29	1.04	4.03	40	.000
Conscious-consumption	17	2.93	1.12			

Afterwards, another independent sample t-test was conducted to check whether participants distinguished between positive and negative messages conditions. For the independent variable message framing, two different versions of the message were created. The first condition (positive message) showed the benefits of adopting the anti-consumption behaviour while the second condition (negative message) informed people with the disadvantages of not adopting the behaviour. Therefore, people were asked to give their opinions (see again Table 3.4.1) regarding the perceived message orientation (positive/gain oriented or negative/loss oriented) and about their feelings after reading the text. Looking at the results of the independent sample t-test (see Table 3.4.3), a significant difference in the mean scores between positive framing and negative framing conditions was found. These results led to the conclusion that the manipulations were successful and people distinguished between a positive message oriented and a negative oriented one.

Table 3.4.3: t-test results comparing positive and negative messages

Condition	N	Mean	SD	t	df	p
Positive	13	4.39	.80	3.20	40	.002
Negative	29	3.23	1.19			

As for the previous variables, another independent sample t-test was conducted to check a significant difference in mean scores between message appeal conditions. Also, for this independent variable two different versions of the same text were created. The first condition was built using an emotional appeal and the second one with the use of a rational

appeal. In this case, people were asked (see Table 3.4.1) to express options regarding the rationality and the logic of the message. The outcomes of the independent sample t-test demonstrated a significant difference between the mean scores for emotional and rational appeal conditions (see Table 3.4.4). Therefore, a significant difference between the two stimuli was proven; people identified an emotional oriented message to be different from a rational one.

Table 3.4.4: t-test results comparing emotional and negative appeals

Condition	N	Mean	SD	t	df	p
Emotional	25	4.16	1.40	-1.98	40	.03
Rational	17	4.97	1.15			

3.5 Participants

To collect data, social media, e-mail or WhatsApp have been used. The use of this data collection allows to save time. Moreover, this approach is efficient for a large random sample and it is a low-priced tool to gather respondents. The participants were also encouraged to ask other people from their network to take part in the survey, which created a snowball effect. In total, 371 ($N=371$) subject participated in the experiment. Unfortunately, not all participants completed the survey, some of them closed the questionnaire before the last questions were answered ($n=126$) or some of them took less than 5 minutes or more than 1 hour to do the survey ($n=23$). After the cleaning process of the database, 222 ($N=222$) subjects resulted to be valid respondents. The sample for the main study included 97 men (44%) and 125 women (56%). Ages of participant differ from 15 to 66, with a mean age of $M=24.82$ ($SD=6.48$). The most relevant number of participants represented the study population.

The study participants were categorized in two groups: people who have obtained a “Low level” of education (primary education level, secondary education level and trade/technical/vocal training educational level) and people who have obtained a “High level” of education (undergraduate educational level and post graduated level of education). Accordingly, 128 (58%) study participants resulted to have a “High level” of education while 93 (42%) respondents resulted to have a low educational level.

32 different nationalities were involved in this study. Most of the participants claimed to be German ($n=64$, 29%), followed by Italian people ($n=49$, 22%), Mexican people ($n=34$,

15%) Dutch people ($n=30$, 14%), and participants from Belgium ($n=4$, 2%). 19% of participants claimed other nationalities.

Moreover, to ensure valid and reliable results, the data set was checked for significant outliers. According to a box-plot inspection of all responses on the dependent variables, a total of $n = 9$ outliers was found. Based on the large sample size ($N = 222$) it can be expected that values might appear in the lower and upper ends of the distribution. However, after a more specific analysis of outliers, one participant ($n=1$) was found to have answered all the questions by repeating the same answers all over the survey. Therefore, the decision to remove this participant from the dataset was taken.

Homogeneity between conditions

To test whether the sample characteristics were homogeneous over all the condition groups, the ANOVA tests and the Chi-square test were conducted. The results of the ANOVA analysis demonstrate that the distribution of the age of the participants did not have a significant difference ($\alpha > .05$) for all conditions groups ($F(7,21) < 1$, $p = .85$).

Additionally, a Chi-square test was conducted to investigate the difference between gender distribution inside the experimental condition groups. The outcomes of the test proved that the amount of female and male participants is equally distributed through all the experimental conditions ($X^2(7) > 3.07$, $p = 0.88$). Furthermore, a Chi-square test was also conducted to check the distribution of the educational level inside the condition groups. The results stated $X^2(7) > 7$, $p = .43$, which is higher than alpha level .05. This indicates that there are no differences in the distribution of education level between groups.

It can be concluded that all the participants who took part in this experiment are equally distributed through all experimental conditions.

Table 3.2: Demographic information

Demographic construct	ANTI-POS-EMO	ANTI-POS-RAT	ANTI-NEG-EMO	ANTI-NEG-RAT	CONS-POS-EMO	CONS-POS-RAT	CONS-NEG-EMO	CONS-NEG-RAT	TOT
GENDER, N (%)									
Male	13 (38%)	8 (32%)	12 (50%)	10 (42)	18 (46%)	15 (45%)	13 (52%)	8 (44%)	97 (44%)
Female	21 (62%)	17 (68%)	12 (50%)	14 (58%)	21 (54%)	18 (55%)	12 (48%)	10 (56%)	125 (56%)
AGE, M									
	24	24	25	25	26	24	25	25	
EDUCATION, N (%)									
Low level	19 (56%)	13 (52%)	11 (46%)	10 (42%)	14 (36%)	13 (41%)	8 (32%)	5 (28%)	93 (42%)
High level	15 (44%)	12 (48%)	13 (54%)	14 (58%)	25 (64%)	19 (59%)	17 (68%)	13 (72%)	128 (58%)

3.6 Measures

Several 7-point Likert scales were used to measure the dependent variables and the moderator variable. Table 3 shows all the reliable constructs validated after the factor analysis. Accordingly, participants needed to indicate to what extent they agree or disagree with the specific statement.

Attitude towards the behavior

For the attitude towards the behavior measurement (see Table 3.3), items 1, 2, and 3 have been adapted from the work of Sengupta and Johar (2002) to test the consumer's opinion of a certain brand of a product. From Items 4 to 6 the scale is adapted to an already existing scale measuring the "attitude towards green products" (environmental benefits) (Chang, 2011). This part of the scale is indented to test consumer's beliefs regarding the positive effects of anti-consumption. The other items have been created according to the goal of this research and coherent with people general attitude towards the behaviour. Moreover, a second section of the Likert-scale testing the attitude towards the behaviour has been used to test the feeling of favorableness or unfavorableness towards performing the behaviour. This second section has been adapted from the work of Shirley and Todd (1995). (see Appendix A)

Behavioural intention

For the behavioural intention measurement (see Table 3.3), the first three items were adapted from an already existing scale testing the intention to use a system in the future (Sykes, Venkatesh, & Gosain, 2009). The items from 4 to 6 are adapted from a scale to test the user's intention to use a new system (Yogesh, 2008). In this case, it was interesting to know if people are interested to adopt the anti-consumption behaviour in the future. (see Appendix A)

Impact on perceived comprehensiveness of the behaviour

Regarding the impact on perceived comprehensiveness of the behaviour measurement, two different scales were created due to the absence of an already existing scale. The first scale aimed to measure a more holistic view of the impact on perceived comprehensiveness of the behaviour. In this scale, several questions were asked how people perceived the general impact of the behaviour on daily life. The second scale focused more on specific consumption behaviours related or not with the anti-consumption behaviour.

Given specific actions, the goal was to understand whether people perceived the meaning of the behaviour to be the same within the different conditions of the experiment (see Appendix A)

Environmental concerns

Environmental concerns have been treated as an evaluation of, or an attitude towards facts, one's own behaviour, or others' behaviour with consequences for the environment (Weigel, 1983). It seems then, as if environmental concerns may refer to both, a specific attitude directly determining intentions or more broadly to a general attitude and value orientation. The scale used in the questionnaire is based on the work of Dunlap and Van Liere (1978). Four items have been taken from the NEP scale and combined with new items. (see Appendix A)

The items were developed with the concern of the research questions and the scenario of the current study to provide high content validity. After the scales creation, a factor analysis was conducted to test the validity of the constructs. After the first analysis, eight different factors were found, subsequently, the items that measured different factors were removed to guarantee the validity of each construct. With a second factor analysis, the five expected construct resulted to be valid (see Appendix B for the final Factor Analysis).

Additionally, the reliability check was conducted to examine the scale's Cronbach's alpha. The analysis demonstrated that the internal reliability of the constructs 'attitude towards anti-consumption behaviour', 'behavioural intention', 'perceived behavioural impact on people's daily life (general)', 'perceived behavioural impact on people's daily life (specific)', and 'environmental concerns' were all above .70. Therefore, all constructs of the dependent variables were sufficiently reliable to be used in this research.

The scale items used for each dependent variable construct with Cronbach's Alpha, means, and standard deviations are shown in Table 3.3.

Manipulation check

Also, the reliability of the manipulation check questions used in the main questionnaire was tested. The manipulation check questions were used to determine if the manipulation were perceived as such also in the final experiment (e.g., negative message perceived as negative (loss) oriented, the emotional message as emotional etc.). Based on the highest scored values, only some of the questions used in the previous manipulation check

(see Table 3.3) were used again in the main questionnaire. All the constructs adapted, scored a Cronbach's alpha level of at least .70: 'label of the behaviour' ($\alpha = .70$), 'message framing' construct ($\alpha = .77$), and 'message appeal' construct ($\alpha = .75$). Therefore, it was possible to conclude the validity of each adopted construct to measure the manipulation check questions.

Table 3.3: Constructs: reliability scores, mean scores, standard deviations values and items

Construct		Cronbach's Alpha	M (SD)	Items
Attitude towards anti-consumption behaviour		0.83	33.9 (5.58)	<ol style="list-style-type: none"> 1. Adopting the behaviour is a: bad idea – good idea 2. Adopting the behaviour is a: foolish idea – wise idea 3. I think this behaviour is a very good solution for environmental issues 4. This behaviour is very useful to prevent the side-effects of excessive consumption 5. The behaviour is good for the environment 6. The behaviour can effectively reduce pollution
Behavioural intention		0.90	26.2 (5.87)	<ol style="list-style-type: none"> 1. I intend to adopt the behaviour in my daily life. 2. I predict I would adopt the behaviour in the next months. 3. I plan to adopt the behaviour in the next months. 4. I intend to reduce the number of clothes I usually purchase 5. I intend to reject unnecessary purchases
Impact on perceived comprehensiveness of the behaviour (General)		0.74	15.6 (4.59)	<ol style="list-style-type: none"> 1. Adopting the behaviour will extremely change my life 2. Adopting the behaviour will have a huge impact on my consumption behaviour 3. Adopting the behaviour will ask me a lot of efforts 4. Adopting the behaviour will radically make the quality of my life worse
Impact on perceived comprehensiveness of the behaviour (Specific)		0.70	30 (3.98)	<ol style="list-style-type: none"> 1. Resist to marketing influences 2. Consume just what is necessary 3. Avoid consuming more than you need 4. Refuse to buy two shirts when you just need one (even if there was a promotion) 5. For the new sales-season, avoid a compulsive consumption
Environmental concerns		0.75	23.8 (3.63)	<ol style="list-style-type: none"> 1. Humans are severely abusing the environment 2. The earth is like a spaceship with only limited room and resources 3. When people interfere with nature, it often produces disastrous consequences 4. The balance of nature is very delicate and easily upset
Manipulation check questions	Label of the behaviour	0.70	9.5 (3.09)	<ol style="list-style-type: none"> 1. The name of the behaviour seems radical to me 2. The name of the behaviour generates negative feelings
	Message framing	0.77	10.5 (2.47)	<ol style="list-style-type: none"> 1. I perceived this message to have a positive orientation 2. I think this message focuses strongly on solutions
	Message appeal	0.75	10.5 (2.45)	<ol style="list-style-type: none"> 1. The way the message is presented seems rational and logical to me 2. The message is more objective than personal

Note: 7-point Likert scales were used to measure the items above (1=strongly disagree to 7=strongly agree)

4. Results

In this section, the outputs from the current experiment are presented. Using SPSS 23, various statistical tests were conducted with the aim to test the hypotheses. Firstly, the control questions were checked to understand whether the manipulations were perceived correctly by the participants. Subsequently, several ANOVAs were conducted to analyse the effect of the independent variables on the dependents ones. In the end, the moderation analysis was executed. For each of the analysis, an alpha level of .05 was used.

4.1 Manipulation check

For the independent variable label of the behaviour, an independent-samples t-test was conducted to check any significant difference between the means of the two different conditions (anti-consumption/conscious-consumption). The results of the test showed a significant difference in the mean scores (see Table 5) for ‘anti-consumption and ‘conscious-consumption’ conditions; $t(220)=6.91$, $p < 0.001$. Therefore, it was concluded that participants perceived the label anti-consumption to be more radical compared with the label conscious-consumption and the different conditions were properly manipulated.

Another independent-sample t-test was run in order to check any significant difference in means scores between the two manipulations (positive/negative message) used for the independent variable message framing. Looking at the SPSS results, no significant difference between the mean scores of ‘positive frame’ and ‘negative frame’ conditions was found (see Table 4.1), $t(220)=1.54$, $p=.13$. This result shows that people were not able to significantly distinguish the two different manipulations adopted for the independent variable message framing. For example, when the message was positive oriented, participants did not recognize the positive message to be different from the negative message.

Also for the manipulations of the message appeal, no significant difference between the mean scores (see Table 4.1) of the emotional appeal condition and rational appeal condition was found, $t(220)=-.68$, $p=.53$. Therefore, when the appeal of the message was emotional, people did not distinguish it from the rational message. This result lead to the conclusion that in the main experiment, the manipulations of the message appeal and the message framing were unsuccessful and unclear to the participants. These outcomes were important and necessary to consider because their possible impact on the main finding of this study. These results are subsequently discussed in the discussion section.

Table 4.1: Difference between conditions, N, Mean, SD

		N	Mean	Std. Deviation
Label of the behaviour	Anti-consumption	107	4.10	1.35
	Conscious-consumption	115	2.80	1.46
Message framing	Positive	131	5.35	1.26
	Negative	91	5.09	1.18
Message appeal	Emotional	122	5.22	1.30
	Rational	100	5.32	1.13

4.2 Attitude towards the behaviour

In order to analyse and understand the main effects of the independent variables on the attitude towards the behaviour, ANOVA was conducted. Table 4.2.1 shows an overview of the tests of between-subjects effects.

Table 4.2.1: Tests of Between-Subjects Effects - Attitude towards the behaviour

	Tests of Between-Subjects Effects			
	F	df	Sig.	Partial Eta Squared
Label of behaviour	.19	1,214	.67	.001
Message framing	.77	1,214	.38	.004
Message appeal	1.88	1,214	.18	.008
Message appeal * Label of behaviour	.02	1,214	.89	.000
Message appeal * Message framing	.27	1,214	.64	.001
Label of behaviour * Message framing	.11	1,214	.74	.001
Message appeal * Label of behaviour * Message framing	4.01	1,214	.05	.018

The outcomes of ANOVA showed no main effects of the independent variables on the attitude towards the behaviour ($p > .05$). Before the data collection, it was assumed that the independent variables would have had a significant effect on the attitude towards the behaviour. More specifically, it was hypothesized that the use of, a negative message (H1a), a rational message (H2a), and the label conscious-consumption (H3a) would have led to higher scores towards the attitude towards the behaviour. However, due to the outcomes of the ANOVA, H1a, H2a, and H3a were rejected.

However, an interaction effect was found between the label of the behaviour, message appeal, and message framing ($F(1,214)=4.01, p=.05$).

Table 4.2.2 shows the mean scores of experimental conditions within the interaction of the label of the behaviour, message appeal, and the message framing. According to the results, it is possible to see that the use of the label conscious-consumption, a positive message, and a rational message is the most efficient combination ($M=5.92$, $SD=.16$) for positively influencing the attitude towards the behaviour. On the other hand, the use of the word anti-consumption combined with a negative message and an emotional message is the least effective combination ($M=5.32$, $SD=.19$).

Table 4.2.2: Mean scores and SD of experimental conditions

Label of the behaviour	Message framing	Message appeal	Mean	Std. Error
Anti-consumption	Positive	Emotional	5.71	.16
		Rational	5.58	.19
	Negative	Emotional	5.32	.19
		Rational	5.83	.19
Conscious-consumption	Positive	Emotional	5.56	.15
		Rational	5.92	.16
	Negative	Emotional	5.61	.19
		Rational	5.57	.22

4.3 Behavioural intention

The main effects of the independent variables on the behavioural intention were analysed with ANOVA. The effect of the independent variables on the dependent variable behavioural intention was analysed. Table 4.3.1 shows an overview of the main effects. In this case, only the independent variable message appeal had a significant main effect on the behavioural intention ($F(1,214)=4.69$, $p=.03$). It was assumed that the use of a rational appeal would have led to a higher effect on behavioural intention compared with the use of an emotional appeal (H2b). According to the outcomes of ANOVA and descriptive statistics analyses (see Table 4.3.2), hypothesis H2b was confirmed.

Table 4.3.1: Tests of Between-Subjects Effects - Behavioural Intention

	Tests of Between-Subjects Effects			
	F	df	Sig.	Partial Eta Squared
Label of behaviour	.00	1,214	.98	.000
Message framing	.34	1,214	.56	.002
Message appeal	4.69	1,214	.03	.022
Message appeal * Label of behaviour	5.72	1,214	.02	.026
Message appeal * Message framing	.00	1,214	.97	.000
Label of behaviour * Message framing	.00	1,214	.96	.000
Message appeal * Label of behaviour * Message framing	1.17	1,214	.28	.005

Table 4.3.2: Mean scores and SD of experimental conditions

Emotional appeal	Mean	St. Error
Emotional	5.08	.19
Rational	5.42	.12

Additionally, an interaction between message appeal and label of behaviour was found ($F(1,214)=5.72$, $p=.02$). In Table 4.3.3, the mean scores of experimental conditions within the interaction of the label of the behaviour and the message appeal are shown. In both rational and emotional condition, the label conscious-consumption did not particularly differ. More interesting is the significant difference in means of the label anti-consumption between conditions (emotional-rational). Overall, the combination of the label anti-consumption with a rational message resulted to be the best combination for positively influencing behavioural intention.

Table 4.3.3: Mean scores and SD of experimental conditions

Experimental condition	Emotional		Rational	
	Mean	St. Error	Mean	St. Error
Anti-consumption	4.89	.16	5.62	.17
Conscious-consumption	5.27	.15	5.23	.17

4.4 Impact on perceived comprehensiveness of the behaviour

Another ANOVA was conducted to analyse and understand the main effects of the independent variables on the dependent variable impact on perceived comprehensiveness of the behaviour.

Table 4.4.1 and Table 4.4.2 show the main effects of the independent variables on perceived comprehensiveness of the behaviour (general and specific). In this case, no significant effects were found within all the conditions ($p > .05$).

It was assumed that the use of the label ‘conscious-consumption’ would have had less impact on perceived comprehensiveness of the behaviour (H3c). However, the results provided by ANOVA led to the rejection of hypothesis H3c.

Table 4.4.1: Tests of Between-Subjects Effects – Impact on perceived comprehensiveness of the behaviour (General)

	Tests of Between-Subjects Effects			
	F	df	Sig.	Partial Eta Squared
Label of behaviour	.28	1,214	.59	.001
Message framing	.00	1,214	.98	.000
Message appeal	2.72	1,214	.10	.013
Message appeal * Label of behaviour	.00	1,214	.96	.000
Message appeal * Message framing	.01	1,214	.98	.000
Label of behaviour * Message framing	2.02	1,214	.16	.009
Message appeal * Label of behaviour * Message framing	.22	1,214	.64	.001

Table 4.4.2: Tests of Between-Subjects Effects - Impact on perceived comprehensiveness of the behaviour (Specific)

	Tests of Between-Subjects Effect			
	F	df	Sig.	Partial Eta Squared
Label of behaviour	.39	1,214	.53	.002
Message framing	1.63	1,214	.20	.008
Message appeal	1.27	1,214	.26	.006
Message appeal * Label of behaviour	.67	1,214	.41	.003
Message appeal * Message framing	.05	1,214	.83	.000
Label of behaviour * Message framing	.02	1,214	.90	.000
Message appeal * Label of behaviour * Message framing	1.26	1,214	.26	.006

4.5 Moderation analysis

The aim of the moderator analysis was to analyse whether the relationship between independent variables and the dependent variables were influenced by the moderator environmental concerns. To conduct the moderator analysis, the PROCESS function by Hayes (2012) was used on SPSS 23. Due to the research model's structure of this study, Model 1 of PROCESS analysis was adopted.

To prevent a loss in information and a reduction in statistical power to detect a relationship between the independent and the dependent variable, the environmental concern variable was kept as a continuous instead of being transformed in a categorical one (Altman & Royston, 2006). However, to detect a positive or a negative level of environmental concerns, a descriptive analysis was run to see what the median score of this variable was (see Table 4.5). Because the median was 6, it was shown that the majority of the participants had a positive level of environmental concerns (scores above 4 based on 1 to 7 Likert-scale). Therefore, the decision was to consider people who scored a level below 6 as people with a moderate level of environmental concerns and participants who scored a result from score 6 to 7 as people with a high level of environmental concerns.

Table 4.5: Frequencies environmental concerns

	Environmental concerns
N	221
Median	6

4.5.1 Moderation effect between label of the behaviour and dependent variables

The first moderator analysis was conducted to detect whether the relationship between the independent variable label of the behaviour and dependent variables was moderated by the variable environmental concerns. Table 4.5.1 shows that no moderation effects exist between variables ($p > .05$).

Table 4.5.1: Moderator analysis, Label of the behaviour*environmental concerns

	Moderator analysis			
	r2	F	df1/2	p
Attitude towards the behaviour	.00	.57	1,217	.45
Behavioural intention	.00	.03	1,217	.87
Impact on perceived comprehensiveness of the behaviour (General)	.00	.02	1,217	.88
Impact on perceived comprehensiveness of the behaviour (Specific)	.00	.78	1,217	.38

4.5.2 Moderation effect between message framing and dependent variables

To indicate whether the relationship between the independent variable message framing and dependent variables was moderated by the variable environmental concerns, a second moderator analysis was conducted. As Table 4.5.2 shows, a significant interaction effect was found between message framing and environmental concerns on the dependent variable impact on perceived comprehensiveness of the behaviour (Specific), ($F(1,22)=5.77$, $p=.02$). In this case, it was possible to see that a significant moderation effect ($p<0.05$) was found in the score 5 of environmental concerns and above score 6. Therefore, it was concluded that a moderate level, as well as a high level of environmental concern had a moderation effect between message framing and environmental concerns on the dependent variable impact on perceived comprehensiveness of the behaviour (specific). However, as Figure 6 shows, the moderation effect is more significant when people have a moderate level of environmental concerns (between score 5 and 6). In this case the use of a positive message has a significant influence on impact on perceived comprehensiveness of the behaviour (specific). Nonetheless, when the level of people's environmental concerns is significantly high, the use of a negative message is slightly more efficient.

Table 4.5.2: Moderator analysis, message framing*environmental concerns

	Moderator analysis			
	r2	F	df1/2	p
Attitude towards the behaviour	.00	.26	1,217	.61
Behavioural intention	.00	.48	1,217	.49
Impact on perceived comprehensiveness of the behaviour (General)	.00	.63	1,217	.43
Impact on perceived comprehensiveness of the behaviour (Specific)	.02	5.77	1,217	.02

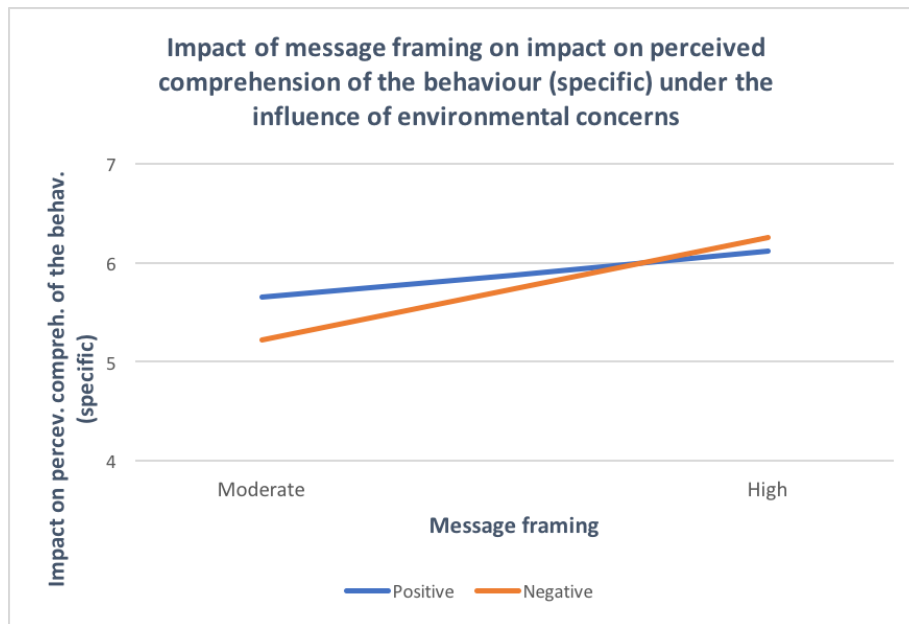


Figure 6: Impact of message frame on the perceived behavioural impact on people's daily life (specific) under the influence of environmental concerns

4.5.3 Moderation effect between message appeal and dependent variables

Another moderator analysis was run to explore the moderating effect of environmental concern on the interaction between message appeal and dependent variables. Table 4.5.3 shows an overview of the results.

Table 4.5.3: Moderator analysis, message appeal*environmental concerns

	Moderator analysis			
	r ²	F	df1/2	p
Attitude towards the behaviour	.02	4.52	1,217	.04
Behavioural intention	.01	3.99	1,217	.05
Impact on perceived comprehensiveness of the behaviour (General)	.00	0.94	1,217	.76
Impact on perceived comprehensiveness of the behaviour (Specific)	.00	.73	1,217	.40

The first interaction effect was found on the attitude towards the behaviour ($F(1,217)=4.52, p=.04$). In this case, a moderate level of environmental concerns (below score 6) had a significantly high moderation effect on the relationship between message

appeal and attitude towards the behaviour. As the Figure 7 shows, the use of a rational message has a considerable high impact on behavioural intention when the level of people's environmental concerns is moderate. Nonetheless, with a significantly high level of environmental concerns, the use of an emotional message results to be slightly more efficient.

Additionally, a second interaction effect (see Table 4.5.3) was spotted on the behavioural intention ($F(1,217)=3.99, p=.05$). With the analysis of the conditional effects, it was difficult to define for which condition ('Moderate' or 'High') the moderator was significant. Due to a significant effect ($p<.05$) on score 5 and score 6 it can be assumed that both 'Moderate' and 'Moderately high' levels of environmental concerns moderate the relationship between message appeal and behavioural intention. As the Figure 8 shows, the use of a rational message has a higher impact on behavioural intention when the level of people's environmental concerns is moderate. Nonetheless, when the level of environmental concerns is considerable high, the use of a different appeal (rational or emotional) is not relevant.

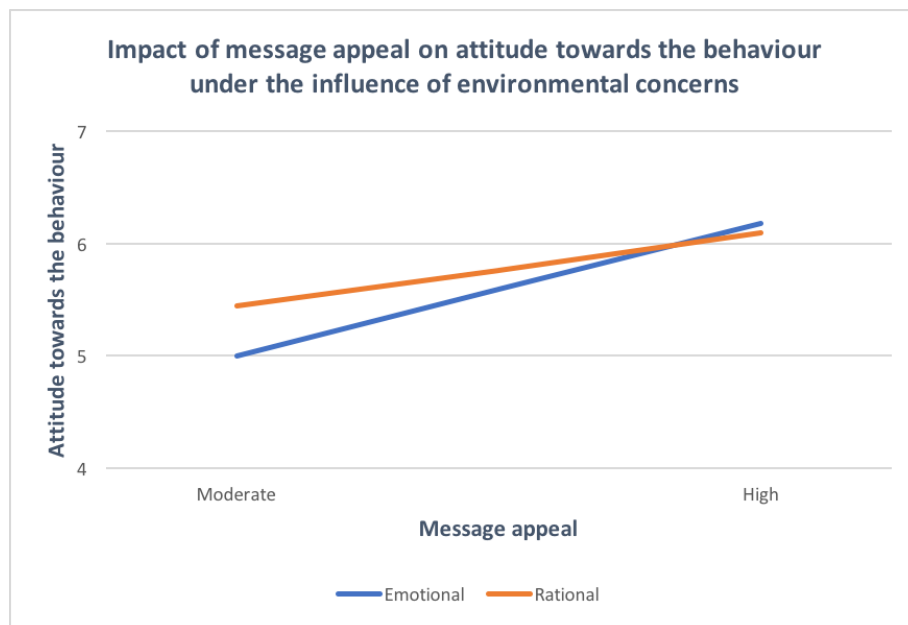


Figure 7: Impact of message appeal on attitude towards the behaviour under the influence of environmental concerns

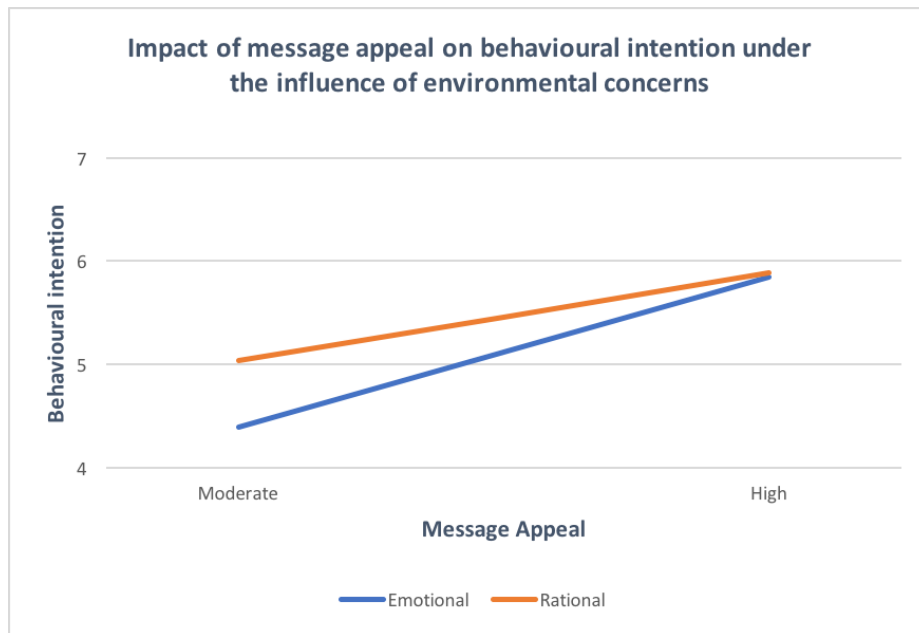


Figure 8: Impact of message appeal on behavioural intention under the influence of environmental concerns

5. Discussion

The goal of this study was to find out to what extent communication variables (message framing, message appeal, and label of the behaviour) play a role in communicating a specific pro-environmental behaviour. More specifically, this study analysed how to better communicate the anti-consumption behaviour. To achieve this objective the following research question has been set: “To what extent do communication variables (message framing, message appeal, and label of the behaviour) influence consumers’ attitude towards the behaviour, behavioural intention, and impact on perceived comprehensiveness of the behaviour?”. This question was answered with an experimental 2x2x2 between-subject design. First, the main findings of this research will be discussed with an overview of the tested hypotheses. Second, theoretical implications will be stated. Third, the limitations and suggestions for further research are provided. In the end, the conclusion of this research will be given.

5.1 Main findings

Based on the findings of Levin et al. (1998), and Ferguson and Gallagher (2007) it was expected that the use of message framing, more specifically the use of a negative framework (loss oriented message) had a more positive influence on the attitude towards the behaviour and behavioural intention. This assumption was also confirmed by the works of Chang et al. (2015) and White et al. (2011) that discovered a more powerful effect of a rational message while promoting behaviours with a pro-environmental impact. However, no significant effect of the message framing (see Table 4.2.1 and Table 4.3.1) was found in this study. The use of a negative message did not significantly influence the attitude and the behavioural intention towards the anti-consumption behaviour. Therefore, hypotheses H1a and H2a were rejected (see Table 5). A possible explanation for these results might be the negative outcomes of the manipulation checks in the main study. People were not properly able to distinguish when the message was positive or negative. Therefore, it was difficult to conclude whether the independent variable message framing did not have any significant general effects on communicating the anti-consumption behaviour. Or if the insignificance of the effects occurred due to an inefficient use of the manipulations (positive and negative messages). Yet, it was interesting to find out that the interaction between label of the behaviour, message framing, and message appeal had a significant effect on attitude towards the behaviour (see Table 4.2.1). Taking a close look at the mean scores of the different

independent variable combinations, the use of the label conscious-consumption, a positive message, and a rational message was the most efficient combination for positively influencing the attitude towards the behaviour (see Table 4.2.2). It was assumed, due to previous studies, that a negative message would have had a more positive effect on the attitude towards the behaviour, however the uniqueness of the anti-consumption behaviour and the combination of message framing with different variables (message appeal and label of the behaviour) led to different outcomes.

Another assumption for this study was based on the findings from Aaker and Norris (1982) and Dahlstrom (2011) that demonstrated how the use of message appeal, specifically the use of a rational appeal led to more positive outcomes while promoting pro-environmental behaviour. Moreover, Coad et al. (2009), indicated that consumers provided with more information and logical explanations (rational appeal), and consequentially with deeper knowledge about a certain environmental problem, feel greatly involved and willing to adopt a pro-environmental behaviour. For this study, these assumptions resulted to be valid only when related to the dependent variable behavioural intention (see Table 4.3.1 and Table 4.3.2). In this case, the use of message appeal (rational appeal) variable led to a more positive effect on behavioural intention. However, it is necessary to consider the negative outcomes of the manipulation checks. Participants did not properly distinguish a rational appeal from an emotional appeal. Although Sigall and Mills (1998) argued that failed manipulation checks do not constitute definitive evidence against the favored explanation, the negative outcomes of this test (manipulation check) needed to be mentioned. Overall, due to the only positive effect of the rational appeal on the behavioural intention, the hypothesis H2b was confirmed while the hypothesis H2a (“A rational appeal has a more positive influence on attitude towards the behaviour compared to an emotional appeal”) was rejected. Once again, the uniqueness of the anti-consumption behaviour could have played a different role compared with previous studies related to different pro-environmental behaviours. However, even though a rational message appeal used alone did not have significant effects on all the dependent variables, a significant interaction effect between message appeal and the label of the behaviour (see Table 4.3.1) was found. As shown in Table 4.3.3, the use of the rational appeal combined with the anti-consumption label resulted in a more positive impact on the willingness to adopt the behaviour (behavioural intention).

The assumptions related to the label of the behaviour were based on the studies of the effects of phonetic symbolism on brand name preferences. Lowrey and Shurm (2007) demonstrated how the sounds of words can change people perceptions and judgments, and

specifically the possibly pervasive effect of a preference for positive-sounding words over negative-sounding words (Smith, 1998). According to these studies, this research assumed that the positive-sounding word ‘conscious-consumption’ would have led to a more positive effect on all the dependent variables. However, according to the results (see Table 4.2.2, Table 4.3.1, Table 4.4.1, and Table 4.4.2) the label of the behaviour did not have significant effects towards the dependent variables. Thus, hypotheses H3a, H3b, and H3c were rejected. For this study, the rejection of these hypotheses could have several possible interpretations. A possible explanation for the insignificant effects of the label of the behaviour on dependent variables could be that the research participants did not perceive the two words (anti-consumption and conscious-consumption) to have different meanings. It might be assumed that both labels were perceived to be coherent with the promoted behaviour and no differences in the meaning were found between them. Therefore, when other communication variables are not included in the message, both labels (positive and negative sounding) could be equally used to describe the behaviour. However, different deductions can be drawn when the label of the behaviour is combined with other variables. For example, in this study an interaction effect between the label of the behaviour and message appeal was found related to behavioural intention (see Table 4.3.1). In this case, the use of a negative-sounding word anti-consumption resulted to have a more positive effect on behavioural intention when combined with a rational message (Table 4.3.3). Indeed, the use of the label anti-consumption and a rational message resulted to be the best combination to enhance the willingness to adopt the behaviour. Differently, when the label of the behaviour is combined with a positive message, and a rational message, the word conscious-consumption resulted to be more effective to enhance the attitude towards the behaviour (see Table 4.2.2)

Based on previous studies (Chyong et al., 2006, Bamberg, 2003) it was assumed that people with positive levels (moderate or highly moderate levels) of environmental concerns would have had a higher interest in the anti-consumption behaviour. More specifically, a positive level of environmental concerns would have led to more positive moderation effects between independent variables and attitude towards the behaviour and behavioural intention. The outcomes of this research showed that these assumptions were not true in every case. Table 4.5.3 shows that only the interaction between message appeal and environmental concerns led to a moderation effect on attitude towards the behaviour and behavioural intention. In both cases (see Figure 7 and Figure 8), it was interesting to see that the use of a different message appeal (emotional or rational) was significant only when people had moderate or highly moderate levels of environmental concern. In these cases, a rational

appeal resulted to be more efficient while communicating the behaviour. However, when the research participants scored a considerably high level of environmental concerns, the use of different appeals to communicate the behaviour was not significant (Figure 8) or even the preference for a specific appeal could be reversed (preference for emotional appeal instead of a rational one, see Figure 7). Therefore, it can be assumed that the use of different appeals can play a significant role when people have a moderate or highly moderate level of environmental concerns, but when the level is considerably high, people are not influenced by any specific type of message appeal. Most probably, when people are considerably concerned about the environment, the adoption of a pro-environmental behaviour (in this case anti-consumption) is obvious and the way the behaviour is promoted is not important.

Overall, only hypotheses H4c and H4d were supported while hypotheses H4a, H4b, H4e, H4f, H4g were rejected. A possible explanation is that only the message appeal had significant main effects towards dependent variables and consequently the only one that can be tested for existing moderation effects.

Table 5 shows an overview of the tested hypotheses and their evaluations.

Table 5: Overview of tested hypotheses

Hypotheses		Result
H1	H1a Negative message framing (loss oriented) has a more positive influence on attitude towards the behaviour compared with positive message framing (gain oriented).	Rejected
	H1b Negative message framing (loss oriented) has a more positive influence on behavioural intention compared with positive message framing (gain oriented).	Rejected
H2	H2a A rational appeal has a more positive influence on attitude towards the behaviour compared with emotional appeal	Rejected
	H2b A rational appeal has a more positive influence on behavioural intention compared with emotional appeal	Supported
H3	H3a The use of the label ‘conscious-consumption’ has a more positive influence on attitude towards the behaviour compared with the label ‘anti-consumption’	Rejected
	H3b The use of the label ‘conscious-consumption’ has a more positive influence on behavioural intention compared with the label ‘anti-consumption’	Rejected
	H3c The behaviour, presented with the label “conscious-consumption” has less impact on perceived comprehensiveness of the behaviour than the behaviour presented with the use of the label “anti-consumption”	Rejected
H4	H4a A high level of participant’s environmental concerns has a more positive moderating effect between the message framing and the attitude towards the behaviour than a negative level of environmental concerns.	Rejected
	H4b A high level of participant’s environmental concerns has a more positive moderating effect between the message framing and the behavioural intention than a negative level of environmental concerns.	Rejected
	H4c A high level of participant’s environmental concerns has a more positive moderating effect between the message appeal and the attitude towards the behaviour than a negative level of environmental concerns.	Supported
	H4d A high level of participant’s environmental concerns has a more positive moderating effect between the message appeal and the behavioural intention than a negative level of environmental concerns.	Supported

H4e	A high level of participant's environmental concerns has a more positive moderating effect between the label of the behaviour and the attitude towards the behaviour than a negative level of environmental concerns.	Rejected
H4f	A high level of participant's environmental concerns has a more positive moderating effect between the label of the behaviour and the behavioural intention than a negative level of environmental concerns.	Rejected
H4g	A high level of participant's environmental concerns has a more positive moderating effect between the label of the behaviour and the perceived behavioural impact on people's daily life than a negative level of environmental concerns.	Rejected

5.2 Theoretical contribution

Previous research on communicating pro-environmental behaviours (Chang et al., 2015, Dahlstrom, 2011, Coas et al., 2009) mainly tested the single effects of message framing and message appeal without combining them. For example, in a study conducted to understand the best way to create green-marketing advertisements (Chang et. al., 2015), only the variable message framing was considered. In another study conducted to analyse the green-products purchase intentions, the variable message appeal was considered alone. In this study, different stimuli representing the combination of the communication variables were created and analysed to understand their role while communicating a new pro-environmental behaviour. The key implication of this paper was indeed the combination of these communication variables in promoting a pro-environmental behaviour and the possible interaction effects between these variables. Different outcomes were found and new scenarios were explored between the combination of these variables. For example, it has been demonstrated that when message appeal and message framing are combined (positive framing and rational appeal plus the use of another communication variable), different outcomes resulted from what was previously expected. The discovered interaction effect between message appeal and message framing on the attitude towards the behaviour could be an important theoretical contribution to consider when communicating a new pro-environmental behaviour.

Understanding which label of the behaviour best fits the meaning of the anti-consumption behaviour was important. While different marketing studies tried to identify the best way to create efficient brand names (Wienkielmann et al., 2000), no literature was found regarding which kind of label fits best to promote a behaviour. Still, in the marketing field it was demonstrated that people prefer positive-sounding words for brand names (Lowrey & Shrum, 2007). Therefore, based on this reasoning, it was assumed that the use of a positive sounding word would as well have led to higher preferences while communicating

the anti-consumption behaviour. Different from what expected, the use of positive-sounding words resulted to not always be the best option. While communicating a specific pro-environmental behaviour, the efficacy of a certain label demonstrated to vary according to other communication variables (message framing and message appeal). Although it was not possible to draw a conclusion regarding to which of the two labels (positive or negative sounding) used in this study was the most efficient, it was discovered that the preference for either a positive-sounding word or a negative-sounding word varies according to the combination of other communication variables (message framing and message appeal).

Additionally, the moderating effect of environmental concern was explored with a focus on the relationship between independent variables and dependent variables. In several studies (Bamberg, 2003, Chyong et al., 2007), a positive level (moderate to high level) of environmental concerns was demonstrated to have a positive moderation effect (Bamberg, 2003). As a theoretical contribution, in this study it was found that a high level of environmental concerns does not always have a significant effect. Indeed, it was shown that significant moderation effects were present only in the combination with message appeal. Moreover, it was interesting to see that the preferences for the type of message considerably varied in line with the positive level of people's environmental concerns.

Due to a lack of research conducted to better understand how to communicate the anti-consumption behaviour, and more generally a lack of studies related to the anti-consumption behaviour itself, this study could be considered as a starting point for further research. Especially nowadays, an important and necessary behaviour as anti-consumption needs to be promoted and people should be sensitised to the benefit this behaviour can provide for the sake of the environment.

5.3 Limitations and recommendations for future research

Before advancing to the conclusion, limitations of this study and recommendations for further research are mentioned.

First, the manipulations adopted in this study did not result to be completely clear to the participants. In the main questionnaire, the same stimuli used as in the first manipulation check were not as clearly distinguishable as predicted. The manipulations and the stimuli created (different texts for each condition) for the independent variables message appeal and message framing were not clear enough to assume that participants recognized the experimental conditions, for example when the stimulus presented was supposed to be

negative instead of positive oriented or when a message was designed to have emotional or rational connotation. However, in the first manipulation check conducted before the main experiment, the outcomes were positive. The participants distinguished and properly recognized the stimuli created. Different outcomes were found in the first manipulation check and in the main test this could have played a key role in the results of this study. In further research, it is advisable to focus on a better creation and development of the different texts to present in the study. In future studies, it could be interesting to include also visual elements to communicate the behaviour, for example by adding some images to the stimuli presented in the questionnaire.

Second, the sample required for this study (2x2x2 between-subjects experimental design) was at least 240 valid participants. The data of 371 participants were collected, however, after the data-set cleaning process and the removal of outliers, only the answers of 221 participants turned out to be valid and usable in this study. A possible explanation could be the lack of channels adopted to collect data. Since this study was part of a master's thesis, the way participants were collected was limited due to a lack of funding and resources. For a further research, a more significant number of valid respondents might be ensured, and the use of more distribution channels should be adopted.

Third, it is important to point out that most participants who filled in the survey were highly educated. For this reason, following research should consider some criticisms about the generalization of the studies done with student participants (Wells, 1993).

Lastly, another important factor to consider was the language of the study. The English language was used to build the survey and the experiment. Checking the nationalities of the participants, only few people were native English speakers. This is important because it is not possible to ensure that all the participants totally understood the stimuli presented, the questions asked and the overall meaning of the entire behaviour promoted. For further research, it is advisable to better control the participants' fluency in the language used in the experiment. It could be possible, for example just asking participants who are from nationalities where the language used for the experiment is spoken.

5.4 Conclusions

The conclusion towards the central question will now be reached. The research question of this research is: *“To what extent do communication variables (message framing, message appeal, and label of the behaviour) influence consumers' attitude towards the*

behaviour, behavioural intention, and impact on perceived comprehensiveness of the behaviour?”

In this study, it was found that the use of message appeal has a main effect on people's behavioural intention to adopt the behaviour while communicating the anti-consumption behaviour. More specifically, when people are presented with rational messages (more logic and objective), the effect is positively higher compared with emotional messages.

It was also discovered that, when the behaviour is presented with the label 'conscious-consumption' and described with positive and rational messages, people showed higher levels of attitude towards the behaviour compared with all the other combinations.

Also, this study demonstrated how people are more willing to adopt the behaviour when the message contains the label “anti-consumption” as well as information and logical arguments related to the behaviour (rational appeal).

The influence of the moderator variable environmental concerns was explored. It was discovered that positive levels of people's environmental concerns have moderation effects between message framing and impact on perceived comprehensiveness of the behaviour, between message appeal and attitude towards the behaviour, and between message appeal and behavioural intention. Also, it was found that specific positive levels of environmental concerns (moderate, highly moderate, and moderately high) play important and different roles on people's preference for the type of message. (e.g., rational or emotional, positive or negative)

Overall, it is possible to conclude that due to several limitations of the study, the role played by the communication variables to promote the anti-consumption behaviour was partially discovered and the central research question partially answered. But nevertheless, this study can be regarded as a starting point in the under-researched area of communicating anti-consumption behavior and it provides future research on this crucial topic with a foundation and an inspiration.

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Appendix

Appendix A – Materials

Welcome message questionnaire and consent:

☐
Intro



Hi! Thank you for participating in this survey.

This is scholarly research which is part of my Master Thesis in Communication Studies at the University of Twente. In my research, I am interested in people's views concerning the environmental impact of consumption.

You will be presented with two texts. For the stimuli presented, a number of questions will be asked. Please read the texts carefully before answering the questions.

Participation in this study is voluntary and you can decide to stop it at any time. Of course, I hope you will complete the entire questionnaire.

The complete survey should only take around 20 minutes of your time. Be assured that all the answers you provide will be confidential.

If you have any questions or remarks about the research, please contact me at j.fittavolini@student.utwente.nl

Thank you!
Jacopo Fittavolini



Please click '>>' to begin.


☐
Consent


Do you agree to participate in this survey?

Yes No

☐ ☐



 Condition: **No Is Selected.** Skip To: End of Survey.

Demographic questions:

☐ Gender

What is your gender?

☐ Male

☐ Female

☐ Other

☐ Age

What is your age?

☐ Nationality

What is your nationality?

☐ Level of Education

What is the highest level of education you have completed?

☐ Primary education (Elementary school/Middle school)

☐ Secondary education (graduated high school)

☐ Trade/technical/vocational training

☐ Undergraduate education (Bachelor degree)

☐ Postgraduate education (Masters or Doctorate)

Condition with anti-consumption name, positive framing, and emotional appeal

☐ ANTI - POS - EMO

Our current consumption patterns have an enormous impact on the environment. We buy too much. We even tend to buy things we do not need. By doing so, we contribute to world problems such as pollution, climate change, extinction of species, and resource depletion. Western countries take more than they share. We are living at the expense of our children and grandchildren. For example, the number of natural resources retrieved to produce goods increases with 60 billion tons each year. We now use 50% more resources than only 30 years ago. This cannot go on like this. The future of our planet is at stake.


More and more people realize this and commit themselves to anti-consumption behavior. They try to resist the influence of marketing manipulations on their behaviors. Anti-consumption behavior involves downscaling consumption and behaving with environmental awareness and moral restraints on consumption choices. They only buy what they really need, and avoid unnecessary waste.

Adopting the anti-consumption behavior as a way of life will make a strong and beneficial contribution to the welfare of our planet. It will decrease energy and resource consumption and waste and consequently will lead to a global solution to many of the problems we are facing today (for example, global warming and deforestation).

Changing the world starts with small decisions you make every day. Next time you consider buying a new shirt or a new pair of shoes, ask yourself the question: Do I really need it? Why do I need to buy something new? Will it make me truly happier or is it just an illusion? Try to be more critical about the way you consume. You can make a difference!

Condition with anti-consumption name, positive framing, and rational appeal

☐
ANTI -
POS -
RAT



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Changing the world starts with people's daily and personal decisions. Each person on earth uses on average 22 kg of natural resources. Just deciding to decrease daily consumption has a strong impact on the health of the earth. People need to be more aware of the way they consume. Every human being can make a difference.

Condition with anti-consumption name, negative framing, and emotional appeal

☐
ANTI -
NEG -
EMO



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Condition with conscious-consumption name, positive framing, and emotional appeal


CONS-
POS -
EMO




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Condition with conscious-consumption name, positive framing, and rational appeal


CONS -
POS - RAT




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Condition with conscious-consumption name, negative framing, and emotional appeal


CONS -
NEG -
EMO



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NEG -
RAT



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Questions for 'attitude towards the anti-consumption behaviour':

☐
1Att Tw
Ant_cons
Beh

Please give your opinion on the following statements about the text you just read:

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
My opinion of this behaviour is very favorable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Everyone should consider to adopt this behaviour	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

☐
2Att Tw
Ant_cons
Beh

Adopting the behaviour is a:

Bad idea	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Good idea
Foolish idea	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Wise idea

☐
3Att Tw
Ant_cons
Beh

I ... the idea of adopting the behaviour

dislike	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	like
---------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	------

☐
4Att Tw
Ant_cons
Beh

Adopting the behaviour would be:

Unpleasant	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Pleasant
------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	----------

☐
5Att Tw
Ant_cons
Beh

Please give your opinion on the following statements about the text you just read:

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
I think this behaviour is a very good solution	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This behaviour is very useful to prevent the side-effects of excessive consumption	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The behaviour is good for the environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The behaviour cannot really help to slow down the deterioration of the environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The behaviour can effectively reduce pollution	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Deciding to not adopt this behavior is dangerous for our planet	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Questions for ‘behavioural intention’:

☐
Behav
Intention

Please give your opinion on the following statements about the text you read before:

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
I intend to adopt the behaviour in my daily life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I predict I would adopt the behaviour in the next months	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I plan to adopt the behaviour in the next months	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I intend to reduce the amount of clothes I usually purchase	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I intend to reject unnecessary purchases	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I intend to reuse my shoes even if they are out of fashion	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Question for ‘perceived behavioural impact on people’s daily life’:

☐ Perc Intrusiv (gene)

Please give your opinion on the following statements about the text you read before:

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
Adopting the behaviour will extremely change my life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Adopting the behaviour will have a huge impact on my consumption behaviour	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Adopting the behaviour will ask a lot of sacrifices to me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Adopting the behaviour will radically make the quality of my life worse	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

☐ Perc Intrusiv (spec)

To what extent are the follow specific behaviours part of the overall consumption behaviour described in the text?

	Extremely inappropriate	Moderately inappropriate	Slightly inappropriate	Neither appropriate nor inappropriate	Slightly appropriate	Moderately appropriate	Extremely appropriate
Resist to marketing influences	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Consume only what is necessary	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Avoid to consume more than you need	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Refuse to buy two shirts when you only need one (even if there is a promotion)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
At the supermarket, try to buy only products with a close expiring date	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
For the new sales-season, avoid a compulsive consumption	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Purchase a new phone every time the newest model is out	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Buying a new pair of shoes just because you like them	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Avoiding to go shopping for fun	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Buy a new brand sun-glasses because they look cool	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Question for ‘environmental concern’:

Environmental concern

Please give your opinion about the environment:

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
I am concerned about the environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The condition of the environment affects the quality of my life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am willing to make sacrifice to protect the environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My actions impact the environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Humans are severely abusing the environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The earth is like a spaceship with only limited room and resources	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When people interfere with nature, it often has disastrous consequences	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The balance of nature is very delicate and easily disturbed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Break

Almost done! Once again, read carefully the following text and answer the subsequent questions.

Control question stimuli: each of the previous stimuli is presented again with a Display logic to guarantee the same text is presented as at the beginning.

CONTROL QUESTIONS

Display This Question:

2_ANTI-POS-EMO

Our current consumption patterns have an enormous impact on the environment. We buy too much. We even tend to buy things we do not need. By doing so, we contribute to world problems such as pollution, climate change, extinction of species, and resource depletion. Western countries take more than they share. We are living at the expense of our children and grandchildren. For example, the number of natural resources retrieved to produce goods increases with 60 billion tons each year. We now use 50% more resources than only 30 years ago. This cannot go on like this. The future of our planet is at stake.

More and more people realize this and commit themselves to anti-consumption behavior. They try to resist the influence of marketing manipulations on their behaviors. Anti-consumption behavior involves downscaling consumption and behaving with environmental awareness and moral restraints on consumption choices. They only buy what they really need, and avoid unnecessary waste.

Adopting the anti-consumption behavior as a way of life will make a strong and beneficial contribution to the welfare of our planet. It will decrease energy and resource consumption and waste and consequently will lead to a global solution to many of the problems we are facing today (for example, global warming and deforestation).

Changing the world starts with small decisions you make every day. Next time you consider buying a new shirt or a new pair of shoes, ask yourself the question: Do I really need it? Why do I need to buy something new? Will it make me truly happier or is it just an illusion? Try to be more critical about the way you consume. You can make a difference!

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Control questions:

☐ Manipul Check

Please give your opinion on the following statements about the text you just read:

	Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
The name of the behaviour seems radical to me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The name of the behaviour generates negative feelings	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I perceived this message to have a positive orientation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think this message focuses strongly on solutions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The way the message is presented seems rational and logical to me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The message is more objective than personal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

End of the survey.

Appendix B – Final Factor Analysis

Table 4: Final factor analysis

Rotated Component Matrix ^a	Component				
	1	2	3	4	5
Please give your opinion on the following statements about the text you read before:-I plan to adopt the behaviour in the next months	.831				
Please give your opinion on the following statements about the text you read before:-I predict I would adopt the behaviour in the next months	.820				
Please give your opinion on the following statements about the text you read before:-I intend to adopt the behaviour in my daily life	.807				
Please give your opinion on the following statements about the text you read before:-I intend to reduce the number of clothes I usually purchase	.714				
Please give your opinion on the following statements about the text you read before:-I intend to reject unnecessary purchases	.618				
Please give your opinion on the following statements about the text you just read:-The behaviour can effectively reduce pollution		.705			
A5Att_Tw_Ant_cons_Beh_4_RECODED		.664			
Please give your opinion on the following statements about the text you just read:-This behaviour is very useful to prevent the side-effects of excessive consumption		.662			
Please give your opinion on the following statements about the text you just read:-I think this behaviour is a very good solution	.415	.644			
Adopting the behaviour is a:-Bad idea:Good idea		.639			
Adopting the behaviour is a:-Foolish idea:Wise idea		.615			
To what extent are the follow specific behaviours part of the overall consumption behaviour descr...-Consume only what is necessary			.763		
To what extent are the follow specific behaviours part of the overall consumption behaviour descr...-Avoid to consume more than you need			.714		

To what extent are the follow specific behaviours part of the overall consumption behaviour descr...-Refuse to buy two shirts when you only need one (even if there is a promotion)			.591		
To what extent are the follow specific behaviours part of the overall consumption behaviour descr...-For the new sales-season, avoid a compulsive consumption			.588		
To what extent are the follow specific behaviours part of the overall consumption behaviour descr...-Avoiding to go shopping for fun			.538		
To what extent are the follow specific behaviours part of the overall consumption behaviour descr...-Resist to marketing influences			.455		
Please give your opinion about the environment:-When people interfere with nature, it often has disastrous consequences				.746	
Please give your opinion about the environment:-The balance of nature is very delicate and easily disturbed				.732	
Please give your opinion about the environment:-The earth is like a spaceship with only limited room and resources				.687	
Please give your opinion about the environment:-Humans are severely abusing the environment				.676	
Please give your opinion on the following statements about the text you read before:-Adopting the behaviour will extremely change my life					.797
Please give your opinion on the following statements about the text you read before:-Adopting the behaviour will ask a lot of sacrifices to me					.791
Please give your opinion on the following statements about the text you read before:-Adopting the behaviour will have a huge impact on my consumption behaviour					.769
Please give your opinion on the following statements about the text you read before:-Adopting the behaviour will radically make the quality of my life worse					.585