GRA 19502

Master Thesis

The impact of consistency and inconsistency between a self-declared claim and a mandatory fact information label on a packaging on the consumer pre-purchase behaviour

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Start:	02.03.2018 09.00
Finish:	03.09.2018 12.00

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Hand-in date:

03.09.2018

Campus:

BI Oslo

Examination code and name:

GRA 19502 – MASTER THESIS

Programme:

Master of Science in Business (Major Marketing)

ACKNOWLEDGEMENT

First and foremost, we would like to thank our supervisor Peter Jarnebrant. It has been an honour to be his master thesis students. He has taught us, both consciously and unconsciously, how good experimental study is done. We appreciate all his contributions of time and ideas to make our master thesis experience productive and stimulating. The joy and enthusiasm he has for teaching at BI Norwegian Business School as a successful professor has been a great motivation for us.

We are also thankful for what BI Norwegian Business School has given us, a wonderful exchange year in a beautiful country. This opportunity has allowed us to grow both professionally and personally. Professionally, we have grown with new teaching methods and we have particularly discovered a new field of study, that of research.

This one-year exchange has been made enjoyable in large part due to the many friends and groups that have become a part of our life. We are grateful for the time spent with roommates and friends, for our backpacking buddies, for our memorable trips in the Norwegian country and overall for many other people and memories, especially now those links to the numerous exchanges at various places and hours on this master thesis.

We both would like to thank our family for all their support and encouragement.

Last but not least, we both would like to thank each other for our faithful support, motivation and, daily joy of life that have been so appreciated.

Thank you.

Antoine Chabret & Sarah Le Faucheur

BI Norwegian Business School

September 1st, 2018

ABSTRACT

Our Master thesis tests the impact of consistency and inconsistency between a self-declared claim[1] and a mandatory fact information label[2] on a same product packaging on the consumer pre-purchase behaviour in terms of attitude, purchase intention and memory. The empirical testing introduces a controlled experimental approach regarding the level of sensitivity and knowledge of the consumer about nutritional and environmental issues and labels. After having collected 180 answers from an online survey, results show that consistency between a self-declared claim and a mandatory fact information label leads to more favourable attitude and higher purchase intention towards the product than inconsistency. However, to contrast with attitude and purchase intention, memory is rather enhanced by inconsistency that is likely to lead to a longer and deeper information process among consumers. More specifically, some moderators like sensitivity and knowledge are found to enhance the impact of consistency and inconsistency. Indeed, the relationship between a sel-declared claim and a mandatory fact information label does not have the same impact whether consumers are highly sensitive or highly knowledgeable about environmental and nutritional issues and labels. Consequently, while consistent placements appear natural, inconsistent ones adversely affect brand attitude and purchase intention because they seem out of place and are discounted, but promotes brand recall and recognition, forcing consumers to spend more time on looking at the packaging elements, and in particular the brand name. However, the results of the change in the different variables of the consumer pre-purchase behaviour between highly sensitive/knowledgeable and the low sensitive/knowledgeable due to inconsistency and consistency do not lead to conclusive results.

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[1] Statements made by manufacturers on a packaging about the characteristics of one or more of its product features. For instance, Coca-Cola brands its Coca-Cola Zero "Zero Sugar".

[2] Mandatory information on packaging that brands have to communicate on to comply with the legislation and be allowed to sell their products. For the nutritional regulation, it is about the number of calories, fat, sugar, … and for the environmental regulation, it concerns the grade of eco-efficiency, the amount of electricity or water consumption of a product…

At the end, it is helpful to understand how consumers process different sources of information on a same product packaging. In the light of the willingness to inform consumers about their own consumption, this study shows that it is necessary to sensitize and educate consumers to render all governmental projects effective because it moderates the level of amount of information processed. Beyond the need of clarity and education, brands and companies really must pay attention to their communication strategy. Consumers are really receptive to displayed information on package and can shift their attitude and purchase intention regarding what they find on the packaging, particularly if the self-declared claim and the mandatory fact information label are consistent or not.

TABLE OF CONTENTS

INTRODUCTION

"Packaging is industry's silent salesman. It displays and describes the product it contains; leaving the consumer to choose which product is best suited his or her taste"

(Rundh, 2005).

As the marketplace competition has been increasing, packages are not only a protective function anymore. Their role has shifted from that of protector to information provider and even persuader (Agariya *et al.*, 2012). They are now perceived as a product-related attribute that contributes to the brand identity and enables differentiation (Keller *et al.*, 2011). As some 59 per cent of all purchases are unplanned before a customer enters a store (Inman *et al.*, 2010), manufacturers use every possible word they can to widen the desirability for their products and thus influence the consumer behaviour at the point of purchase defined as "the first moment of truth" by Procter & Gamble (Inman et al., 2009; Hui et al., 2013). And, because packaging is a direct consumer touchpoint at that critical moment (Lemon & Verhoef, 2016), it has become one of the most significant in-store communication tools that can lead consumers to believe that they have taken something with superior benefits that satisfy their needs. That is why package claims have become key elements. Previous studies have considered claims (Banerjee et al., 1995 – environmental claims; Baltas, 2001 - nutrition claims and Fitzgerald et al., 2009 - health claims) or analysed the effect of specific claims, such as "low fat" (Wansink & Chandon 2006). As a consequence, consumers are more likely to purchase a product because of its environmental concerns or claims (Chase & Smith, 1992) and health claims influence product attitude, purchase intention, perceptions (Dean *et al.,* 2007), liking (Norton *et al.,* 2013), naturalness (Evans *et al.*, 2010) and tastiness (Lähteenmäki *et al.,* 2010). Thus, those attempts for differentiation can lead to a positive impact on both brand equity and firm value, directly through increased profits and sales, and indirectly through intangible value creation (Joshi *et al.*, 2010; Srinivasan *et al.*, 2009).

Nowadays, ethical, environmental or societal issues more and more preoccupy consumers in their decision-making process (Nielsen, 2014). Through the Nielsen report "Doing Well by Doing Good" (2014), more than half (55%) of respondents said that they are willing to pay extra for products and services from companies that are committed to positive social and environmental impact. Prior studies have also shown that consumers prefer products that are less harmful to the environment and would be willing to change their buying habits to favour a company that is environmentally sensitive (Chase, 1991; Schwepker *et al.,* 1991). Consequently, many organizations are striving to improve their environmental position such as Groupe SEB, which has implemented a 10 years reparability guarantee for its products to struggle against planned obsolescence in favour of the circular economy. Then, the use of claims on a packaging as a corporate marketing tool to answer to these concerns enables manufacturers to convert indiscernible attributes of their products into more actionable ones and reinforce their brand image. For instance, some nutrition claims benefit from the recognition of obesity, the decrease in sugar and fat consumption, or consumers' desires for healthier food (Geyskens *et al.*, 2007; Chandon *et al.,* 2006) and green advertising has increased almost tenfold for the last 20 years and has nearly tripled since 2006 (TerraChoice, 2009 revised version).

However, consumers can be confused about the meaning and veracity of such claims leading to cynicism, a major barrier to eco-friendly purchases (Greendex, 2010). Similarly, nutritional claims can create a healthy image for an unhealthy product (Wansink & Chandon, 2006). For example, the claim "fat free" may lead consumers to overestimate product healthfulness (Chandon, 2013; Ford *et al.*, 1996), "low in cholesterol" may also lead consumers to falsely believe that a product is also low in fat (Andrews *et al.*, 1998) and "low fat" may lead consumers to erroneously think that the product has fewer calories (National Institutes of Health, 2004). Such concerns lead to the implementation of labels (GDA, Eco-labelling), the creation of mobile applications such as YUKA in 2016 (in the blink of an eye, it analyses products' composition and impact on health by deciphering labels so that consumers can visualize products that are good and those that they should avoid) and corporate actions such as the international luxury group Kering leading the green movement in China with the recent launch of a mini-program

("My EP&L" - Environmental Profit & Loss) informing consumers about the environmental cost of their purchases (Sim, 2018). Our study makes the distinction between two kinds of claims that can be found on a packaged goods in the Fast-Moving Consumer Goods sector: self-declared claims and mandatory fact information labels.

One the one hand, self-declared claims "are assertions made by manufacturers about the impact of the characteristics of one or more of its brand attribute or service" (OECD, 2010). As organizations seek to communicate with consumers who are more and more concerned about environmental and nutritional issues, self-declared claims are becoming more noticeable on packaging across many sectors (OECD, 2010). For instance, food manufacturers such as Nesquik chocolate powder brand can claim "no added sugar" and Cheerios cereal brand "lower cholesterol". However, some people are concerned that larger corporations could use these claims to mislead consumers and for instance lead them to eat food that is not healthy for them (Parker, 2003). For instance, the Dannon Company Inc. has been charged for having allegedly exaggerated the health benefits of its Activia yogurt and DanActive dairy drink (Federal Trade Commission, 2010). Similarly, a "saves energy" claim can be perceived as an environmental or money-saving claim and "pesticide-free" may be interpreted as an environmental or health claim (Scammon *et al.,* 1995). While many companies have made sincere attempts to reduce the environmental impact of their products, others have simply overstated or even made the environmental qualities of them (Garfield, 1991). Facing a lack of control and the inability to interpret or evaluate them has resulted in governments and public authorities' interventions around the world (Kangun & Polonsky, 1995) that aim to consumer-oriented transparency to protect consumers and enable them to adequately and safely make their own decisions. That is why regulations such as the International Organisation for Standardization or the Regulation 1924/2006 of the European Parliament and of the Council are designed to ensure the use of these claims in a truthful, relevant and understandable way and to prevent consumers from being misled due to unclear or incorrect information. They also aim at reducing the asymmetry of information between sellers and buyers but also balancing between consumer protection and information, while businesses still need to promote their products (Van Trijp & Van Der Lans, 2007). Such measures

have led to the implementation of mandatory fact information labels, information on packaging that brands must communicate on to comply with the legislation and be allowed to sell their products (*Exhibit 1*). On the scale of a given field of activity, every competing brand has to respect this mandatory process that displays information prominently in a consistent, understandable and usable fact label (Curtis & Dunlap, 2005).

However, if in most cases self-declared claims and mandatory fact information labels are consistent with information they give to the consumers (that is to say that information given on the different elements is the same), it sometimes happens that the relationship between a self-declared claim and a mandatory fact information label is inconsistent (that is to say that they are not highlighting the same thing or that the self-declared claim hides information or misleads and confuses the consumer's mind). For example, "low calories" can be associated with "low sugar" or "low fat" and thus, mislead the consumer in his product healthfulness evaluation. Consequently, although there are lots of researches concerning claims (Banerjee *et al.,* 1995; Baltas, 2001) and packaging influence on the consumer pre-purchasing behaviour (Mitchell & Olson, 1981), most studies on the use of claims or labels have been done separately in a unique field. Besides, if consistency and inconsistency have already been studied (Jackson & Farzaneh 2012; Maheswaran & Chaiken, 1991; Russell, 2002 - congruence), it has never been applied to the relationship between a self-declared claim and a mandatory fact information label on a same packaging. The study addresses this gap in the literature analysing whether the crosscheck of information given by self-declared claims and mandatory fact information labels in a consistent or inconsistent way can influence consumer pre-purchase behaviour, and thus lead to the following research question:

How do consistency and inconsistency between a self-declared claim and a mandatory fact information label on a packaging influence the consumer pre-purchase behaviour?

Through this research question, we intend to prove that the interaction between a self-declared claim and a mandatory fact information label, either they are consistent or inconsistent, may influence the consumer in his pre-purchase

behaviour. It is likely to help us draw new conclusions about the way brands decide to deal with these mandatory information restrictions and how governments can improve the way the label communicates on information so that consumers easily benefit from more transparency. Consequently, if consumers have reliable information available at the point of purchase, if they understand it and integrate it as a decision criterion in their making-decision process, that may result in a change in behaviour (attitude, purchase intention, memory). Furthermore, we highlight that the relationship between self-declared claims, mandatory fact information labels and consumer behaviour is moderated by independent variables such as the willingness of the consumer to search for information (Stigler, 1961), its environmental or nutritional sensitivity (Bamberg, 2003; Harrison *et al.,* 1992) and its knowledge (Thøgersen, 2005). Thus, we will add value to the research packaging area by being cross-category, studying the persuasive impact of consistency and inconsistency and trying to correlate this impact regarding two moderators: consumers' sensitivity and knowledge. We will then make a new application of the Elaboration Likelihood Model to explain that persuasive impact on the pre-purchase behaviour and more precisely on consumer attitude, purchase intention, recall and recognition. Consequently, to better understand the meaning of consistency and inconsistency, in a first part we focus on the définition of those two concepts in the context of our study. Then, through the literature review, we aim at demonstrating that consistency and inconsistency may influence how consumers process information and how it can affect consumers' pre-purchase behaviour. Those effects can be increased or decreased by moderators such as the level of sensitivity and knowledge of the consumers. After that, we present our methodology, the different measures used and the results leading to a discussion about the implications, the limitations and the possible further researches. Indeed, to go beyond our results, it could be interested to share some managerial implications to improve package communication both from the side of FMCG companies' and the side of governmental measures.

Based on Lado Cousté et al. (2012) classification of package claims and by comparison with existing regulation on labels, we analyse package communication claims on FMCG products into two categories: environmental and nutritional. On the one hand, environmental claims "are assertions made by a manufacturer about

the impact of environmentally beneficial characteristics of one or more of its brand attributes of a product or service" (OECD Committee on Consumer Policy, 2010). On the other hand, nutritional claims are "statements that are meant to link food products with a desired state of health in the minds of consumers in order to sell food" (Williams, 2005). Such arguments can take the form of either nutrition claims (Fitzgerald *et al.,* 2009) or health claims (Baltas, 2001). A nutrition claim is "[…] any claim which states, suggests or implies that food has particular beneficial nutritional properties" (European Council Regulation 1924/2006), such as "contains omega-3" or "low in fat" (Wills *et al.,* 2012). The same regulation defines a health claim as "[…] any claim that states, suggests or implies that a relationship exists between a food category, a food or one of its constituents and health", such as "contains omega-3 which enhances the memory function" and "diet low in sodium may reduce the risk of high blood pressure".

LITERATURE REVIEW

1. CONSISTENCY AND INCONSISTENCY CONCEPTS

Consistency refers to the fact that any information given to the consumers (from different sources or not) are going in the same direction and cannot confuse or mislead the consumer's mind. When it comes to our study, using the word "*consistency*" or *"consistent"* between a self-declared claim and a mandatory fact information label on the same package of a FMCG product reflects that information given to the consumer is in correlation. In other words, the benefits claimed can be verified on the mandatory fact information labels. For example, if a brand claims "no sugar" on its product package, the consumer must find the same consistent piece of information in the mandatory fact information label, showcasing an amount of sugar equal to zero grams. For instance, when Coca-Cola claims that its product *Coca-Cola Zero* contains "*Zero Sugar*", the mandatory fact information label shows us that there is no sugar at all in this product. In this case, the self-declared claim and the mandatory fact information label are consistent.

Conversely, inconsistency refers to the fact that any information given to the consumers (from different sources or not) is not going in the same direction and can confuse or mislead the consumer's mind. When it comes to our study, using the word "*inconsistency*" or *"inconsistent"* between a self-declared claim and a mandatory fact information label on the same package of a FMCG product reflects that information given to the consumer is not directly conveying the same things, is lying or is hiding other information. For example, a brand can claim "low calories product" whereas the mandatory fact information label shows that there is an important amount of sugar or fat. Thus, this claim hides negative information and can mislead or confuse the consumer's mind.

This question is particularly relevant and even more regarding the new regulations because package product information in the FMCG sector often contains conflicting evaluative implications (e.g., a product can be claimed "low in fat" but it is actually "high in calories" or claimed "low in calories" but it is in fact "high in sugar"). This example is a perfect inconsistent relationship between the self-declared claim and the mandatory fact information label. The brand chooses to claim a positive element that may hide a less positive or even negative one. It can be regarded as a two-sided message, containing a non-favourable message as well as a favourable message. We are thus particularly interested in assessing the impact of consistency or inconsistency between self-declared claims and mandatory fact information labels on the consumer pre-purchase behaviour for several reasons. Not only do we intend to show that it would be favourable for brands to bring more transparency to consumers, especially when considering the new environment and the ability for consumers to have diverse sources of information everywhere at any time (ex: Yuka Application), but we also want to evaluate mandatory fact information labels, their utility and if brands really need to comply with them to be effective in their package advertising content. However, as each consumer can process information differently, it is important to know how consumers process information and can be persuaded. Then, we intend to make a new application of the Elaboration Likelihood Model (ELM) developed by Petty & Cacioppo (1984) by introducing the notion of consistency and inconsistency.

2. ELM – A NEW APPLICATION

Persuasion plays a prominent role in daily life, and often results in a change in attitude. Consider a politician convincing the public to give him their vote or a TV commercial trying to persuade consumers that they need one product. However, persuasion attempts may be reduced by interfering influences from other sources and thus achieving such change may not be as easy as it may seem. As Miller (1965) explains, "In our daily lives we are struck not by the ease of producing attitude change but by the rarity of it". In our study, we suppose that the self-declared claim - mandatory fact information label relationship (either consistent or inconsistent)

may result in a change in attitude and purchase intention, and a better or lower recall and recognition of the brand, as it may influence how a consumer processes that kind of information.

It exists many processing models such as AIDA, Lavidge & Steiner's model or McGuire's one. Keller et al. (1997) used the first one, in their study on food purchase, when they showed that nutritional claims can influence consumer behaviour to the extent to which consumers are aware of it, understand it, draw inferences from it, consider it credible, appealing and motivating, and transform it into action. However, when making a purchase, consumers may not always follow that sequence. For instance, when buying a product, consumers often rely on available information in shelves such as price, package design and memory of previous experience, without much further cognitive elaboration or deep thoughts. Thus, information may be processed in depth or more superficially and the information-processing depends on the consumer's current motivation and ability to process information. For instance, consumers with lower enduring motivation to process may place greater emphasis on the most easily accessible piece of information, such as a self-declared claim presented on the front of the package. They may not perceive detailed information in the mandatory fact information label as necessary for the judgment task at hand. This suggests that the motivation construct moderates the relative effects of the labels and claims, and claims may have a greater effect for less motivated consumers. The Elaboration Likelihood Model (ELM) developed by Petty & Cacioppo (1984) provides a theoretical framework for understanding how people process messages that are intended to be persuasive leading to attitude change regarding products or services (Bitner & Obermiller, 1985). Information consistency is not generally linked with the works of Petty and Cacioppo (1984) but it may have an impact on how information is processed. It is relevant for our study, because it enables us to understand the change in attitude according to how consumers process consistency or inconsistency of given information between a self-declared claim and a mandatory fact information label. According to the ELM when facing a message, consumers react by using either two channels: the central or peripheral route, depending on the level of "elaboration" (the amount of effort a consumer has to put to process and evaluate a message, remember it, and then accept or reject it. It is based on the level

of motivation to attend a message and the ability to develop relevant thoughts about it). Consumers use central route when the elaboration likelihood is high. Consequently, consumers carefully analyse the message via an effortful information process and then form an attitude regarding that stimulus considered as strongly held and resistant to change (Rucker & Petty, 2006). Conversely, when elaboration likelihood is low, consumers use the peripheral route because they are unable or unwilling to engage in deep thoughts about the message. The resulting weaker attitude is also easier to change (Bitner & Obermiller, 1985). A change in attitude can threaten the brand, if for instance a consumer decides to switch for another brand due to inconsistent information. Consequently, inconsistent information can decrease the persuasion attempt of the brand and lead consumer to think that the manufacturers are hiding something, that may lead to decrease their level of credibility (Keller et al, 1997).

We then suppose that certain situations, like exposing a consumer to a message advocating a different position or information should increase their desire to process a message and scrutinize the content as data is carefully considered in relation to one another (Maheswaran & Chaiken, 1991). For instance, if the product is claimed "zero sugar" but then the consumer sees that there is an amount of sugar in the product on the mandatory fact information label, consumers will try to understand this gap, leading to further deep thoughts. Thus, such elaboration produces a stronger attitude change (Jonas et al.,1997), based on the premise that people are spontaneously motivated to make sense of inconsistencies (McGuire, 1981). Indeed, Jonas et al. (1997) showed that inconsistent information about a new shampoo brand results in greater information elaboration and a significantly stronger link between brand attitude and subsequent purchase intention than consistent information. Conversely, we suppose that consistency makes thinking easy, because they quickly and easily acquire the general opinion with less cognitive effort (Jackson & Farzaneh, 2012).

Impact of consistency (vs inconsistency) on attitude: Many studies observed a positive or negative change in attitude when information is displayed in a consistent or inconsistent way (Jackson & Farzaneh 2012; McGuire 1981; Jonas et al. 1997). Most researches about inconsistencies and information processing use

the valence of information (positive or negative information) (Jonas et al.,1997). Another part of the literature is dealing with two-sided messages that have been well-studied and specifically well-linked to the concept of attitude. Thus, to better understand the impact of consistency (vs inconsistency) on the consumer pre-purchase behaviour, we need to integrate the concept of attitude. Indeed, enabling marketers to predict consumer behaviour, attitude is considered as one of the main marketing analysis tools (Mitchell & Olson, 1981). More precisely, attitude is a dual concept that can be defined as a "predisposition to respond in a favourable or unfavourable manner due to product and purchase evaluations" (Burton, 1998). To measure this concept of attitude, Bagozzi et al. (1979) also introduced the notion of purchase intention referring to the consumers' willingness to purchase a product after consideration and evaluation of the latter and other products. Consumers' willingness is a key-concept as purchase intention can be defined as a planned behaviour that a consumer is willing to buy certain product (Ajzen & Driver, 1992). Often, there is a positive relationship between attitude and purchase intention. Indeed, if consumers have a positive attitude towards a brand or a product, their purchase intention and consequently actual purchase will be increased (Byoungho & Yong, 2005). Several studies suggested that two-sided messages tend to induce greater motivation to attend to and process information (Pechmann, 1992) and in turn, the increased attention, motivation, and cognitive processes positively influence the strength of attitude and purchase intention (Crowley & Hoyer, 1994). However, the empirical results about the relationships between two-sided messages and attitude or purchase intention have been mixed. If some studies found that two-sided messages enhance the persuasiveness of a message and lead to greater purchase intention (Etgar & Goodwin, 1982; Golden & Alpert, 1987; Kamins, 1989; Pechmann, 1992), others reported that two-sided messages lead to lower purchase intention (Swinyard, 1981) and do not necessarily result in more favourable attitudes (Hastak & Park, 1990). And, yet others concluded that there is no significant difference in purchase intention between one-sided and two-sided communication (Sawyer, 1973; Belch, 1981; Swanson, 1987), meaning that the responses of people who are exposed to inconsistent information go to the middle point in the bipolar attitude measurement scale because favourable evaluations caused by positive information are neutralized by negative information (Nowlis et

al. Dhar, 2002). As a summary, most researchers hypothesized that two-sided messages (inconsistent information) lead to more favourable attitude and stronger purchase intention because inconsistent information is processed more intensively than consistent information. But, most researches were done on different product on printed advertising (Sawyer, 1973 - pen or diet drink; Pechmann, 1992 - ice cream; Golden & Apert, 1987 - deodorant; Etgar & Goodwin, 1982 - beer or headache remedies) or TV (Belch, 1981- toothpaste). Consequently, we suppose that certain situations, like exposing a consumer to a message advocating a different position or information results in more unfavourable attitude and lower purchase intention than when a consumer is exposed to a consistent message between a self-declared claim and a mandatory fact information label.

Impact of consistency (vs inconsistency) on memory: Literature about inconsistency maintains that while little elaboration occurs when information is consistent, inconsistency triggers cognitive elaboration (Mandler, 1982). As a result, inconsistent information is memorable because it prompts attention and provokes elaboration (Heckler & Childers, 1992). Russell (2002) demonstrated that memory improves when modality and plot connection are inconsistent, but persuasion is enhanced by consistency. However, some empirical evidence also supports the fact that the increased elaboration associated with extreme inconsistency has an adverse effect on evaluations (Lee & Mason 1999; Meyers-Levy & Tybout 1989), because inconsistency can also prompt viewers to think about the brand's features. For instance, Friestad and Wright (1995) found that brand-relevant thinking results in corrective mechanisms, such as counter-argumentation or reactance, if the placement is perceived as inappropriate (inconsistent) while consistent placements are perceived as acceptable. Therefore, we can suppose that if the mandatory fact information label is inconsistent with the self-declared claim, it is likely to raise consumers' suspicion. This reliance on brand recall and recognition measures presumes that the effects for memory are similar to the effects for attitude. However, the absence of correlations between memory and attitude measures often found in the persuasion literature (Petty *et al.*, 1983) challenges this assumption and suggests that the memory-attitude relationship is not necessarily linear. Since recall may be a poor predictor of persuasion (Mackie &

Asuncion, 1990), researches on the effectiveness of consistency and inconsistency between self-declared claims and mandatory fact information labels should investigate both memory and attitude effects. Consequently, we suppose that certain situations, like exposing a consumer to a message advocating a different position or information, result in a higher recall and recognition of the brand than when a consumer is exposed to a consistent message between a self-declared claim and a mandatory fact information label.

There are complex interactions among self-declared claims and mandatory fact information labels, as well as some consumer factors affecting consumers' use of labels. For instance, whereas consumers assure they pay attention to claims or information in real life, evidence from eye-tracking studies indicates that participants do not spend much time on looking at nutritional information, even when it is located on the front of a food package (Graham *et al.,* 2015). According to Moore and Lehmann (1980), the use of nutrition labels can be modelled as a function of individual characteristics, situational variables, product importance and prior knowledge. We also found other factors such as loyalty, perceived diet effectiveness, use of claims or labels, scepticism, motivation to search for information and ability to process information (Szykman *et al.*, 1997). Therefore, through past researches and among several factors, we identified two main factors that are susceptible to influence the persuasiveness of the consistent (vs inconsistent) relationship on the consumer pre-purchase behaviour: knowledge (Thøgersen, 2005) and sensitivity (Bamberg, 2003; Harrison et *al.*, 1992). In our model, we then suppose that the extent to which a consumer elaborates on environmental or nutritional claims depends on two main factors identified via the Elaboration Likelihood Model, e.g. motivation (personal relevance of information, namely environmental or nutritional sensitivity) and ability to process information (cognitive resources, namely knowledge).

3. MODERATORS OF PRE-PURCHASE BEHAVIOUR CHANGE: KNOWLEDGE AND SENSITIVITY

Sensitivity and knowledge are not interdependent variables: At first sight, knowledge and sensitivity can be seen as interdependent variables, meaning that being more knowledgeable implies that you become more aware of a subject and thus more sensitive. However, that link is not obvious. Sensitivity and knowledge can also be seen as two distinct concepts: being knowledgeable does not imply being sensitive and in return being sensitive does not imply being knowledgeable. On the one hand, a consumer can be very sensitive to environmental issues without knowing anything about environmental mandatory fact information labels. Bang et al. (2000) note that consumers expressing a higher concern about the environment are not necessarily more knowledgeable about renewable energy. For instance, if you are sensitive to the environment and when you figure out that the energy consumption of a vacuum cleaner is 800 watts, it is difficult to draw any conclusion on the environmental impact of the product if you don't know what these figures mean. In the food industry, you can be sensitive to the new way of consumption such as "gluten free" but not being knowledgeable on what it really implies. On the other hand, the same consumer can have a very good knowledge of mandatory fact information labels elements without being sensitive to a given cause. For instance, let's imagine an engineer who manufactures and produces vacuum cleaner engines as a professional activity. This person would have a very good knowledge about the product and associated regulations without caring about the environment at all. These two variables are consequently independent and their respective role towards the impact of consistency (vs inconsistency) between self-declared claims and mandatory fact information labels on the consumer pre-purchase behaviour should thus be assessed separately. We aim at bringing another dimension to our study by assessing the roles of knowledge and sensitivity variables in the consumer pre-purchase behaviour. We expect that the level of knowledge or sensitivity plays a role in the analysis of a consistent or inconsistent message between a self-declared claim and a mandatory fact information label. Indeed, mandatory fact information labels enable consumers to get more information about what they purchase and consume. A customer very sensitive to the environment should be more attentive to

possible inconsistent messages and could react in a bad way for a brand, switching to another product for example. We thus aim at recommending brands to be careful about their communication packaging elements, especially with sensitive people or the ones who have a good knowledge of these restrictions.

Environmental or nutritional sensitivity: Environmental or nutritional sensitivity refers to the ability to recognize that a decision-making situation has environmental or health or nutrition impact. Consumers' perceptions and behaviours are generally influenced by their prior attitudes and beliefs and thus, consumers who are highly involved with a certain topic react differently to product relevant information. Researches showed that consumers with a high level of environmental concern react to information about sustainable products differently than consumers with low concern levels (Bamberg, 2003; Van Birgelen et *al.*, 2009) and can be positively linked to the purchase of environmentally friendly products (Kalafatis *et al.*, 1999; Schwepker & Cornwell, 1991). Other studies have shown that health consciousness predicts a variety of health attitude and behaviours (Michaelidou & Hassan, 2008) such as attitudes, intention and purchase of organic food (Magnusson *et al.*, 2001). Chrysochou and Grunert (2014) found that health concern moderated significantly the effect of organic claims on perceived healthiness of food, as well as purchase intention. Nevertheless, the relationship between health consciousness and attitude has not been supported in all studies (Tarkiainen & Sundqvist, 2005). Thus, knowing how this moderator can affect the consumer behaviour towards the consistency (vs inconsistency) between a self-declared claim and a mandatory fact information label is important in several ways. First, it can enable public authorities to increase the effectiveness of mandatory fact information labels and thus improve government intervention. Second, the attitudes or behaviours of environmental or nutritional conscious individuals could be broadcast among other people who are less likely to change their attitudes or behaviours. Therefore, we propose that consumers with high environmental/nutritional sensitivity may be more open-minded to environmental/nutritional initiatives and that any incremental information may increase the persuasive impact. Thus, we predict that the more sensitive a consumer is, the more cognitive elaboration the consumer has to process information. Then,

on the one hand, when information is consistent between the self-declared claim and the mandatory fact information label, we expect consumer attitude to be more favourable and purchase intention to be higher among sensitive consumers than consumers with low sensitivity. Indeed, we expect them to be more receptive to a consistent message, which can enable them to get more trust towards the brand or the product. On the other hand, when information is inconsistent between the mandatory fact information label and the self-declared claim, we expect consumer attitude to be more unfavourable and purchase intention lower among sensitive consumers than consumers with low sensitivity. We expect them to be very receptive to an inconsistent message between a self-declared claim and a mandatory fact information label, losing their trust to the product in question. More than that, we think that an inconsistent message has a more negative impact than a consistent message has a positive one in the eyes of consumers who are sensitive to a cause or have knowledge about a mandatory fact information label and the restrictions it involves.

Environmental or nutritional Knowledge: Environmental and nutritional knowledge refers to the knowledge of concepts and processed information about the environment and nutrition. According to Alba and Hutchinsan (1987), knowledge is a relevant and significant construct that affects how consumers gather and organize information, how much information is used in decision making (Brucks, 1985) and how consumers value product and services (Murray and Schlacter, 1990). Overall, knowledge is an important concept that affects consumers' opinions that has a direct impact on decision making about products and services (Do Paco & Raposo, 2010). On the one hand, environmental knowledge indicates how much individuals know about environmental issues and "general knowledge of facts, concepts, and relationships concerning the natural environment and its major ecosystems" (Fryxell & Lo, 2003). On the other hand, nutritional knowledge refers to "information possessed by the consumer nutrition, diet, health, diseases and major sources of dietary recommendations" (McKinnon *et al.,* 2014).

From an environmental point of view, prior literature that appropriates knowledge is a significant predictor of environmental behaviour, suggesting that increased knowledge about the environment may increase people's intentions to

pursue an environmentally friendly behaviour (Levine & Strube, 2012; Mobley *et al.*,2010). Other researchers observed how attitudes and intentions tend to be positively altered in conjunction with higher levels of knowledge (Acury, 1990, Polonsky *et al.*, 2012). For instance, Polonsky *et al.* (2012) found that knowledge is positively related to environmental behaviours, because as consumers become more knowledgeable about specific environmental issues, it may modify their attitudes and purchasing behaviours as they become more mindful consumers. Nevertheless, the results are mitigated because Acury (1990) argued that the positive relationship between environmental knowledge and environmental consumers attitudes and intention is not especially strong. Conversely, Schahn and Holzer (1990) found that ecological knowledge did not predict environmentally responsible behaviour directly. More precisely, Wan Rashid *et al.* (2016) compared general environmental knowledge and label-specific knowledge using survey data and found that label-related knowledge is more effective in inducing consumers' purchasing behaviour than general environmental knowledge is. Similarly, Daugbjerg *et al.* (2014) observed that eco-label knowledge increases consumers' trust in eco-labels and is likely to induce their purchasing behaviour. Individuals who display higher environmental knowledge should be more likely to use and understand environmental labels and thus try to understand consistency or inconsistency that can result from the relationship between a self-declared claim and a mandatory fact information label, leading to a possible change in behaviour, attitude or purchase intention.

From a nutritional point of view, previous studies clearly established a relationship between nutritional knowledge and behaviour (Spronk *et al.*, 2014; Graham & Laska, 2012) The knowledge possessed by the consumer is applied to take decisions (Parmenter & Wardle, 1999). For instance, Spronk et al. (2014) examined the relationship between nutritional knowledge and dietary intake and demonstrated that individuals with higher nutritional knowledge tend to consume more fruits and vegetables, as well as have a higher intake of fiber and carbs than those with lower nutritional knowledge. Other studies showed that consumer knowledge plays a significant role in the individual usage level of nutritional labels influencing product evaluation and perception formation (Moorman, 1996; Alba and Hutchinson, 2000; Miller & Cassady, 2015). For example, Miller and Cassady

(2015) developed a theoretical model based on cognitive processing to suggest that individuals pay attention to information on food labels, use their knowledge stores to understand displayed information, and then maintain that stored information to make a food-related decision. Derby and Fein (1994) also showed on two studies conducted by the FDA that increased knowledge and awareness are related to the use of food labels and nutritional intake. However, other studies reported no relationship between knowledge and behaviour (Norazlanshah *et al.*, 2013; Mannell *et al.,* 2006). Therefore, individuals who display higher nutritional knowledge should be more likely to use and understand nutrition labels and should be expected to use labels more effectively; being able to distinguish relevant information, interpret that piece of information, and make better choices.

However, a study demonstrated that only 31 per cent of participants indicating full comprehension of provided information on nutrition labels, 58 per cent only partly understand information and 11 per cent say they do not understand it at all (Nielsen, 2012). It appears that while consumers claim the use of mandatory fact information and general understanding of dietary matters, they are often confused by technical terms (Mueller, 1991; Black & Rayner, 1992; Eves *et al.*, 1994; Abbott, 1997) or miscalculate nutrient intake (Frazao & Cleveland, 1994). For example, some people do not know what recommended daily values mean or how to use them in a dietary planning (Burton & Andrews, 1996).

Overall, knowledge is powerful because it renders attention, comprehension, memory, and decision-making process more efficient (Chiesi *et al.,* 1979; Ericsson & Kintsch, 1995). Based on those works, knowledge could support the analysis of the consistent (vs inconsistent) relationship between a self-declared claim and a mandatory fact information label in at least three ways. First, knowledge could enable consumers to pay attention to important information and to be careful with marketing features as it facilitates comprehension. Second, knowledge could help consumers to understand the packaging cues and lastly it could help make better choices. Thirdly, knowledge could support remembered information of the product choice. Moorman and Matulich (1993) argued that higher levels of health knowledge have a positive effect on information acquisition from media sources (including nutrition fact information reading). Consequently,

consumers with high level of knowledge are more likely to use mandatory fact information label effectively to analyse the consistency (vs. inconsistency) with a self-declared claim to make their choice in the pre-purchase stage. Most information-processing theories state that the human memory is organised as an associative network (Solomon *et al.*, 2013). When a consumer faces information, he or she can access knowledge stored in the network, through a spreading activation process (the activation of one particular memory item can lead to activation of others with particular meanings linked to them). Those notions are relevant to determine consumer understanding of nutritional and environmental claims. Because of spreading activation, those claims may have meanings that go beyond what is actually stated in the claim. For instance, consumers' understanding of a claim "low in cholesterol" may be influenced by that existing knowledge and by how far activation spreads through the stored knowledge network. Then, it may bring to mind ideas about other nutrients such as "fat". Those links can lead to a conclusion beyond what is stated in the claim and lead to misinterpretation "low in cholesterol e.g low in fat". Thus, we predict that consumers who are highly involved with the issue being communicated (higher level of knowledge) are more likely to process information in more detail before reaching a decision. On the one hand, when information is consistent between the mandatory fact information label and the self-declared claim, we expect consumers who have a high level of knowledge to have a more favourable attitude and purchase intention towards the product than those who have a low knowledge. However, when information is inconsistent between the mandatory fact information label and the self-declared claim, we expect these consumers, who process deeper information, to be even more disappointed with an inconsistent message, that's why we think that this should lead to a more unfavourable attitude and lower purchase intention than consumers who have low knowledge.

HYPOTHESES

We suppose that consistency (vs. inconsistency) impacts consumer pre-purchase behaviour, through attitude towards a product, purchase intention, recall and recognition at different levels. In particular, we believe that consistency leads to more favourable attitude and higher purchase intention than inconsistency. However, based on the premise of the ELM that inconsistency leads to more cognitive efforts, we expect that the positive (vs. negative) impact of consistency (vs inconsistency) is driven by sensitivity and knowledge. Moreover, we predict that consistency and inconsistency play a role when the consumer sensitivity or knowledge is high. In this case, consistency will lead to more favourable attitude and higher purchase intention. Nevertheless, between highly sensitive and knowledgeable people, we expect the change in magnitude to be higher for inconsistency. In other words, the negative impact of inconsistency should be higher than the positive impact of a consistent message. Regarding memory, we suppose that certain situations like exposing a consumer to a message advocating a different position or information results in a higher recall and recognition of the brand than when a consumer is exposed to a consistent message between a self-declared claim and a mandatory fact information label. When sensitivity and knowledge are high, we also suppose that the level of recall and recognition in an inconsistent relationship is higher than when the sensitivity and knowledge is low among the consumers. Furhtemore, comparing low sensitive and knowledgeable peaople with highly sensitive and knowledgeable people results, we expect the change in percentage to be higher for inconsistency. In other words, the positive memory impact of inconsistency should be higher than the one of consistency. Then, if people are not sensitive or don't have any knowledge about environmental/nutritional issues and labels, it is important for governments to educate people to enhance their sensitivity and their knowledge. Thus, the persuasiveness will be more effective, the asymmetry of information will be reduced, and the trustworthiness of information will be increased. From a managerial point of view, it will also be really useful for companies as they will be able to engage more their consumers into their products, showcasing a consistent

brand image. That demonstrates how important it is for brands to display a consistent message. Consequently, we draw the following hypotheses:

H1: *A consistent relationship between a self-declared claim and a mandatory fact information label on a same packaging leads to a more favourable attitude and higher purchase intention towards the product than an inconsistent relationship.*

H2a: *When there is a consistent relationship between a self-declared claim and a mandatory fact information label on a same packaging, high environmental/nutritional knowledge or sensitivity leads to a more favourable attitude and higher purchase intention towards the product than when environmental/nutritional knowledge or sensitivity is low.*

H2b: *When there is an inconsistent relationship between a self-declared claim and a mandatory fact information label on a same packaging, high environmental/nutritional knowledge or sensitivity leads to a more unfavourable attitude and lower purchase intention towards the product than when environmental/nutritional knowledge or sensitivity is low.*

H3: *When the consumer environmental/nutritional knowledge or sensitivity is high (compared to when it is low), inconsistency leads to higher change in attitude and purchase intention towards the product than when the relationship is consistent.*

H4: *An inconsistent relationship between a self-declared claim and a mandatory fact information label on a same packaging leads to a better brand recall and recognition of the brand than a consistent relationship.*

H5: *When the relationship between a self-declared claim and a mandatory fact information label is consistent (or inconsistent), highly sensitive and knowledgeable people have a better brand recall than low sensitive and knowledgeable people.*

H6: *When the consumer environmental/nutritional knowledge or sensitivity is high (compared to when it is low), inconsistency leads to higher change in percentage for the recall of the brand than when the relationship is consistent.*

METHODOLOGY

1. MEASURES OF THE DEPENDENT VARIABLES

Measure Attitude towards the product: Attitude is assessed by seven-point scales from *Strongly favourable (1)* to *strongly unfavourable (7)* and all scales are encoded when necessary so that lower values indicate more favourable attitudes. All multi-items measures are divided by the number of scale items, and these mean scores are used in the analysis. A large pool of items measuring attitudes is generated through the marketing literature, observable in an approach suggested by Holbrook and Batra (1987). As Spear and Singh's (2004) study contains 31 items for measuring attitudes, we have decided to reduce the list and thus lean on Kozup et al. 's work (2003) or Burton et al. 's study (2000) to measure attitude towards a product, in which respondents' product attitude is measured using a three-items 7-point likert scale (Favourable – Unfavourable, Positive – Negative, and Good – Bad). This measure has been found to be reliable and consistent (respectively alpha= 0,98 and alpha = 0,96).

Measure Purchase Intention: Purchase intention is assessed by seven-point scales from *Extremely agree (1)* to *Extremely disagree (7) [respondents would be to buy the product],* and all scales are encoded when necessary so that lower values indicate higher purchase intention. All multi-items measures are divided by the number of scale items, and these mean scores are used in the analysis. A large pool of items measuring purchase intention is generated through the marketing literature, observable in an approach suggested by Holbrook and Batra (1987). As Spear and Singh's (2004) study contains 11 items for measuring purchase intention, we have decided to reduce the list and thus lean on Kozup et al. 's work (2003) to measure purchase intention. The objective is to ask the respondents to imagine themselves in a purchase situation and to what extent they intend to purchase a product we introduce to them using a 7-point likert scale. Their work has been found to be reliable and consistent (alpha= 0,97).

Measure Memory: To measure memory we lean on the study of Russell (2002). Thus, we divided the concept of memory into two main parts, recall and recognition. We first design a recall measure encouraging the respondents to list all the brands they remember seeing during the survey. In a second part, when it comes to recognition, we aim at asking respondents to click on the brand names they remember seeing during the survey in a list of 20 different brand names.

2. MEASURES OF THE INDEPENDENT VARIABLES

Measure environmental and nutritional sensitivity:

Nutritional sensitivity: Several measuring instruments have been developed to measure environmental sensitivity (Käkönen, 1996; Moorman, 1990). The 10-item scale is designed by Kähkönen et. al. (1996) to capture respondents' concerns about food and health-related issues through various statements related to health and food. The respondents have to rate their opinion about each statement using a seven-point likert scale ranging from "*Completely disagree*" to "*Completely agree*". The concerned scale has been used before (Kähkönen et al., 1997; Bower et al., 2003; Kähkönen & Tuorila, 1999; Sun, 2008) and its reliability has been confirmed by high Cronbach's alphas. On the other side, the Moorman's scale (1990) measures the motivation to process information. The alpha for motivation is 0.94. Thus, in our study, nutritional sensitivity is evaluated by seven-point scales from *Strongly agree (1)* to *Strongly disagree (7)* based on those two works. The first question is inspired by Kähkönen et. al's (1996) scale and tries to separate questions such as "*I am concerned about getting many calories*", "*I am concerned about getting a lot of sugar in my food*", "*I am concerned about getting sufficient energy in my food*"… This approach is motivated by the fact that a mandatory fact information label on a product presents all these kinds of information at the same time. Consequently, we ask the respondents to answer the following question: "*When I buy products, I am concerned about the nutrition benefits (sugar, fat, salt…)*". The last three questions are inspired by Moorman's (1990) study and generally try to understand if participants have the motivation to process mandatory fact information labels and

thus, if mandatory fact information label is one essential purchase criterion when they choose food products. Then, the second question asks them if they are *"interested in the nutritional mandatory fact information label on a product while shopping"*. The third one asks them if they *"would like to receive additional information about mandatory fact information label"*. Finally, the last one asks them if they *"intend to pay attention to the nutritional mandatory fact information label on a product while shopping"*.

Environmental sensitivity: Several measuring instruments have been developed and exposed by Fransson & Gärling (1999) to measure environmental sensitivity and two of them are frequently used and perceived as reliable: The Ecological Attitude Scale (Maloney & Ward, 1973) and the Environmental Paradigm Scale (Dunlap & Van Liere, 1978). However, these scales are far too developed in terms of the number of questions and we need to assess more specific sensitivity about mandatory fact information labels. Consequently, we have adapted the nutritional scales of Kähkönen et. al (1996) and Mooman (1990) to measure environmental sensitivity. Thus, in our study, environmental sensitivity is evaluated by seven-point scales from *Strongly agree (1)* to *Strongly disagree (7)* based on these two works. The four questions are: *"When I buy products, I am concerned about the environmental benefits (eco-efficiency, eco-friendly, energy consumption)"*, *"I am interested in the environmental mandatory fact information label on a product while shopping"*, *"I would like to receive additional information about environmental mandatory fact information label"* and *"I intend to pay attention to the environmental mandatory fact information label on a product while shopping"*.

Measure environmental and nutritional knowledge : This measure can be assessed through one's ability to recognize nutrition and health / environmental problems, the causes and the consequences of such problems. But, more than general knowledge, we need to assess specific knowledge through one's ability to recognize mandatory fact information labels and understand it.

Nutritional knowledge: Many scales have been developed to assess nutritional knowledge (Miller et al., 2011; Drichoutis et al., 2006) where the score is calculated as a cumulative score derived from the correct answers. Other studies developed tests to measure the ability to understand nutritional information (Moorman, 1996). Consequently, our first three questions come from Liu et al (2014) and the next two questions are adapted from Cowburn and Stockley (2005). They are measured by a 7-point interval scale ranging from *"Not understand at all" (1)* to *"Totally understand" (7)* (Cronbach's alpha = 0.90).

Environmental knowledge: Many scales have been developed to assess general environmental knowledge (Maloney *et al* 1975; Polonsky *et al.*,2012; Kaiser *et al*, 1999; Fraj-Andres & Martínez-Salinas, 2007; Ivy et al.,1998) or perceived knowledge of environmental issues (Mohr et al., 1998). However, those scales are too general and do not take into account specific knowledge on environmental labelling. Besides, several studies have been done on the understanding of eco-labels and the impact on behaviour, attitude and purchase intention (Sammer & Wüstenhagen, 2006; Steinhart et al., 2013, Testa et al., 2013, Taufique et al., 2014). However, considering that the existing scale is too long, we have decided to adapt the measure of nutritional knowledge.

Please, find in the next page a summary of our different variables used:

Concepts	Conceptual Definition	Operational Definition	Type of scale and construction	Designed from
Attitude	Predisposition to respond in a favourable or unfavourable manner due to product and purchase evaluations" (Burton, 1998)	The measure reflects how consumer attitude is impacted regarding the consistency (vs inconsistency) between a self-declared claim and a mandatory fact information label on a packaging.	7-point likert scale question anchored by: -Favourable / Unfavourable	Burton et al. 's study (2000) Kozup et al. (2003)
Purchase Intention	Individual's subjective likelihood of performing some certain behaviour (Fishbein & Ajzen, 1975)	The measure reflects how consumer purchase intention is impacted regarding the consistency (vs inconsistency) between a self-declared claim and a mandatory fact information label on a packaging.	7-point likert scale question anchored by: -Likely / Unlikely	Kozup et al. 's work (2003)
Sensitivity	The ability to recognize that a decision-making situation has environmental, health or nutritional content	The measure reflects how environmental or nutritional sensitivity can impact or moderate consumer's attitude and purchase intention towards a product.	Four questions designed and rated on a 7-point likert scale anchored by: -Agree/Disagree	Käkönen et al (1996) Moorman (1990)
Knowledge	The ability to recognize nutritional and health / environmental problems, the causes and the consequences of such problems.	The measure reflects how environmental or nutritional knowledge can impact or moderate consumer's attitude and purchase intention towards a product.	Four questions designed and rated on a 7-point likert scale anchored by: -Agree/Disagree	Liu et al (2014) Cowburn and Stockley (2005).

3. EXPERIMENT

180 participants (87 women and 93 men) between the age of 18 and 80 years old (M= 27,06 years, SD=10,71 years) answered to the survey, completed in English what was designed and performed on Qualtrics software (bino.qualitrics.com) and lasted for two weeks (From the July 1st, 2018 to July 15th). The experiment complies with the legislation.

To design the study, four products are chosen (vacuum cleaner, dishwasher, cereals, soda) in different product categories of high consumption products. Then, four brands and eight packages are created (*EXHIBIT 2*). We try to equalize the likability of every product to avoid likability effect when measuring attitude and purchase intention. Each image consists of a combination of two elements: a self-declared claim and a mandatory fact information label, joined together to form a shape, which is displayed in a consistent or inconsistent manner. The first image represents a consistent vacuum cleaner packaging, conversely the second one represents an inconsistent vacuum cleaner packaging. Then, the third image displays a consistent dishwasher packaging and on the contrary, the fourth image displays an inconsistent dishwasher packaging. Overall, the dishwasher and vacuum cleaner packages enable us to collect data on the environmental aspect. For the nutritional side, the first image shows a consistent cereals packaging, conversely the second one shows an inconsistent cereals packaging. Then, the third image represents a consistent soda packaging and contrarily the fourth image represents an inconsistent soda package. The product packages are non-existing brands designed especially for the study and are introduced to the participants in an identical way. However, each participant will see four images, meaning either the consistent or inconsistent vacuum cleaner, then either the consistent or inconsistent dishwasher, then either the consistent or inconsistent cereals and finally either the consistent or inconsistent soda.

This is an exploratory study designed to assess consumer's attitude, purchase intention, recall and recognition between the consistency or inconsistency of the self-declared claim and the mandatory fact information label on a same product packaging regarding participants' environmental/ nutritional sensitivity

and knowledge. At the beginning of the experiment, the participants are presented with the general aims of the study *("we are interested in understanding the impact of packaging information given by self-declared claims and mandatory fact information labels on the consumer pre-purchase behaviour")* and are asked to sign a standard consent form. We further notice the participants that there are no right or wrong responses and that they should respond according to what feels right to them.

Once they agree to take part in the study, we explain to the participants the key following concepts and present them a visual example. Then, on one side, self-declared claim is explained as statements made by manufacturers on a packaging about the characteristics of one or more of its product features and the visual of a Coca-Cola can claiming "Zero sugar" is presented as an example of a self-declared claim. On the other side, mandatory fact information label is explained as mandatory information on packaging that brands have to communicate on to comply with the legislation and be allowed to sell their products. The visual of two mandatory fact information labels for a pack of cereals and a washing machine are presented as examples of mandatory fact information labels. After that, respondents move on to the actual experiment. The first part of the experiment measures the attitude and purchase intention towards the presented product.

Firstly, either the consistent or the inconsistent vacuum cleaner packaging is presented. The first question instructs participants to indicate on a seven-point likert scale (from strongly favourable to strongly unfavourable) the extent to which they would describe their overall attitude towards the product. The second question instructs respondents to indicate on a seven-point likert scale (from extremely likely to extremely unlikely) the extent to which they would like to buy the product given information shown. Then, the same procedure is done for the three remaining products showing either the consistent or the inconsistent dishwasher packaging, either the consistent or the inconsistent cereal packaging and finally either the consistent or the inconsistent soda packaging. We have decided to present either the consistent or the inconsistent packaging in a randomized order to avoid not only position effects but also the possibility that participants see only consistent or inconsistent packages so that we can have more data regarding their knowledge or sensibility.

In a second part, once they answer to all the questions linked to the visual product packaging, the participants answer some questions so that we can analyse and know their nutritional/environmental sensitivity and knowledge. At this moment, we remind participants that there is no right or wrong answer and to keep in mind answers are anonymous to avoid social effect. Regarding the nutritional sensitivity and knowledge part, the first question gathers six sentences and instructs participants to indicate on a seven-point likert scale (from strongly agree to strongly disagree) the extent to which they would agree with the following statements *(1) When I buy products, I am concerned about the nutrition benefits (sugar, fat, salt...), (2) I am interested in the nutritional mandatory fact information label on a product while shopping, (3) I would like to receive additional information about nutritional mandatory fact information label, (4) I intend to pay attention to the nutritional mandatory fact information label on a product while shopping, (5) I understand the terms "fat", "saturated fat", "sodium", "carbohydrate", "energy" and "sugar" on nutrition labels,* and (6) *The nutritional label on a packaging is meaningful to me*. The second question is an open question and asks participants how many calories per day they should get.

Regarding the environmental sensitivity and knowledge part, the question gathers eight sentences and instructs participants to indicate on a seven-point likert scale (from strongly agree to strongly disagree) the extent to which they would agree with the following statements *(1) When I buy products, I am concerned about the environmental benefits (eco-efficiency, eco-friendly, energy consumption), (2) I am interested in the environmental mandatory fact information label on a product while shopping, (3) I would like to receive additional information about environmental mandatory fact information labels, (4) I intend to pay attention to the environmental mandatory fact information label on a product while shopping, (5) Products in sleep mode do not use any electricity, (6) I understand the values on environmental mandatory fact information labels (kW/annum, dB, kWh/cycle), (7) I know the difference between a grade "A" and "B" on the mandatory fact information label means*, and *(8) I understand the role and the impact of the information provided by the environmental fact information label*.

In a third part, we aim at assessing the participant memory. To do that, we firstly ask respondents to list all the brands they remember seeing during the survey

as an open question. Secondly, we present them a list of twenty invented brand names (Cleanator, Artom, Moorner...) and ask them to click on the brands they had seen during the survey.

Finally, once they answer to all questions, the participants are asked to report their gender, their age and their nationality. Furthermore, we ask them if they had any issue during the completion of the survey or if the survey was unclear and uneasy to answer. This question has enabled us to improve the quality of our data for the analysis.

RESULTS

Consistency and Inconsistency: attitude and purchase intention

H1: *A consistent relationship between a self-declared claim and a mandatory fact information label on a same packaging leads to a more favourable attitude and higher purchase intention towards the product than an inconsistent relationship.*

H1 predicts that environmental or nutritional self-declared claims that are not consistent with mandatory fact information labels (environmental and nutrition value information) lead to a more unfavourable attitude and lower purchase intentions than a consistent relationship. A table of relevant means is shown in *Figure 1. Noticed, that in the following results, the data closer to 1 (such as the mean), the more favourable the attitude towards the product is or the higher purchase intention is. For attitude, 1 stands for "Strongly favourable" whereas 7 stands for "Strongly unfavourable". When it comes to purchase intentions, 1 is "Extremely likely" and 7 "Extremely unlikely".* Results show that the impact is different regarding the product category. The effects of consistency vs inconsistency are more visible on environmental products than nutritional products. On the one hand, H1 is validated for environmental products. Indeed, consistency between the self-declared claim *("High performance")* and information provided by the mandatory fact information label for the vaccum cleaner leads to a more favourable attitude (Mean = 2.4) and higher purchase intention (M = 1.9) than inconsistency (respectively, M = 4.7 and M = 4.3) and thus does support H1. We thus notice an advantage for a consistent relationship (respectively Δ = -2.3 for attitude and Δ = -2.4 for purchase intentions). In the dishwasher evaluation, we can observe very similar results as consistency leads to a more favourable attitude (Mean = 2.3) and higher purchase intention (M= 2.2) than inconsistency (respectively M = 5.0 and M = 4.8) and thus does support H1 as well. In the same way, we can claim an advantage for a consistent relationship (respectively Δ = -2.7 for attitude and Δ = -2.6 for purchase intention). However, when it comes to nutritional product, H1 is not supported. Indeed, for the cereals, consistency between the self-declared claim *"Extra healthy"* and the mandatory fact

31

information label leads to a slightly more favourable attitude (the attitude mean for the consistent relationship is 3.4 and 3.5 for inconsistency) but slightly lower purchase intention as well (the purchase intention mean for the consistent relationship is 3.4 and 3.3 for inconsistency). We cannot notice any relevant difference between consistency and inconsistency figures. Purchase intention relative to an inconsistent relationship is even better than for a consistent message. When it comes to the soda, results are slightly relevant however. Indeed, in the soda evaluation, when the claim *"Zero sugar"* is either consistent or inconsistent with the nutritional information on the mandatory fact information label, consistency lead to a more favourable attitude (Mean = 3.6) and higher purchase intention (M = 3.8) than inconsistency (respectively M = 4.0 and M = 4.0). We thus notice an advantage for a consistent relationship (respectively Δ = -0.4 for attitude and Δ = -0.2 for purchase intention), which confirms H1 but reveals less impact than for environmental products though also. To conclude, our hypothesis H1 is validated for both environmental products (vacuum cleaner and dishwasher), but cannot be confirmed for nutritional products. We then firstly observed significant differences between product categories that could depend of the use, the price, and other variables.

To evaluate the three remaining hypotheses (H2, H3, and H4), we have included two moderators we have previously identified: sensitivity and knowledge.

H2a: When there is a consistent relationship between a self-declared claim and a mandatory fact information label on a same packaging, high environmental/nutritional knowledge or sensitivity leads to a more favourable attitude and higher purchase intention towards the product than when environmental/nutritional knowledge or sensitivity is low.

To get H2a verified, a table of relevant means is shown in *figures 2a & 2b*. The *figure 2a* shows attitude and purchase intention results relative to the impact of the level of sensitivity (high vs low) on the evaluation of a consistent packaging. With the introduction of sensitivity as a moderator we firstly can observe that when there is a consistent relationship between a self-declared claim and a mandatory fact information label on a same packaging, high environmental/nutritional sensitivity

leads to a more favourable attitude towards the product than when environmental/nutritional sensitivity is low. Indeed, regarding the nutritional products, in the cereals evaluation, the attitude mean is 3.8 when the nutritional sensitivity is low and is lower (M = 3,3) when the level of sensitivity is high (Δ = -0.5). Similarly, for the soda, the mean is 3.7 when the nutritional sensitivity is low and is lower as well (M = 3.5) when the sensitivity is high (Δ = -0.2). Regarding the environmental products, for the vacuum cleaner, the mean is 2,9 when the environmental sensitivity is low and is lower (M = 2.3) when the level of sensitivity is high (Δ = -0.6). Similarly, for the dishwasher, the mean is 2.4 when the environmental sensitivity is low and becomes lower (M = 2.3) when the level of sensitivity is high (Δ = -0.1). Secondly, when there is a consistent relationship between a self-declared claim and a mandatory fact information label on a same packaging, high environmental/nutritional sensitivity leads to higher purchase intention than when environmental/nutritional sensitivity is low. Indeed, for the cereals, the mean is 3.7 when the nutritional sensitivity is low and is lower (M = 3.3) when the level of sensitivity is high (Δ = -0.4), meaning that purchase intentions increase. Similarly, for the soda, the mean is 4.3 when the nutritional sensitivity is low and becomes lower (M = 3.6) when the level of sensitivity is high (Δ = -0.7). Regarding the environmental products, the mean for the vacuum cleaner is 2.2 when the environmental sensitivity is low and is lower (M = 1.8) when the level of sensitivity is high (Δ = -0.4). Similarly, for the dishwasher, the mean is 2.5 when the environmental sensitivity is low and is also lower (M = 2.1) when the level of sensitivity is high (Δ = -0.4). H2a related to the sensitivity moderator is validated for both nutritional and environmental products.

Introducing the concept of knowledge as a moderator we can also observe that when there is a consistent relationship between a self-declared claim and a mandatory fact information label on a same packaging, high environmental/nutritional knowledge leads to a more favourable attitude and higher purchase intention towards the product than when environmental/nutritional knowledge is low. The *figure 2b* shows attitude and purchase intention results relative to the impact of the level of knowledge (high vs low). Indeed, regarding the nutritional products, for the cereals, the mean is 3.6 when the nutritional knowledge

is low and is lower (M = 3.3) when the knowledge is high (Δ = -0.3). Similarly, for the soda, the mean is 3.8 when the nutritional knowledge is low and is lower as well (M = 3.5) when the level of knowledge is high (Δ = -0.3). Regarding the environmental products, for the vacuum cleaner, the mean is 2.6 when the environmental knowledge is low and becomes lower (M = 2.3) when the level of knowledge is high (Δ = -0.3). Similarly, in the dishwasher evaluation, the mean is 2.5 when the environmental knowledge is low and is lower too (M = 2.2) when the level of knowledge is high (Δ = -0.3). Secondly, when there is a consistent relationship between a self-declared claim and a mandatory fact information label on a same packaging, high environmental/nutritional knowledge leads to higher purchase intention than when environmental/nutritional knowledge is low. Indeed, in the cereals evaluation, the mean is 3,5 when the nutritional knowledge is low and becomes lower (M = 3.3) when the level of knowledge is high (Δ = -0.2), meaning that the purchase intentions increase. Similarly, for the soda, the mean is 4.0 when the nutritional knowledge is low and is lower (M = 3.7) when the level of knowledge is high (Δ = -0.3). Regarding the environmental products, for the vacuum cleaner, the mean is 1.9 when the environmental knowledge is low and is lower (M = 1.8) when the level of knowledge is high (Δ = -0.1). Finally, in the dishwasher evaluation, the mean is 2.4 when the environmental knowledge is low and is lower (M = 2.0) when the level of knowledge is high (Δ = -0.4). H2a relative to knowledge moderator is validated for both nutritional and environmental products.

We noticed that we can observe small differences in the mean between highly sensitive and highly knowledgeable people and also low sensitive and low knowledgeable people. This observation shows that sensitivity and knowledge may be in a way interdependent variables.

H2b: When there is an inconsistent relationship between a self-declared claim and a mandatory fact information label on a same packaging, high environmental/nutritional knowledge or sensitivity leads to a more unfavourable attitude and lower purchase intention towards the product than when environmental/nutritional knowledge or sensitivity is low.

To get H2b verified, a table of relevant means is shown in *figures 2c & 2d*. The *figure 2c* shows attitude and purchase intention results relative to the impact of the level of sensitivity (high vs low) on the evaluation of inconsistent packaging. Introducing the concept of sensitivity as a moderator, we can first observe that when there is an inconsistent relationship between a self-declared claim and a mandatory fact information label on a same packaging, high environmental/nutritional sensitivity does not automatically lead to a more unfavourable attitude towards the product than when environmental/nutritional sensitivity is low. Our hypothesis is only not verified for environmental products. Indeed, when analysing attitude, H2b is first not verified for the vacuum cleaner. The attitude mean is 4.9 when the environmental sensitivity is low but becomes lower (M = 4.7) when the level of sensitivity is high (Δ = -0.2), meaning that highly sensitive people have a more favourable attitude towards the product than the ones who have a low sensitivity with an inconsistent message. Conversely, H2b is verified for the attitude in the dishwasher evaluation. Indeed, the mean is 4.8 when the environmental sensitivity is low and becomes higher (M = 5.0) when the level of sensitivity is high (Δ = +0.2), which reveals that the attitude is more unfavourable among high environmental sensitivity people. Regarding both nutritional products, H2b is verified for attitude. In the cereals evaluation, the mean for attitude is 3.0 when the nutritional sensitivity is low and is higher (M = 3.6) when the level of sensitivity is high (Δ = +0.6). Similarly, for the soda, the attitude mean is 3.7 when the nutritional sensitivity is low and is also higher (M = 4.1) when the level of sensitivity is high (Δ = +0.4). As a result, our H2B hypothesis linked with sensitivity is verified for only 3 products out of 4 for people's attitude towards the products. Secondly, when there is an inconsistent relationship between a self-declared claim and a mandatory fact information label on a same packaging, high environmental/nutritional sensitivity leads to lower purchase intention than when environmental/nutritional sensitivity is low, for only three products evaluations out of four (the vacuum cleaner does not still enable us to confirm H2b). Indeed, the purchase intention mean is 4.3 when the environmental sensitivity is low and is the same (M = 4.3) when the level of sensitivity is high (Δ = 0), meaning that highly and low sensitive people have similar purchase intention towards the product with an inconsistent message. For the dishwasher, the mean is 4.2 when the environmental sensitivity is low and

becomes higher (M = 4.9) when the sensitivity is high (Δ = +0.7), confirming H2b for purchase intention. Similarly, for the cereals, the mean is 2.9 when the nutritional sensitivity is low and is higher (M = 3.5) when the sensitivity is high (Δ = +0.6), meaning that purchase intentions decrease. Finally, through the soda evaluation, the mean is 3.9 when the nutritional sensitivity is low and is higher (M = 4.0) when the sensitivity is high (Δ = +0.1). To conclude, H2b related to the sensitivity moderator is only verified for three of the four products when it comes to purchase intention as well. This hypothesis is consequently verified for both nutritional products and the dishwasher whereas it is not for the vacuum cleaner, in which case attitude is not more unfavourable and purchase intention not lower among high environmental sensitivity people (vs low environmental sensitivity people) facing an inconsistent relationship between a self-declared claim and a mandatory fact information label.

With the introduction of knowledge as a moderator we can observe that when there is an inconsistent relationship between a self-declared claim and a mandatory fact information label on a same packaging, high environmental/nutritional knowledge does not necessarily lead to more unfavourable attitude or lower purchase intentions towards the product than when environmental/nutritional knowledge is low. The *figure 2d* shows attitude and purchase intention results relative to the impact of the level of knowledge (high vs low). Indeed, when analysing attitude, H2b is not verified for one product in each category (the vacuum cleaner and the soda). Indeed, in the vacuum cleaner evaluation, the attitude mean is 4,8 when the environmental knowledge is low and is lower (M = 4.7) when the knowledge is high (Δ = -0.1). In the soda evaluation, the mean is 4.3 when the nutritional knowledge is low and is also lower (M = 3.9) when the level of knowledge is high (Δ = -0.4), meaning that high knowledgeable people have a more favourable attitude towards the product than the ones who have a low knowledge with an inconsistent message. Regarding the dishwasher, H2b is verified for the attitude. Indeed, the mean is 4.7 when the environmental knowledge is low and becomes higher (M = 5.1) when the knowledge is high (Δ = +0.4). Similarly, regarding the cereals, H2b is also verified for attitude. The mean is 3.4 when the nutritional knowledge is low and is higher as well (M = 3.5) when the

level of knowledge is high (Δ = +0.1). Secondly, when there is an inconsistent relationship between a self-declared claim and a mandatory fact information label on a same packaging, high environmental/nutritional knowledge leads to lower purchase intention than when environmental/nutritional knowledge is low, excepted for the soda product. Indeed, in the soda evaluation, the mean is 4.4 when the nutritional knowledge is low and becomes lower (M = 3.9) when the level of knowledge is high (Δ = -0.5). Nevertheless, H2b is verified for the three other products (dishwasher, vacuum cleaner and cereal) in terms of purchase intention. For the cereals, the mean is 3,1 when the nutritional knowledge is low and becomes higher (M = 3.4) when the knowledge is high (Δ = +0.3), meaning that the purchase intentions decrease among highly knowledgeable people. Similarly, for the dishwasher, the mean is 4.3 when the environmental knowledge is low and is also higher (M = 5.0) when the level of knowledge is high (Δ = +0.7). Finally, in the vacuum cleaner evaluation, the mean is 4.0 when the environmental knowledge is low and is higher as well (M = 4.4) when the level of knowledge is high (Δ = +0.4). To conclude, when it comes to purchase intention, our hypothesis H2B is verified for all our products except the soda. This specific case is hard to explain, and it would be relevant to conduct further research on it to understand why it does not confirm our initial hypothesis, whereas the other products do.

H3: When the consumer environmental/nutritional knowledge or sensitivity is high (compared to when it is low), inconsistency leads to higher change in attitude and purchase intention towards the product than when the relationship is consistent.

To evaluate the validity of our hypothesis H3 we need to calculate the gap between *1- attitude and purchase intention grading difference between highly sensitive / highly knowledgeable respondents and low sensitive / low knowledgeable respondents on a consistent relationship basis* and *2- attitude and purchase intention grading difference between highly sensitive / highly knowledgeable respondents and low sensitive / low knowledgeable respondents on an inconsistent relationship basis*. Basically, the *figure 3*a indicates the sum of the deltas we computed in the *figures 2a & 2c* for sensitivity and the the *figure 3*b indicates the

sum of the deltas we computed in the *figures 2b & 2d.* Consequently, our hypothesis H3 is verified if the absolute value of the score in the column INCONSISTENCY is higher than the absolute value of the score in the column CONSISTENCY, meaning that inconsistency leads to higher change in attitude and purchase intention towards the product than when the relationship is consistent betweeen low and highly sensitive/knwoledgeable people.

Firstly, we focused on sensitivity (*figure 3a*). As a result, regarding attitude, H3 is not validated for the vaccum cleaner as an inconsistent message leads here to lower absolut change in attitude (0,2 vs 0,6 for consistency). However, for the three remaining product, H3 is confirmed. Then, for the dishwasher, for the cereals and the soda, an inconsistent message leads to higher absolute change in attitude (respectively, 0,2 vs 0,1; 0,6 vs 0,5 and 0,4 vs 0,2 for consistency) meaning that the negative change in attitude due to inconsistency is higher than the positive change due to consistency. Regarding purchase intention, H3 is not validated for the vaccum cleaner and the soda as an inconsistent message leads here to lower absolute change in purchase intention (respectively 0 vs 0,4 and 0,1 vs 0,7 for consistency). However, for the dishwasher and the cereals, H3 is confirmed. Then, for the dishwasher and the cereals, an inconsistent message leads to higher absolute change in purchase intention (respectively, 0,7 vs 0,4 and 0,6 vs 0,4 for consistency) meaning that the negative change in purchase intention due to inconsistency is higher than the positive change due to consistency. To conclude H3 is only validated for nutritional product among sensitivity for attitude as as when the consumer environmental/nutritional sensitivity is high (compared to when it is low), inconsistency leads to higher absolute change (which will be negative, then showing a more unfavorable attitude) in attitude towards the product than when the relationship is consistent.

Secondly, we focused on knowledge (*figure 3b*). As a result, regarding attitude, H3 is only validated for the vaccum cleaner as an inconsistent message leads here to lower absolute change in attitude (0,4 vs 0,3 for consistency). Regarding purchase intention, H3 is validated for both environmental and nutritional product. An inconsistent message leads here to higher absolute change in purchase intention (respectively inconsisteny vs consistency give the following results: 0,4 vs 0,1 for the vaccum cleaner; 0,7 vs 0,4 for the dishwasher, 0,3 vs 0,2

for the cereals and 0,5 vs 0,3 for the soda) However, we have to moderate the results as the change in the soda evaluation reveal than more knowledge in the inconsistent relationship lead to better purchase intention. It was the same observation for the attitude (0,4 vs 0,3 for consistency). It is quite an unexpected results that could be firstly explained by the design of the product in the experiment. To conclude H3 is only validated for environmental product among knowledge for purchase intention as as when the consumer environmental/nutritional knowledge is high (compared to when it is low), inconsistency leads to higher absolute change (which will be negative, then lowering purchase intention) purchase intention towards the product than when the relationship is consistent.

At this point of the analysis, we have decided to go further and look if overall, an improvement of both sensitivity or knowledge could have improved the respondants answers (*figure 3c*). Firstly, as a first obeservation, when the relationship is consistent, being more sensitive or knowledgeable lead to a better evaluation of both environmental and nutritional product, meaning that both attitude and purchase intention increase. Then, with the same methodology, we need to calculate the gap between *1- attitude and purchase intention grading difference between highly sensitive or highly knowledgeable respondents and low sensitive or low knowledgeable respondents on a consistent relationship basis* and *2- attitude and purchase intention grading difference between highly sensitive / highly knowledgeable respondents and low sensitive / low knowledgeable respondents on an inconsistent relationship basis*. Indeed, for the vaccum cleaner a consistent message leads here to higher absolute change in attitude (0.3 vs 0.1 for inconsistency) and purchase intention is stable (0,2) among highly sensitive or knowledgeable people. Conversely, for the dishwasher, inconsistency leads to higher absolute change in terms of attitude (0.4 vs 0.3 for a consistent message) towards the product than consistency among highly sensitive or knowledgeable people. The trend is the same for purchase intention since inconsistency leads to an absolute change of 0,8 whereas consistency leads to a change of 0.3 among highly sensitive or knowledgeable respondents. When it comes to the cereals, inconsistency leads to higher change in terms of purchase intentions than consistency (0.4 vs 0.3), but this is the contrary for attitude, since the change is higher with a consistent message (0.4 vs 0.3 for an inconsistent message). Finally,

the results for the soda show that for both attitude and purchase intention, consistency leads to higher absolute change than inconsistency among highly sensitive or knowledgeable people (0,3 vs 0 for attitude and 0,6 vs 0.2 for purchase intentions). As a conclusion, only the dishwasher evaluation enable us to support that when the consumer environmental/nutritional knowledge or sensitivity is high (compared to when it is low), inconsistency leads to higher change in attitude and purchase intention towards the product than when the relationship is consistent.

Overall, when comparing consistency and inconsistency, hypotheses are validated for both environmental and nutritional product. When analysing the moderators among consistency, hypotesis is validated for both nutritional en environmental product. However, results are nuanced when analysing moderators among inconsistency. We observed that H2b concerning attitude has been validated for nutritional product when introducing sensitivity and H2b concerning purchase intention has been validated for environmental product when introducing knowledge. The results are similar for H3.

Consistency and Inconsistency: recall and recognition

H4: *An inconsistent relationship between a self-declared claim and a mandatory fact information label on a same packaging leads to a better brand recall and recognition than a consistent relationship.*

To evaluate the validity of H4, we firstly need to assess to what extent people can remember a brand without help (recall). As an important measure of the consumer pre-purchase behaviour, recall data is collected at the end of the survey, asking respondents to write the brand names they remember seeing during the survey without any help (the right answers were *Aspirex*, *Cleantastic*, *Moorner*, *Bubbles)*. The measure for brand recall is a dichotomous variable equal to one if the respondent properly writes the brand in the survey and zero otherwise. The outcomes for brand recall are detailed in *figure 4*, in which the results account for

the number of people able to quote the brand out of all the 180 respondents. According to this table, H4a is validated since respondents have a better recall with an inconsistent relationship between a self-declared claim and a mandatory fact information label than with a consistent relationship for three products out of four. Concerning the vacuum cleaner, 17% of the respondents remember "Aspirex" as the brand name of the product when the message is consistent, whereas 27% of the respondents do with an inconsistent relationship between the self-declared claim and the mandatory fact information label. In the same way, respondents have a better recall for both nutritional products when the message is inconsistent compared to a consistent message. Indeed, only 15% recall the brand "Moorner" for cereals when the relationship is consistent vs 26% when the relationship is inconsistent. When it comes to the soda brand "Bubbles", 32% can recall it in a consistent relationship and 46% in an inconsistent relationship. The dishwasher is the only product for which respondents have a better recall of the brand "Cleantastic" in a consistent relationship (19%) than in an inconsistent one (13%).

Secondly, we need to assess to what extent respondents are able click on the brand names they remember seeing during the survey (recognition). Among twenty different choices, only 4 options are the right brands the respondents are confronted with during the survey. The outcomes for brand recognition are detailed in *figure 4*, in which the results account for the number of people able to find the brand out of all the 180 respondents. According to these figures, H4 is verified, since brand recognition is better through an inconsistent relationship than a consistent one between a self-declared claim and a mandatory fact information label, whatever the product.When 58% of respondents recognize the brand "*Aspirex*" for the vacuum cleaner in an inconsistent relationship, only 52% recognize it when the message is consistent. In the same way, 46% of respondents recognize the dishwasher brand "*Cleantastic*" when the message is inconsistent whereas it is only the case for 42% when the self-declared claim and the mandatory fact information label are consistent. When it comes to nutritional products, the recognition rate is the same for the cereals brand "*Moorner*" in an inconsistent and a consistent relationship (39%), but the soda brand "*Bubbles*" is better recognized by respondents who are confronted with an inconsistent relationship (78% vs 67% when the relationship is consistent). These results do enable us to claim that inconsistency improves brand

recognition over consistency since brands and products that display inconsistent information are better recognized by respondents. To conclude about memory, H4 is validated for both environmental and nutritional product, since brands with inconsistent information are better recalled and recognized than the ones that display consistent messages on their packaging. Generally, consumers thus have better brand recall and recognition when the relationship between a self-declared claim and a mandatory fact information label is inconsistent. An explanation to this could be that people globally pay more attention to the whole packaging when they notice that there is an incoherence or an inconsistency on it. If they are aware of an inconsistent relationship between the self-declared claim and the mandatory fact information label, they may be willing to look at the product more deeply and thus have a longer interaction with the brand name. It would be consequently easier for them to recall or recognize this brand name. In the case of a consistent relationship, people can trust the product more easily and reduce the time they spend on looking at the product. Consumers' buying decision process is likely to be longer if they see something they did not expect, that is why with an inconsistent message, they may spend more time on the analysis of the product and thus have more chance to recall and recognize the brand a few minutes later.

H5: *When the relationship between a self-declared claim and a mandatory fact information label is consistent (or inconsistent), highly sensitive and knowledgeable people have a better brand recall than low sensitive and knowledgeable people.*

Introducing the concept of sensitivity as a moderator, people who are highly environmental or nutritional sensitive tend to have a better recall than the ones who have a low level of sensitivity, when the relationship between a self-declared claim and a mandatory fact information label is consistent.

To get H5 verified, a table of relevant means is shown in *figure 5*. Concerning the vacuum cleaner, 11% of the respondents remember "*Aspirex*" as the brand name of the product when the sensitivity is low, whereas 19% of the highly

sensitive respondents recall the brand. In the same way, for the dishwasher evaluation, 17% of the respondents remember "*Cleantastic*" as the brand name of the product when the sensitivity is low, whereas 33% of the respondents recall the brand when the sensitivity is high. It is the same results for the nutritional products. Indeed, for both the cereals and the soda evaluation, 0% of low sensitive people recall the brand "*Moorner*" for cereals and "*Bubbles*" for the soda, while 19% recall that brands when their level of sensitivity is high. Secondly, when there is an inconsistent relationship between a self-declared claim and a mandatory fact information label on a same packaging, high environmental/nutritional sensitivity leads to a better recall as well, especially for environmental products. Indeed, for the vacuum cleaner, 20% of the respondents remember "*Aspirex*" as the brand name of the product when the sensitivity is low, whereas 29% of highly sensitive respondents recall the brand. In the same way, for the dishwasher evaluation, 6% of the respondents remember "*Cleantastic*" as the brand name of the product when the sensitivity is low, whereas 14% of the respondents recall the brand when the sensitivity is high. However, the results for the nutritional products are less obvious. Indeed, for the soda evaluation, 39% recall the brand "Bubbles" when the sensitivity is low, while 49% recall that brands when the sensitivity is high. However, for the cereals, 27% of low sensitive respondents recall the brand *"Moorner"*, while 49% do when their sensitivity is high. Consequently, regarding the sensitivity moderator, H5 is verified for environmental products for both consistency and inconsistency evaluation, but only when the message is consistent for nutritional products. As explained before, the nature of the product (hedonic vs utilitarian) could explained those results.

When it comes to the concept of knowledge as a moderator, it is more difficult to draw conclusions about the level of brand recall among low or highly knowledgeable people. Indeed, when the relationship between a self-declared claim and a mandatory fact information label is consistent, low knowledgeable people are 22% to recall the vacuum cleaner brand "*Aspirex*", whereas people with high knowledge are only 13% to remember it. However, the hypothesis is validated for the three other products, especially nutritional ones. For the dishwasher evaluation firstly, 14% of the respondents remember "*Cleantastic*" as the brand name of the

product when the level of knowledge is low, whereas 22% of the respondents recall the brand when the level of knowledge is high. It is the same results for both nutritional products. Indeed, for the cereals evaluation, 0% of low knowledgeable people recall the brand "*Moorner*" whereas 19% of highly knowledgeable people can do it. Finally, 24% of participants recall the soda brand "*Bubbles*" when the level of knowledge is low, whereas 34% of highly knowledgeable people recall it. When the message is inconsistent then, our hypothesis H5 is only verified for one product (cereals), in which case highly knowledgeable people have a better brand recall than the ones who have a low level of knowledge. In the vacuum cleaner evaluation, 29% of low knowledgeable respondents recall the brand "*Aspirex*" whereas only 27% of highly knowledgeable people do. Similarly, 14% of respondents recall the dishwasher brand "*Cleantastic*" when their level of knowledge is low, and only 12% when their level of knowledge is high. Moreover, the trend is similar for the soda product since 53% of low knowledgeable people recall the brand "*Bubbles*" and 45% of highly knowledgeable participants do. Cereals are the only product in which case our hypothesis H4b is verified for knowledge in an inconsistent relationship, as 17% of low knowledgeable people recall the brand "*Moorner*" and 29% do when their level of knowledge is high.

There is consequently a notable difference between the impact of sensitivity and knowledge when assessing the level of brand recall among the respondents. Highly sensitive people have a better brand recall than low sensitive respondents compared to highly knowledgeable people than people with a low level of knowledge. Consequently, these observations shows that sensitivity and knowledge may be better not consider as interdependent variables.

H6: *When the consumer environmental/nutritional knowledge or sensitivity is high (compared to when it is low), inconsistency leads to higher change in recall of the brand than when the relationship is consistent.*

To evaluate the validity of our hypothesis H6 we need to calculate the gap between *1- percentage difference between highly sensitive / highly knowledgeable respondents and low sensitive / low knowledgeable respondents on a consistent relationship basis* and *2- percentage difference between highly sensitive / highly*

knowledgeable respondents and low sensitive / low knowledgeable respondents on an inconsistent relationship basis. Basically, the *figure 5* indicates the deltas. As a result, regarding sensitivity, for the vaccum cleaner an inconsistent message leads here to higher percentage change in recall (9pts vs 8pts for consistency). However, for the three remaining product, H3 is not confirmed. Then, for the dishwasher, the Cereals and the Soda, an inconsistent message leads to lower percentage change in recall (respectively, 16pts vs 8pts; 19pts vs -1pts and 19pts vs 10pts for inconsistency). We cannot confirm the validity of H6 for recall with the sensitivity moderator. Regarding knowledge, H3 is also not validated.

DISCUSSION

The purpose of this research is to investigate the way a self-declared claim and a mandatory fact information label in a product packaging are placed on a packaging and how consistency and inconsistency affect the consumer pre-purchase behaviour, in terms of attitude and purchase intention towards those products and memory for the brands. The Elaboration Likelihood Model (Petty & Ciaccopo, 1984) proves to be a useful theory for understanding the way the relationship can be apprehended by consumers regarding some moderators and predicting the conditions (whether the relationship is consistent or inconsistent) under which attitude can be positively or negatively affected and whether a brand name included in a product packaging would be remembered. Sensitivity and knowledge were identified as two important moderators underlying these processes as they interact to influence attitude, purchase intention and memory.

Theoretical contribution:

Through the hypotheses we initially drew when started our thesis and the results we collected and then analyzed, our work has enabled us to find out several implications and contributions.

First and foremost, this study is the first attempt at measuring brand attitude and purchase intention changes that result from exposure to consistent or inconsistent information on a product packaging between a self-declared claim and a mandatory fact information label. Lots of studies were carried out to analyze the impact of these claims and these mandatory sources of information separately (Banerjee *et al.,* 1995; Baltas, 2001; Mitchell & Olson, 1981; Rao, 2010), but this research topic brings something new to the large field of study that deals with communication elements on packaging. As a result, it is relevant to notice how important it is for brands and companies to properly address the issue of packaging content, as we realized that consistency leads to more favourable attitude and higher purchase intention than inconsistency. First, the impact of consistency and inconsistency between a self-declared claim and a mandatory fact information label significantly varies regarding product categories. This observation is particularly

true for environmental products, more than for nutritional products. Indeed, the gap between consistency and inconsistency results for attitude and purchase intention was much more significant than the one concerning both nutritional products. It seems that consumers care more about environmental than nutritional packaging communication elements. We thus can conclude that a consistent message between a self-declared claim and a mandatory fact information label has a real positive impact on the pre-purchase behaviour of the consumer, even more for environmental products. We have also found that nutritional products can be more associated to personal pleasure and consumption that is why consumers might care less about a consistent or inconsistent relationship. Soda and cereals have a very short consumption life cycle and consumers can buy them to satisfy a one-time pleasure. It is a very different situation for environmental products as they can be used for years, which can explain that consumers care more about a consistent message between a self-declared claim and a mandatory fact information label.

Beyond basic notions such as consistency and inconsistency, the introductions of two moderators such as sensitivity and knowledge has enabled us to go further in our analysis to deliver other contributions. However, before looking at the impact of consistency and inconsistency regarding the levels of sensitivity and knowledge, it is relevant to look at the levels of sensitivity and knowledge themselves. Concerning the environment, respondents have a higher level of sensitivity than knowledge: 82% vs 64%. People are willing to favourably act for the environment but seem unable to do it because their level of knowledge is «low». Based on this observation, environmental labels are likely to be short of clarity for consumers. There may be a misunderstanding and consumers lack of training. When it comes to nutritional aspects, it is the contrary as the level of knowledge exceeds the level of sensitivity: 80% vs 75%. In other words, people know what is described on mandatory fact information labels but care less about it. They are less willing to follow the instructions and prefer to focus on their personal pleasure; even if it can be worse for their well-being and that they know it. These figures are very interesting and can make us understand the results collected through H1. A consistent relationship for environmental products has a much more positive impact on the pre-purchase behaviour than for nutritional products over an inconsistent message between a self-declared claim and a mandatory fact information label. As

people are more sensitive to than expert of environmental grading, they need to make further and deeper research to understand which products match their expectations in the best way. As a result, they spend more time to look at the mandatory fact information label and can be more sensitive to a consistent message or an inconsistent one. On the other side, it is quite different for nutritional products. In this category, people have a very satisfying level of knowledge about the mandatory fact information labels but are less sensitive to the content of the product. They focus more on their personal pleasure at the expense of negative effects a product can have on their health, even if they are aware of that. People consequently pay more attention to the colour, the image or the design of the packaging, forgetting what can be described on the mandatory fact information label and the consistency / inconsistency between a self-declared claim and a mandatory fact information label.

Furthermore, the impact of consistency and inconsistency is enhanced by the level of sensitivity and knowledge. Consumers who have a strongly sensitive and care for nutritional or environmental issues and labels are much more likely to process information available on the packaging, especially the relationship between the self-declared claim and the mandatory fact information label. In this way, they are bound to spend more time on looking at the packaging and go deeper in their analysis of the product. The more sensitive and knowledgeable people are, the more likely consistency and inconsistency impact their purchasing criteria and thus their final purchase decision. This implication is even more true for purchase intention than attitude, which confirms that the final buying decision depends on the quality of a consistent message between a self-declared claim and a mandatory fact information label. However, according to our observations and the results of our study, inconsistency does not lead to higher change in terms of attitude and purchase intention than consistency among highly sensitive and knowledgeable people. In other words, the negative effect driven by inconsistency does not have more impact than the positive one that is driven by consistency among highly sensitive and knowledgeable people. In this way, there is no supplementary negative effect with inconsistency that we could expect to find at the beginning of our reflection.

Moreover, this study shows that conditions that maximize memory do not necessarily maximize persuasion: while inconsistency between a self-declared

claim and a mandatory fact information label improves memory, consistency enhances attitude and purchase intention towards a product. In particular, brands are better remembered when the relationship is inconsistent, thus creating an incongruous situation. However, inconsistent relationship is found to adversely affect brand attitude and purchase intention because such relationship appears unnatural. Another contribution is that in terms of memory, the findings are consistent with the previous findings in the literature that show that memory is influenced by depth of processing such that more elaborate processing facilitates the subsequent recall of information like the name of brands. Except for the cereals product, in which case brand recall is better with a consistent relationship than an inconsistent one, this study demonstrates that inconsistency between a self-declared claim and a mandatory fact information label leads to a better recall and recognition of the brand over consistency. This effect occurs because, as noted previously, inconsistent information prompts attention and thus make consumers process the information more deeply than a consistent relationship. According to Friestad and Wright, 1995 when a brand's modality of presentation is not consistent with its level of plot connection, viewers tend to think about the reason for the brand's presence in the show and raise their cognitive defenses. A similar trend has been identified in this study, since when the self-declared claim and the mandatory fact information are inconsistent, consumers are likely to raise their cognitive defenses and process information more deeply, which leads them to better remember the brand itself. These better-recognition results and yet negative attitudinal effects observed in the inconsistent relationship are consistent with the peripheral route of the Elaboration Likelihood Model (Petty and Cacioppo 1986) and Zajonc's mere exposure effect (1968).

When introducing moderators such as sensitivity and knowledge, we have observed that highly sensitive people have a better brand recall than the ones who have a low level of sensitivity, whatever the relationship between the self-declared claim and the mandatory fact information label is consistent or not. However, results are less compelling when it is about knowledge especially for an inconsistent message. For brand recall, sensitivity thus seems to have a greater impact than knowledge. This is likely to be due to consumer behaviour, since highly sensitive people may be more likely to deeply analyse what is written on a packaging,

whereas people who are just knowledgeable can avoid spending too much time on it. Sensitivity leads to longer and deeper information process and thus to a longer touch point with the brand name. However, it should be relevant to make further research about these two moderators (sensitivity and knowledge) to evaluate how people precisely behave if they have acquired more sensitivity or knowledge during a period of time.

Practical implications:

One objective of the labelling regulation is to reduce consumer confusion regarding nutritional or environmental information on package by creating a standardized label and specifying which claims can be used under which conditions. Although regulations require specific guidelines for the use of such claims, consumers are generally not familiar with it or even not aware of it (Levy, 1995). Drawing for the Elabortation Likelihood Model (Petty & Ciaccopo, 1984), hypotheses present the effect of consistency (vs inconsistency) between a self-declared claim and a mandatory fact information label on a same product packaging given the level of sensitivity and knowledge of the consumer. In general, our results show that consistency and inconsistency impact consumers' attitude and purchase intention towards the product, and brand memory as well. When consistency globally improves consumers' attitude and purchase intention towards a product, particularly among highly sensitive and knowledgeable people and for environmental products, inconsistency promotes brand recall and recognition among consumers, as it increases consumers' information processing, that is to say the time they spend on looking at the packaging. Thus, study results suggest that while evaluating the product, consumers are influenced by the nature of the relationship between a self-declared claim and a mandatory fact information label. By specifying the persuasive impact of different types of cues in a message (Petty and Wegener 1998), the results from this study point to two dramatically different impacts on the consumer pre-purchase behaviour whether information is displayed in a consistent or inconsistent manner. Self-declared claims that are merely placed in a consistent way with the mandatory fact information label are as persuasive as self-declared claims that are merely placed in an inconsistent way with the mandatory fact information label when the knowledge and sensitivity are low for

both nutritional and environmental product categories. These findings suggest that, instead of informing consumers with large amounts of data or visual labelling, practitioners may simply try to educate and sensitize consumers about the mandatory fact information label. It seems essential for manufacturers to deliver a consistent and coherent message to consumers as consistency impacts pre-purchase behaviour especially when buying environmental products. Companies and brands must show consistency and transparency on their products packaging because consumers really care about their contents. However, conclusions regarding the influence of inconsistency may not hold for all consumers. Some consumers may lack sufficient sensitivity or knowledge to process detailed mandatory fact information label and may be influenced significantly by claims on the front of package. Then, practically, by teaching consumers to understand the label and (potentially) make use of it in their nutritional or environmental choices, it is possible to influence their attitude and purchase intention. Consequently, the current study may contribute to the existing literature by confirming that in addition to general environmental knowledge, specific environmental knowledge (i.e., knowledge about mandatory fact information labels) can also positively influence environmental attitude and pro-environmental consumer behaviour. This is, indeed, important because mandatory fact information labels are an environmental communication tool that aims to promote ecologically conscious consumer behaviour. This positive impact shows that consumers must be educated with mandatory fact information label knowledge that would enhance positive attitude towards environment and subsequently result in more favourable ecologically conscious consumer behaviour.

LIMITATIONS

Several limitations may restrict the generalizability of our findings. Regarding the experiment, firstly data were collected in a non-store environment, so variables such as brand names, promotional displays, time constraints, and other important situational factors that may affect consumers' use of self-declared claims and mandatory fact information labels did not influence results.

Secondly, in a context of purchase in a retail store self-declared claims and mandatory fact information labels are not accessible at the same time. Then, in the course of creating a product packaging specifically for the purpose of this study, various aspects of the natural phenomenon of product packaging design were necessarily altered or contained. For instance, the study did not account for the fact that mandatory fact information labels are usually not immediately readable (excepted GDA), forcing consumers to turn and manipulate the packaging at the retail point-of-purchase if they want to get additional information. Then, a consumer more sensitive to environmental and nutritional issues is more likely to manipulate a packaging in the shelves to find that kind of information. Consequently, as the survey put forward the mandatory fact information label next to a self-declared claim, leading to less differences according to the differing levels of sensitivity and knowledge that individuals develop through their personal experience and their education. Some of these alterations are due to the impracticality of reproducing the natural situation of a purchase in a retail store in the survey. Consequently, the possibility that such factors may shift the focus of a person's attention towards or away from consistent/inconsistent information, moderating the effect of consistency and inconsistency on attitude, purchase intention and memory, is not tested in this study.

Thirdly, because a mail survey was used, there was limited researcher control and no opportunity to observe subjects manipulating packaging.

Fourthly, an additional limitation of the design is the potential confound to have to analyse unknown designed products. Although all efforts were made to ensure the fact that these products are equally comparable to existing products, the likability remains a question of personal judgments and the analysis of purchase

intention push respondents to be able to imagine having to buy such a product, which can be difficult. This likability issue could explain why the soda packaging does not confirm H2b and H3, as the blue may unlikely to be associated to a soda product in consumers' minds. Comparing our designed products to true brands' products in the current market could have been a way to solve this issue. Besides, using designed product can threaten the external validity. Unknown brands can generate a suspicion rate leading participant to be more attentive to information. A logical extension of this research is the testing with existing products. As a result, the limited external validity of this study can indeed be solved by analysing the effect of consistency and inconsistency between a self-declared claim and a mandatory fact information label on memory and attitude for existing brands in real shelves.

Fifthly, when measuring the independent variables known as the moderator, we must take into account that a social effect can have occurred. Indeed, because it is well-perceived to be sensitive to environmental or societal issues, when measuring the sensitivity or the knowledge in the study, it is possible that some respondents have not been honest. Besides, the development of our set of items in measurement scales may need further validity and reliability test. Even if we use existing scales developed by experienced researchers reported in the academic litterature that have been proved to be reliable, we have adapted them to our study. This shorter adaptation may have decrease the reliability and may need further testing. Furthermore, the seventh question about nutritional sensitivity and knowledge may also be a significant issue. Through these questions, we asked the respondents to indicate which optimal amount of calories an average person should take in one day. Indeed, it was difficult to integrate it properly into our grading system. We decided to establish a binar grading system for this specific question, that is to say that people are either right or wrong, whereas the other six questions were graded on likert scales between 1 and 7. The grading system of question N7 was consequently not adapted. To deal with this issue and avoid bias on the final nutrition knowledge grade, we put the grade 2 for people who are able to give a relevant amount of calories and a 6 for people who don't. This methodology enabled us to integrate this question about calories, which is very relevant to assess respondents' level of knowledge according to us, without damaging the results we

collected on the other six questions which were graded on likert scales between 1 and 7.

Finally, we had the intention of evaluating the change in brand recognition among highly sensitive and knowledgeable people compared to participants who have low levels of sensitivity and knowledge and observing the impact when the message between the self-declared claim and the mandatory fact information label is consistent or not. However, we did not get compelling or understandable results to dig into low and highly sensitive and knowledgeable respondents.

Regarding the participants, we experienced a pretty high retention rate among all the respondents who started the survey , as many people gave up the survey while they were completing it. Indeed, we only collected 180 complete answers out of 277 persons who began the questionnaire. We were consequently disappointed with this high retention rate equal to 35%, which is not overlookable, making a lot of answers irrelevant and useless for our analysis. The length of the survey and respondents' interest about the topic are two main explanations to this high number of people who gave up during the survey. However, we want to nuance the length of the survey as the majority of the respondent did it in ten minutes.

Moreover, the last limitation we identified through this survey is the profile of the 180 respondents who completed our questionnaire. As French students, our inner circle is mainly composed of young French people between 20 and 26 years old. Even if we think that this kind of people can be sensitive to environmental and nutritional issues, this profile trend does not reflect accurately the average population of consumers. That is why we decided to communicate on our survey on social media, such as LinkedIn, where our personal networks are much more diverse and developed. Said that, it is also interesting to mention that 51,7% of our respondents are male and 48,3% are female, representing almost perfect gender equality. In addition, it may have exist some language difficulties for non native english respondents.

FURTHER RESEARCH

Results suggest several opportunities for further research. For instance, how a consumer processes specific package-related information to arrive at overall environmental/nutritional and product attitude is interesting. According to Stigler (1961) and his approach to the economics of information, a consumer searches product information, as long as the additional costs of searching does not outweigh the additional benefits of searching. Indeed, the costs of using nutritional fact information lie in the effort and time needed to gather and process information (Russo *et al.,* 1986). As an example, a consumer may look at labels to find the amount of fat but disregard the amounts of sodium because it has less visible consequences on the human body (Keller et al., 1997). However, mandatory fact information labels seem to be useful for the consumer as 52% of consumers use food labels to get nutritional facts about a product (Roper report – Szykman *et al.*, 1997) and 70% believe that the mandatory fact information label is the best place to find additional nutritional information (Mueller, 1991). It is all the more interesting considering the costs and benefits of current public health or environmental education designed to influence consumer sensitivity and knowledge to process information appears warranted. If further research shows how consumers process information, then the package seems to be one way to communicate information about nutritional and environmental issues supported by scientific evidence. Besides, research may be needed to develop more comprehensive measures of dimensions underlying enduring motivation to process nutrition and environmental information and objective and specific nutritional and environmental knowledge that could be used to track levels of these variables and understand how inconsistent information on a packaging is processed. Furthermore, as nutritional products can be associated to personal pleasure and consumption, the fact that consumers might care less about a consistent or inconsistent relationship need further research. Then, next studies can dissociate hedonic and utilitarian products. Furthermore, Soda and cereals have a very short consumption life cycle and consumers can buy them to satisfy a one-time pleasure, further results replicating

our study should focus on the type of products (hedonic or utalitarian – Dhar & Wertenbroch, 2000)

A related opportunity for further research also lies in differentiating among types of claims on a same product category. Indeed, for nonquantitative claims that are vague ("low in calories", "extra healthy"), it may be more difficult for consumers to recognize inconsistencies between the self-declared claim and the mandatory fact information label. However, quantitative claims ("X% fat free") can be assessed for accuracy more directly from the mandatory fact information label. Mandatory fact information labels are a good way to corroborate claims on the front of the package.

Further research could replicate and extend our work by addressing if consumers rely on the mandatory fact information label than they do on the self-declared claim or if consistency conveys more trust in the product or in the manufacturer than inconsistencies. Although some studies reveal an independent effect between self-déclared claims and mandatory nutritional fact information labels because the presence of a health claim, for instance, does not influence consumers' processing of nutritional information (Ford *et al.*, 1996), other studies found that consumers rely more on nutritional information than on claims when both are available (Keller et al., 1997). Moreover, consumers may rely on easily visible nutrition claims and ignore the nutrition fact panel (Roe *et al.,* 1999). It could be interesting to measure to what extent information on the mandatory fact information label is viewed as more credible and how consumers check the accuracy of the claims used as a form of promotion by the manufacturer to help sell the product.

An additional extension of this research lies in the investigation at the governmental level to understand how a consumer can be educated on nutritional and environmental labels to address the relative effectiveness of different approachs of disseminating information across segments of the population. Besides, experimenting new labelling with colour light for instance could also be a solution to be more understandable and visible on shelves. The implementation of such labels in store can be an opportunity for companies that can offer something on the nutritional or environmental level. This means that it could become an axis of
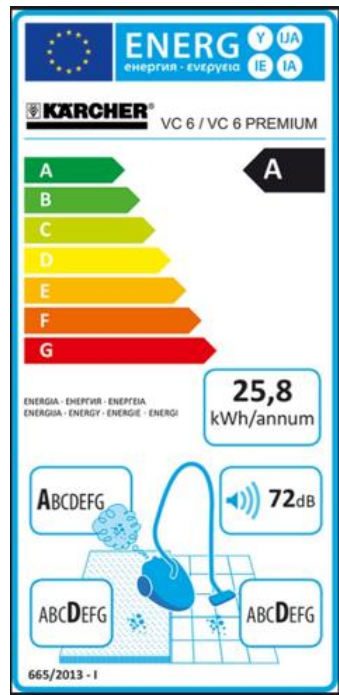
differentiation and a potential source of competitive advantage. Nevertheless, if manufacturers agree to line up and adopt all the good practices in the matter, the differentiation would be only temporary, however, the benefit for the planet would be great.

APPENDIX

Examples of mandatory fact information label for:

(a) Environmental Labelling (vacuum cleaner)   (b) Nutritional Labelling

EXHIBIT 2: **The Eight Packages used for the experiment**

Vacuum Cleaner – *Aspirex*

Consistent   **Inconsistent**

The self-declared claim deals with performance (« High performance ») and we have brought a modification to the consumption grade to design our consistent and inconsistent packages. For the consistent packaging, the energy consumption grade is A+++, whereas it is C on the inconsistent one.

Dishwasher - *Cleantastic*

Consistent	Inconsistent

The self-declared claim deals with water use (« Efficient use of water ») and we have brought a modification to the consumption grade to design our consistent and inconsistent packages. For the consistent packaging, the energy consumption grade is A+++, whereas it is C on the inconsistent one.

Cereals - *Moorner*

Consistent	Inconsistent
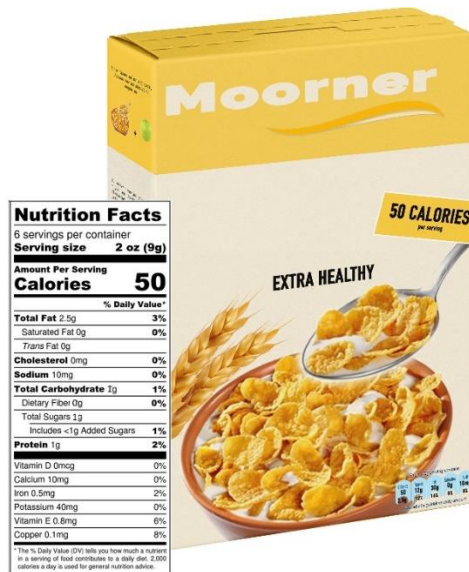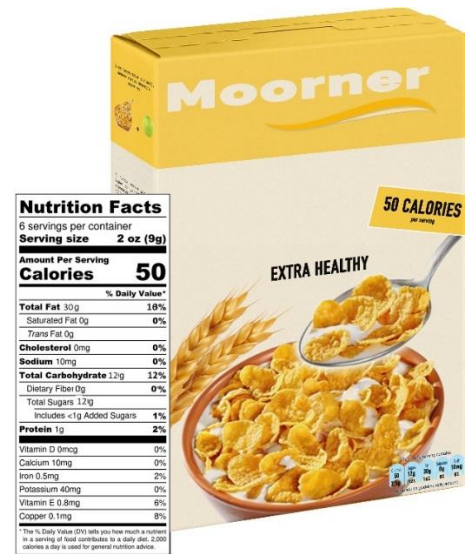
The self-declared claim deals with the product healthiness (« Extra healthy ») and we have brought a modification to the level of fat and carbohydrate to design our consistent and inconsistent packages. For the consistent packaging, the respective amounts of fat and carbohydrate are 2.5 g and 1 g and respectively 30 g and 12 g on the inconsistent one.

Soda - *Bubbles*

Consistent	Inconsistent

The self-declared claim deals with the amount of sugar (« Zero sugar ») and we have brought a modification to the level of sugars to design our consistent and inconsistent packages. For the consistent packaging, the amount of sugars is 0 g whereas it is 3 g on the inconsistent one.

EXHIBIT 3: Hypotheses test results

Figure 1*: Means of attitude and purchase intentions gradings of our four products relative to consistency and inconsistency (/7)*

	ATTITUDE				PURCHASE INTENTIONS		
	CONSISTENCY	*INCONSISTENCY*	*Δ*		*CONSISTENCY*	*INCONSISTENCY*	*Δ*
Vacuum cleaner	2,4	4,7	-2,3	Vacuum cleaner	1,9	4,3	-2,4
Dishwasher	2,3	5	-2,7	Dishwasher	2,2	4,8	-2,6
Cereals	3,4	3,5	-0,1	Cereals	3,4	3,3	0,1
Soda	3,6	4	-0,4	Soda	3,8	4	-0,2

Figure 2a: *Means of attitude and purchase intentions gradings of our four products regarding the level of respondents' SENSITIVITY (high vs low) in a consistent relationship between a self-declared claim and a mandatory fact information label (/7)*

	ATTITUDE				PURCHASE INTENTIONS		
	HIGH SENSITIVITY	*LOW SENSITIVITY*	*Δ*		*HIGH SENSITIVITY*	*LOW SENSITIVITY*	*Δ*
Vacuum cleaner	2,3	2,9	-0,6	Vacuum cleaner	1,8	2,2	-0,4
Dishwasher	2,3	2,4	-0,1	Dishwasher	2,1	2,5	-0,4
Cereals	3,3	3,8	-0,5	Cereals	3,3	3,7	-0,4
Soda	3,5	3,7	-0,2	Soda	3,6	4,3	-0,7

Figure 2b: *Means of attitude and purchase intentions gradings of our four products regarding the level of respondents' KNOWLEDGE (high vs low) in a consistent relationship between a self-declared claim and a mandatory fact information label (/7)*

	ATTITUDE				PURCHASE INTENTIONS		
	HIGH KNOWLEDGE	*LOW KNOWLEDGE*	Δ		*HIGH KNOWLEDGE*	*LOW KNOWLEDGE*	Δ
Vacuum cleaner	2,3	2,6	-0,3		1,8	1,9	-0,1
Dishwasher	2,2	2,5	-0,3		2	2,4	-0,4
Cereals	3,3	3,6	-0,3		3,3	3,5	-0,2
Soda	3,5	3,8	-0,3		3,7	4	-0,3

Figure 2c*: Means of attitude and purchase intentions gradings of our four products regarding the level of respondents' SENSITIVITY (high vs low) in an inconsistent relationship between a self-declared claim and a mandatory fact information label (/7)*

	ATTITUDE		
	HIGH SENSITIVITY	*LOW SENSITIVITY*	Δ
Vacuum cleaner	4,7	4,9	-0,2
Dishwasher	5	4,8	0,2
Cereals	3,6	3	0,6
Soda	4,1	3,7	0,4

	PURCHASE INTENTIONS		
	HIGH SENSITIVITY	*LOW SENSITIVITY*	Δ
Vacuum cleaner	4,3	4,3	0
Dishwasher	4,9	4,2	0,7
Cereals	3,5	2,9	0,6
Soda	4	3,9	0,1

Figure 2d: *Means of attitude and purchase intentions gradings of our four products regarding the level of respondents' KNOWLEDGE (high vs low) in an inconsistent relationship between a self-declared claim and a mandatory fact information label (/7)*

	ATTITUDE		
	HIGH KNOWLEDGE	*LOW KNOWLEDGE*	Δ
Vacuum cleaner	4,7	4,8	-0,1
Dishwasher	5,1	4,7	0,4
Cereals	3,5	3,4	0,1
Soda	3,9	4,3	-0,4

	PURCHASE INTENTIONS		
	HIGH KNOWLEDGE	*LOW KNOWLEDGE*	Δ
Vacuum cleaner	4,4	4	0,4
Dishwasher	5	4,3	0,7
Cereals	3,4	3,1	0,3
Soda	3,9	4,4	-0,5

Figure 3a: Means of attitude and purchase intentions gradings of our four products regarding the level of respondents' SENSITIVITY (high vs low) in a consistent relationship between a self-declared claim and a mandatory fact information label (/7)

CONSISTENCY

	ATTITUDE		
	HIGH SENSITIVITY	*LOW SENSITIVITY*	Δ
Vacuum cleaner	2,3	2,9	-0,6
Dishwasher	2,3	2,4	-0,1
Cereals	3,3	3,8	-0,5
Soda	3,5	3,7	-0,2

	PURCHASE INTENTIONS		
	HIGH SENSITIVITY	*LOW SENSITIVITY*	Δ
Vacuum cleaner	1,8	2,2	-0,4
Dishwasher	2,1	2,5	-0,4
Cereals	3,3	3,7	-0,4
Soda	3,6	4,3	-0,7

INCONSISTENCY

	ATTITUDE		
	HIGH SENSITIVITY	*LOW SENSITIVITY*	Δ
Vacuum cleaner	4,7	4,9	-0,2
Dishwasher	5	4,8	0,2
Cereals	3,6	3	0,6
Soda	4,1	3,7	0,4

	PURCHASE INTENTIONS		
	HIGH SENSITIVITY	*LOW SENSITIVITY*	Δ
Vacuum cleaner	4,3	4,3	0
Dishwasher	4,9	4,2	0,7
Cereals	3,5	2,9	0,6
Soda	4	3,9	0,1

Figure 3b: Means of attitude and purchase intentions gradings of our four products regarding the level of respondents' KNOWLEDGE (high vs low) in a consistent relationship between a self-declared claim and a mandatory fact information label (/7)

CONSISTENCY

	ATTITUDE		
	HIGH KNOWLEDGE	*LOW KNOWLEDGE*	Δ
Vacuum cleaner	2,3	2,6	-0,3
Dishwasher	2,2	2,5	-0,3
Cereals	3,3	3,6	-0,3
Soda	3,5	3,8	-0,3

	PURCHASE INTENTIONS		
	HIGH KNOWLEDGE	*LOW KNOWLEDGE*	Δ
Vacuum cleaner	1,8	1,9	-0,1
Dishwasher	2	2,4	-0,4
Cereals	3,3	3,5	-0,2
Soda	3,7	4	-0,3

INCONSISTENCY

	ATTITUDE		
	HIGH KNOWLEDGE	*LOW KNOWLEDGE*	Δ
Vacuum cleaner	4,7	4,8	-0,1
Dishwasher	5,1	4,7	0,4
Cereals	3,5	3,4	0,1
Soda	3,9	4,3	-0,4

	PURCHASE INTENTIONS		
	HIGH KNOWLEDGE	*LOW KNOWLEDGE*	Δ
Vacuum cleaner	4,4	4	0,4
Dishwasher	5	4,3	0,7
Cereals	3,4	3,1	0,3
Soda	3,9	4,4	-0,5

Figure 3c: *Sum of change in attitude and purchase intentions means among high sensitive and high knowledge, compared to low sensitive and knowledgeable people relative to consistency and inconsistency*

ATTITUDE				PURCHASE INTENTIONS		
	CONSISTENCY	INCONSISTENCY			CONSISTENCY	INCONSISTENCY
Vacuum cleaner	-0,3	-0,1	N	Vacuum cleaner	-0,2	0,2	N
Dishwasher	-0,3	0,4	Y	Dishwasher	-0,3	0,8	Y
Cereals	-0,4	0,3	N	Cereals	-0,3	0,4	Y
Soda	-0,3	0	N	Soda	-0,6	-0,2	N

Figure 4: *Brand recall and recognition rate among respondents relative to consistency and inconsistency (%)*

RECALL			RECOGNITION		
	CONSISTENCY	INCONSISTENCY		CONSISTENCY	INCONSISTENCY
Vacuum cleaner	17%	27%	Vacuum cleaner	52%	58%
Dishwasher	19%	13%	Dishwasher	42%	46%
Cereals	15%	26%	Cereals	39%	39%
Soda	32%	46%	Soda	71%	75%

Figure 5: *Brand recall rate among highly sensitive (vs low sensitive) and highly knowledgeable (vs low knowledgeable) respondents relative to consistency and inconsistency (%)*

CONSISTENCY					INCONSISTENCY		
	HIGH SENSITIVITY	LOW SENSITIVITY	Δ		HIGH SENSITIVITY	LOW SENSITIVITY	Δ
Vacuum cleaner	19%	11%	+8 pts	Vacuum cleaner	29%	20%	+9 pts
Dishwasher	33%	17%	+16 pts	Dishwasher	14%	6%	+8 pts
Cereals	19%	0%	+19 pts	Cereals	26%	27%	-1 pt
Soda	19%	0%	+19 pts	Soda	49%	39%	+10 pts
	HIGH KNOWLEDGE	LOW KNOWLEDGE	Δ		HIGH KNOWLEDGE	LOW KNOWLEDGE	Δ
Vacuum cleaner	13%	22%	-9 pts	Vacuum cleaner	27%	29%	-2 pts
Dishwasher	22%	14%	+8 pts	Dishwasher	12%	14%	-2 pts
Cereals	19%	0%	+19 pts	Cereals	29%	17%	+12 pts
Soda	34%	24%	+10 pts	Soda	45%	53%	-8 pts

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