Boosting as an intervention
for sustainable consumer behaviour:
Increasing transparency in a retail-setting

MSc Thesis

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Images front page (Hertwig, 2018; Rainforest Alliance, 2018)

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Abstract

The food production system we know today has become increasingly intensive, which puts an enormous strain on the environment. In order to tackle this issue, consumers will need to change their consumption behaviour towards buying more sustainable alternatives. Although environmental concern is growing, this does not mean consumers act upon these concerns. Consumers are confused by the large amount of eco-claims and labels, which are usually not very product-specific, abstract and future-focused. A possible approach to increase actionability would be through the use of boosts. The purpose of boosts is to increase people's competences to make their own well informed choices. Research on using boosting as a way to guide people in the world of ecolabelling is lacking, even though it would make a good combination based on the issues that consumers face when wanting to consume sustainably. The purpose of this study is to explore when and how boosting impacts consumer choice for a sustainable option. A virtual reality study (N = 150) was conducted in which consumers had to choose a tea from an assortment of tea boxes with and without the Rainforest Alliance (RFA) ecolabel. The effects of two different boosts, an informational context on the RFA label and a low-construal message about choosing an RFA-certified tea, were tested in a 2x2 between-subjects experimental design. The boosts did not increase the amount of sustainable choices. However, the low-construal message increased fixation on the labels, but not in combination with the informational context. The findings of this study give insights into the consumer decision-making process, as well as practical insights for virtual reality research methods in a retail setting. Additionally, the findings add to understanding how different ways of increasing transparency on sustainable products in a retail-setting affect consumer behaviour.

Key concepts: boosting; retail intervention; sustainable consumer behaviour; behaviour change; virtual reality; ecolabeling; construal level theory

Acknowledgements

1. Introduction

Population growth has led to a food production system that is increasingly intensive. This causes levels of greenhouse gas emissions to rise, a loss of biodiversity, water stress and the degradation of soil. The transport, storage and packaging of food, combined with the heating of greenhouses increases the environmental impact of food even further (Lazzarini, Visschers & Siegrist, 2018). Next to weighing on the environmental dimension of sustainability, agricultural intensification has also created a negative impact on the social dimension (Mockshell & Kamanda, 2018). For example, the prices that a tea producer can ask for have decreased enormously, as is the case for many other agricultural commodities. This puts pressure on the working conditions as well as the livelihoods of workers on the plantation and small farmers. Pickers have to deal with low wages, low income, job insecurity, discrimination regarding ethnicity and gender, lack of protective gear and a lack of proper housing and sometimes food and drinking water (van der Wal, 2008).

Consumers are becoming more aware of, as well as concerned about, these environmental, social, economic and ethical issues that occur in the field of food production and retailing (Jones, Comfort & Hillier, 2003). But people often report feelings of hopelessness when wanting to do something about, for example, climate change (Williamson, Satre-Meloy, Velasco & Green, 2018). This is a problem because perceived consumer effectiveness (PCE) is found to be a leading predictor of ecologically conscious consumer behaviour (Roberts, 1996). Which emphasizes that it is important for consumers to believe that they themselves can help in solving environmental problems by consuming differently. Also, when this individual behaviour change towards consuming more sustainably takes place for billions of individuals, it will make a definite difference. Almost two-thirds of all global emissions are directly or indirectly linked to human consumption (Williamson et al., 2018). Nearly a third of the environmental impact caused by household consumption can be accounted for by food production (Lazzarini et al., 2018).

It is, however, an enormous challenge to actually achieve this potential of sustainable consumer behaviour (Williamson et al., 2018). The concern for sustainability that consumers have needs to be translated to their purchases, to close this so-called attitude-behaviour gap (Terlau & Hirsch, 2015). It demands finding novel ways to engage individuals, as well as communities and households, which have to change their consumption patterns that are already embedded in their day-to-day practices (Williamson et al., 2018). Buying food is a low involvement activity because of these daily purchase routines, which results in automatic decisions based on the human mental system 1 (Kahneman, 2003). For individual behaviour to become sustainable consumer behaviour, decisions should be based on the human mental system 2 (Kahneman, 2003), because they are more rational and conscious and use the available information (Terlau & Hirsch, 2015).

An individual's decision-making process is strongly influenced by the contextual environment in which one's decisions are made, and also by the way the choice-options are presented to the individual (Williamson et al., 2018). Recognizing a sustainable product in the supermarket can be difficult for a consumer. One of the main reasons for this is the fact that sustainability is a credence characteristic of food products, which means that it can neither be seen, nor tasted (Grunert, 2011). One simply has to trust that a product is produced sustainably when it claims to be. To distinguish products that are produced sustainably from the ones that are not, sustainability labels were introduced. This is the

communication of sustainability on the food product (Grunert, Hieke & Wills, 2014). Examples include environmental labels, ethical labels (Grunert et al., 2014), or labels that focus on both the environment and ethical issues regarding people or animal welfare (Milieu Centraal, 2019). Examples of sustainability labels are the Fair Trade label, animal welfare labels, labels that express the carbon footprint, the UTZ label and the rainforest alliance label. The goal of these labels is to increase transparency regarding the food chain of a product and instruct consumers, encouraging sustainable consumption (Grunert et al., 2014), for example in the supermarket (Erskine & Collins, 1997), and as an incentive for organisations to be cautious of the environment (D'Souza, 2004). From here on, the focus of this paper will be on environmental labels, also known as ecolabels. These labels can be viewed as a seal of approval, as the environmental claims of a product are verified by independent sources (D'Souza, 2004). Ecolabels also possibly play a role in promoting and influencing the development of a larger amount of environmentally friendly products in supermarkets (Rubik, Scheer & Iraldo, 2008).

However, exposing consumers to ecolabels in the shop is not enough to increase sustainable behaviour. Consumers need to perceive the labels, they need to understand them and make inferences on the meaning of these labels for themselves (Grunert, 2011). As of now, these prerequisites are not always met.

Even when consumers do engage in central processing and they attempt to make sense of the label, it does not mean that the meaning they connect to the label corresponds with what the label actually means (Grunert, 2011). Grunert et al. (2014) show that currently, consumers use these ecolabels to a limited extent. This study mentions that absence of use could be related to absence of understanding. Sustainability is an abstract term that consumers may find difficult to relate to. Most consumers seem to be ignorant in determining the differences between environmental labels, which may be an explanation for the confusion around product claims (D'Souza, 2004). The spread of loosely regulated claims about the greenness of a product might contribute to these problems. Because a lack of regulation and standardisation exists, manufacturers are inclined to make misleading, confusing and deceptive marketing claims (Iraldo, Testa & Bartolozzi, 2014), also known as greenwashing (Delmas & Burbano, 2011). This undermines the confidence towards environmental information on products that the consumers might have had before (Iraldo, Testa & Bartolozzi, 2014). Not all labels that claim to be ecolabels are actually third-party certified, for example, the Ethical Tea Partnership label (Milieu Centraal, 2019). When consumers are no longer sure what they should believe, this seriously harms the so-called 'virtuous circle' of the companies that raise consumer awareness and achieve a competitive advantage by promoting their truly green products (Iraldo et al., 2014). The consumer cannot tell for sure whether green is actually green. A higher level of concern about sustainability issues regarding food production leads to a higher level of sustainability label-use. These effects, however, are not strong (Grunert et al., 2014).

Another issue that stands in the way of sustainable consumer behaviour is that a general concern for sustainability issues regarding food production, does not automatically translate into a concern that is product-specific, which would motivate the use of ecolabels when choosing a food product (Grunert et al., 2014). The future benefits and consequences of choosing sustainable products are uncertain, psychologically distant and abstract, creating a present bias. This present bias means that products with outcomes that are closer to the present are often chosen during the trade-off between different outcomes (Trudel, 2019). Thus, the information on the ecolabel might be traded off against other

criteria during the decision-making process. Consumers' positive attitudes towards sustainability are often dormant at the moment a choice is made, contributing to the attitude-behaviour gap (Grunert, 2011).

Thus, to reach the full potential of ecolabelling, research on explaining why and when consumers adopt ecolabels is much needed (Thøgersen, Haugaard & Olesen, 2010). Sustainable agricultural practices, with the support of consumer choices that are informed correctly by coherent environmental data on the food products, could support significant improvements at the local as well as the global level (Codron, Siriex & Reardon, 2006). Studies should address what improves comprehension, what reduces confusion, what makes an ecolabel credible for a consumer (Valor, Carrero & Redondo, 2013) and what makes the effects of buying sustainably salient in the present. Additional detailed and convincing information about a products' environmental and social features seems to be promising. This is because it addresses the previously mentioned challenges that are associated with ecolabelling, such as confusion, mistrust (Osburg, Yoganathan, Brueckner & Toporowski, 2019), understandability, making correct inferences and making the sustainability criterium less psychologically or spatially distant. This additional information could assist the consumer in taking credence characteristics of products into account, which could apply to various sustainability labels that reflect environmental and ethical standards. Useful information should provide the consumer with an unambiguous clear-cut message (Owen, Seaman & Prince, 2007).

Providing this information in a retail setting could be effective, because this means that the information is directly placed in the environment where the products are chosen. It has been shown that providing additional information about carbon labels specifically, directly before product choice, enhances label use and increases consumer focus on these labels (Emberger-Klein & Menrad, 2018). For people who are already aware of sustainability issues, this information could work as something that emphasizes what the effects of buying a sustainable product would be, functioning as a reminder if an individual lacks motivation because the positive attitude towards sustainability is dormant (Grunert, 2011). Retailers play a large role in sustainable consumer behaviour, since they are able to decide what the choice-options are for the consumers (Grunert, 2011). As the most extreme option of choice editing for sustainability, they could exclude all products with a bad environmental or social impact from their store. This strategy does not rely on behaviour change of the consumer. Large retailers do potentially have the power to influence consumer patterns in this way, but such extreme initiatives are often in conflict with the motive to increase profits. Another option a retailer has is providing sustainable products while maintaining their mainstream assortment. This way, retailers improve their green image without influencing the consumer's autonomy (Gunn & Mont, 2014). By providing the information about ecolabels that can be found on products right next to these products, as well as providing a message that makes the future benefits of choosing products with these labels more salient in the present, consumers can be guided in making an informed decision and they can apply this knowledge in future situations. These strategies can be considered 'boosts'.

The purpose of boosts is to increase people's competences to make their own well informed choices. These interventions, or boosts, are developed to make it less difficult for people to exercise one's own agency by supporting the already existing competences as well as introducing new ones (Hertwig & Grüne-Yanoff, 2017). In this case, these competencies are that the consumer knows how to recognize ecolabels, what the ecolabels stand for and has the ability to recall this information in a future choice-

setting. The consumer might already know or recognize the labels a little bit or not at all, but it appears that many people are not familiar with or do not recognize ecolabels (Solér, 2012; van Loo, Diem, Pieniak & Verbeke, 2013). Either way, boosting can be a tool to empower this consumer. After the new information is processed through system 2, the gained heuristics can enter the system 1 route again. This could lead to the creation of new habits in the time scarce activity of grocery shopping. Research on using boosting as a way to guide people in the world of ecolabelling is lacking, even though it would make a good combination based on the issues that consumers face when wanting to consume sustainably. Therefore, the following research question is formed:

When and how does boosting impact consumer choice for a sustainable option, in a tea assortment?

2. Theoretical background & Framework

2.1 Boosting

In order to understand boosting as an intervention that can be used to increase transparency in the supermarket, this paragraph provides a background on boosting, its position in behaviour change literature compared to nudging is clarified, and the application of boosting for this current study is explained.

2.1.1 Background on Boosting

For products to be chosen because they are sustainable, this sustainability needs to be communicated. It needs to be clear to the customer that a product is indeed a sustainable alternative. However, communication alone, for example, using ecolabelling, is not enough (Grunert, 2011). The consumer should notice the label, read it, and understand what it communicates. Next to this, the ecolabel must be perceived as reliable and motivating in making a sustainable choice. Consumers also may need to be reminded of their intentions to buy sustainably, especially in an environment in which they have to make a choice under time-pressure and an overload of information (Grunert, 2011). For ecolabels to promote green consumption successfully, they should be accompanied by campaigns that give information on the production aspects that are communicated by the label, in order to establish consumer understanding (Daugbjerg, Smed, Andersen & Schvartzman, 2014). Grunert (2011) also points out that retailers have an essential role in giving sustainable alternatives a prominent place on the shelves and providing in-store reminders that assist consumers in recalling their interest in sustainable products (Grunert, 2011). Misconceptions that consumers have should be addressed, and new ways to promote purchasing environmentally sustainable food should be found. Research on how the ability to recognize these sustainable foods (using ecolabeling) influences the actual choice is needed (Lazzarini et al., 2018). Taking all this into account, a new way to assist consumers in finding sustainable alternatives and increasing actionability is by using a boosting technique. For this study, boosting is suggested as an intervention.

The principle of a boost is that people's competences to make their own well-informed choices are increased, and/or new competences are created. Herewith boosts make it easier for an individual to exercise one's own agency (Hertwig & Grüne-Yanoff, 2017). Boosts provide competences in areas such as making healthy food choices, enhancing the ability to understand statistical health information, and improving the ability to make financial decisions based on understandable accounting rules (Hertwig & Grüne-Yanoff, 2017). Advocates of boosting believe that people can make favourable, even ideal decisions, being educated as a prerequisite, to choose the fitting heuristic for a certain situation as long as they carry the competences to deal with relevant risks, statistics and probabilities (Reijula, Kuorikoski, Ehrig, Katsikopoulos & Sunder, 2018). In the context of understanding ecolabels, this would mean that the consumer has the competences to reflect upon what the ecolabel means, for example, what percentage of the product is certified and what the consequences are for the environment or the people who made the product.

Hertwig & Grüne-Yanoff (2017) distinguish short-term boosts from long-term boosts. They focus on creating competences, but the performances using short-term boosts are context-specific, while the long-term boosts ideally change the behavioural and cognitive repertoire permanently, by enhancing an existing competence or adding a new one. This creates a capital stock that can be drawn from

voluntarily, across different situations. In the case of being guided in finding sustainable products, the competence could be that the consumer knows what the ecolabels mean, and are able to recall this knowledge in future choice-settings, within the time-scarce context of shopping.

There are multiple reasons why boosting could be used in supporting consumers in making an informed choice when buying eco products. Hertwig (2017) states that whenever policy-makers are uncertain about what people's goals are, if people across the population have different goals or if the individual has conflicting goals, boosting is the intervention that is less error-prone compared to imposing a default rule. The policymaker might not know the consumers' goals exactly and the consumer itself might not know it either. Providing information can help in this process, in contrast with creating a default rule that does not match a consumers' goals, leading to errors. This is the case for buying sustainable products in a supermarket: not all people want to buy sustainable products or think environmental conservation is important, thus people across the population have different goals. As a supermarket, you want to facilitate all needs and provide different choices (Grunert, 2011). However, a large group of people have a positive attitude toward choosing sustainable food (Grunert, 2011). Over the last years, the amount of people that are worried about the damage people cause to the environment has increased globally (Lampert, 2019), which is the target group of this boosting intervention. This environmental concern is, on the other hand, not very strong and does not always translate to sustainable consumer behaviour (Grunert, 2011). The individual might also have conflicting goals. Studies show that although people are concerned with the environment, many consumers are, for example, unwilling to pay a higher price for sustainable products. This results in an attitude-behaviour gap in sustainable consumption, which could also be seen as a social dilemma between the collective social gain (buying the more expensive sustainable product) and self-interest (not buying it, even though one has a positive attitude towards environmental conservation) (Gupta & Ogden, 2009).

Also, boosting can provide better protection for individuals when the private sector creates 'toxic' choice architectures (Hertwig, 2017), for example greenwashing. The supermarket could have a facilitating role in this, choosing to be transparent and instead of creating toxic choice architectures, creating helpful interventions that can support an individual shopper to make a decision that is well informed and matches what they think is important. An example of this would be when Albert Heijn implemented the Friswijzer, acknowledging the amount and type of sugar and sweeteners in soda (AH Nieuws, 2017). Thus, freedom of choice stays intact, but evolves to informed choice, and hopefully informed healthy choice. In this current study, freedom of choice can possibly evolve into informed sustainable choice. Boosting will aid a consumer in understanding the benefits and the costs of the associated options (Hamilton, 2018). These costs could be monetary as well as the 'true cost', regarding the environmental impact.

2.1.2 Boosting versus nudging

Boosting is compared a lot with nudging (Grüne-Yanoff & Hertwig, 2016; Hertwig & Ryall, 2016; Hertwig & Grüne-Yanoff, 2017; & Sims & Müller, 2008). Nudges are approaches that steer people in certain directions, while still allowing them to go their own way, thus preserving liberty. However, because nudges steer people, they are sometimes described as 'soft paternalism'. Some important examples of nudges are default rules, simplification and the use of social norms (Sunstein, 2014). A fundamental difference between nudging and boosting is that the target audience of a boost policy is

aware of the intervention, it is visible to the consumer, whereas nudges are not always as transparent (Grüne-Yanoff & Hertwig, 2016). This is why boosting would contribute to creating transparency in the supermarket; people can recognize the intervention and choose for themselves whether they are going to engage with the boost. When they do choose to engage with the boost, their agency possibly even increases since new capacities are obtained to make their most authentic choice in the supermarket. If they do not think the boost displays the right information, the consumer can speak up about it, herewith also calling upon one's agency, instead of being unconsciously influenced.

Nudge policies can sometimes be considered as hidden forms of persuasion, which does not contribute to transparency. Also, if the target audience is not driven to apply the new competences, boost policies are not likely to have an effect (Grüne-Yanoff & Hertwig, 2016). Thus, if consumers do not value sustainability attributes in food products, they are free to not use the information. This also emphasizes the freedom of choice customers still have. Grüne-Yanoff & Hertwig also propose that new arguments on the workings of nudge and boost policies, based on empirical studies, will contribute to the enriching of the comparative debate about the cons and pros of nudge and boost policies. This means that researching boosting in the supermarket setting could also contribute to the more fundamental issues of ethics around behaviour change policies.

2.1.3 Creating the boosting strategy of this study

One route of influencing sustainable consumer behaviour is the formation of habits. Shopping is strongly habitual (Verplanken & Roy, 2016), so new habits should be made to really incorporate sustainable consumer behaviour in day to day shopping practices. Two ways to encourage habits or repetition is making sustainable actions easier, and providing feedback (White, Habib & Hardisty, 2019). Boosting could be an example of this, because giving feedback and simplifying sustainable actions are ways of increasing people's competences to make their own well informed choices. In the boosting strategy of this study, an information campaign in the form of an in-store banner will be used, to help the consumer understand ecolabels. Next to information on what the ecolabels mean, a consequence or feedback will be put on the banner, that tells the consumer what the consequences of buying a product with a certain ecolabel will be.

In 2019, from a sample of 32 countries, across all continents except for Antarctica, representing 63% of the global population and 83% of the global economy, 77% is worried about the damage that mankind is causing to the environment, compared to 23% that chose 'strongly disagree', 'disagree' or neither agree nor disagree' from the 5-point Likert scale when confronted with this statement. Due to the online methodology of this study, it is likely that lower educated people who are less likely to have access to the internet are not fairly represented in this study. This means that for especially the 3 countries where internet penetration is lower than 55% (South Africa, China & India), the actual Environmental concern is probably lower. However, Europe scores 4,04 for environmental concern on a 5-point Likert scale (Lampert, 2019). Interestingly, the actual share of sustainable food within total food spending in the Netherlands was 11% in 2018 (Central Bureau for Statistics, 2019). The target of this boosting intervention is the group that is worried about the environment, but has not yet adopted to buying sustainable products (Figure 1.).
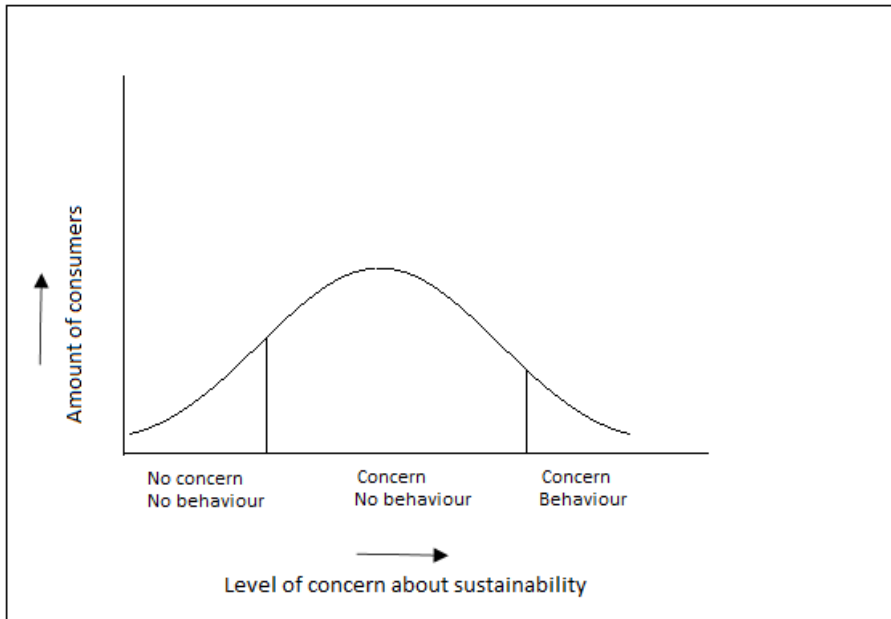
Figure 1. Amount of consumers compared to level of concern sustainability

2.2. Choice and General attitude towards ecolabel

'Choice' is the actual behaviour that is targeted, trying to close the intention-behaviour gap of sustainable consumption. In studies researching ecolabels or nutrition (information on) labels, the dependent variable has varied; 'Use of sustainability labels in food choice' (Grunert et al., 2014), 'decision to buy eco-labelled products' (Thøgersen, 2002), 'food choice' (Miller & Cassady, 2015) and 'use' (Grunert & Wills, 2007). With boosting, the aim is to support consumers' competences to make their own choices during which they exert agency (Hertwig & Grüne-Yanoff, 2017). In this context, a choice is therefore an informed one, based on one's gained competencies. An informed choice is supposed to be consistent with one's values (Marteau, Dormandy & Michie, 2001), which implies a trade-off of some sort occurs. It can be assumed that a well-informed consumer is more likely to choose a sustainable product if their general attitude towards the ecolabel is positive, thus, using this attitude in their decision-making. This leads to the following hypothesis:

H1. A positive general attitude towards ecolabelling increases the probability of an informed sustainable choice to occur.

2.3. Understanding

Understanding can be defined as understanding what an ecolabel means (Grunert, 2011; Grunert et al., 2014) or decoding of the ecolabels, and making the right inferences (Grunert & Wills, 2017) as well as memorizing the information (Miller & Cassady, 2015) and being able to apply it again in a future situation. It has been studied that for the Marine Stewardship Council label (MSC), if consumers are more familiar with ecolabels on the market, and they are more confident in their knowledge about sustainable fishery, it is more likely that they are one of the first to see and understand a new label

(Thøgersen et al., 2010). This is possibly also applicable to other ecolabels. Boosting provides familiarity and knowledge on these ecolabels, which increases attention and increases the level of understanding.

Using ecolabels usually depends, amongst other things, on whether consumers understand what they mean. If consumers do not know what the ecolabels mean or the meaning is unclear, consumers, even when they are motivated, still cannot use them, or not in a meaningful way (Grunert et al., 2014). Understanding ecolabels is not necessarily a prerequisite; even when consumers do not understand ecolabels completely, they will still buy products with ecolabels as long as ethical attributes are the main criteria for deciding what to purchase (Valor et al., 2013). But if these are not the main criteria, then consumers might need to be reminded or convinced. A better understanding of the ecolabels can also affect less motivated consumers in a way that they are more likely to use ecolabels if they understand what these entail (Grunert et al., 2014).

The goal of a boost is that competencies are formed that can be used in another setting, where no boosting intervention is present (Hertwig & Grüne-Yanoff, 2017). To reach this goal, the new information from the boosts must be first processed through system 2 where comprehensive consideration of the information takes place. After this, heuristics should be formed, which can enter the system 1 route, creating new habits during shopping activities. According to the Heuristic Systematic Model (HSM), the sufficiency principle determines how likely an individual is to engage in systematic processing (system 2). This principle describes that the motivation to activate the systematic processing increases up until a consumer's desired level of confidence is lower than the actual level of confidence. Thus, heuristic processing is more likely to occur when there is a small difference between the actual and the desired level of confidence (Gawronski & Creighton, 2013). If uncertainty about the meaning of an ecolabel holds a consumer back in having a positive attitude towards it, and eventually using it in making a decision, an informational context or a low-construal message is likely to help a consumer reach their desired level of confidence. According to the sufficiency principle, this results in using heuristics about the ecolabels. Furthermore, according to Thøgersen et al. (2010), the evaluation or appreciation of the ecolabel is determined by understanding and the made inferences This leads to the following hypothesis:

H2. A better understanding of the ecolabel leads to a more positive general attitude towards the ecolabel.

2.4. Trust in ecolabel

In the context of sustainable products, trust can be defined as the willingness to depend on these products based on the expectations or beliefs one has about their actual environmental performance (Chen, 2013). An alarmingly low level of trust and knowledge on sustainably produced food among Western consumers is reported. This is a problem, because awareness of food production and its accompanying issues on sustainability is believed to be a leading driver of the practice of consuming sustainable food (Solér, 2012). Lack of consumer trust and a lack of confidence in 'green claims' and characteristics of sustainable products is a serious barrier towards sustainable consumption (Joshi & Rahman, 2015). This together could explain why the progress of increasing consumption of sustainable foods is still slow. Ecolabelling could help consumers in their search for sustainable products by making it easier to recognize the products. However, reviews suggest that when information is given in the marketplace, supporting consumers in choosing sustainable products, not many people use it. A lot of

consumers are not familiar with, and do not trust ecolabels (Solér, 2012). This shortage of consumer trust causes a consumer to be less likely to engage with pro-environmental consumer behaviour (Atkinson & Rosenthal, 2014; Carrete, Castaño, Felix, Centeno & González, 2012). If consumers think a green claim is not trustworthy, they are less likely to have a positive attitude towards the product and they are less likely to purchase it (Atkinson & Rosenthal, 2014). As hypothesized before (H2), a better understanding of the ecolabel possibly results in a more positive general attitude towards the ecolabel. Still, it appears that trusting whether the ecolabel delivers what it promises seems to be a prerequisite for this positive attitude to arise. This leads to the following hypothesis:

H3. Trust in the ecolabel moderates the relationship between understanding of the ecolabel and the general attitude towards the ecolabel; the relation between understanding and general attitude is stronger when trust in the ecolabel is higher and less strong when trust in the ecolabel is lower.

2.5 Attention for ecolabels

Paragraph 2.3 has established that a well-informed general attitude towards the ecolabel and eventually choosing a sustainable product builds on the understanding of the ecolabels. But, before one can understand and memorize information, attention has to be paid to this information. Thus, ecolabels are only useful in increasing sustainable consumption if the consumer pays attention to them during a shopping trip (Thøgersen, 2000). Miller & Cassady (2015) studied this in the context of nutrition information and concluded that attention to nutrition information on food labels leads to the comprehension of, and memory of information. According to Grunert & Wills (2007), attention is the first step in information processing, eventually leading to an informed (healthy), and maybe also, sustainable choice. This hypothesized below:

H4. Attention towards ecolabels increases the understanding and memorizing of these labels and what they mean.

The real crux of the matter, however, is that attention is a scarce good in a retail environment; the brain of a consumer has only a limited capacity for visual attention (Clement, Kristensen & Grønhaug, 2013). It is easy to overlook relevant ecolabels in a situation where a choice is made (Thøgersen, 2000). Consumers are likely to not notice the ecolabels since they are time pressured during shopping and their choices are mostly based on habitual patterns (Grunert, 2011). However, this barrier could be lifted with boosting as an intervention. Paying attention to the ecolabel depends on issue relevant knowledge and consumer motivation (Thøgersen et al., 2008). A large number of consumers (62.6% of the respondents in the study of Grunert (2011)) are observed to have taken a look at the front of the product before choosing it. This would mean that consumers do have the opportunity to see and process the ecolabel if sustainability is a strong motive (Grunert, 2011) or if something else makes the attribute of sustainability more salient. These two ways that could induce information processing can be referred to as trait-motivation or state motivation for sustainability (Frewer & Van Trijp, 2006). The next paragraph will explain these paths that can induce attention for ecolabels.

2.6 Trait versus state in sustainable consumer behaviour

Personal influences on food choices can be divided in either traits or states. Traits are the stable aspects inherent to the individual, personality traits (Frewer & Van Trijp, 2006), which are thought of

as stable over time for one consumer (Stammerjohan & Webster, 2002). States are local, more momentary, and influenced by one's environment (Frewer & Van Trijp, 2006). In the context of sustainable consumer behaviour, traits are defined as the extent to which the traits consumers exhibit, moulded by learning, actions and righteous behaviour which are repeated through one's life, and by one's innate temperaments (Song & Kim, 2016) are in line with sustainability. States are defined as the influence the situation or environment in which the experiment takes place has on the consumer, for example, a supermarket-setting with a certain assortment with or without intervention/boost. It can be stated that whether one pays attention to information on sustainability depends partly on someone's environmental concern (trait), and partly on the environment (state). The environment can assist in finding the sustainable product, but can also activate the possibly dormant environmental concern while serving as a reminder (trait with state properties).

The difference between someone's direct environment and their environmental concern, and herewith the trait versus state discussion, can also be approached by comparing top-down processing or information search to bottom-up processing or information search. Top-down processing involves retrieving contextual information from one's memories. If environmental concern evokes the goal of consuming sustainably, you are more likely to know to look for ecolabels already. Bottom-up processing is more data- or stimulus-driven (Carlson et al., 2010, p. 202). This data or stimulus (the boosts) influences one's perception (making sustainability attributes more salient), and this perception influences one's cognitions, which is likely to increase attention to ecolabels.

The following paragraphs will further elaborate upon environmental concern (trait or top-down information search) and the boosts (the state or bottom-up information search).

2.6.1 Environmental concern
Ecolabels provide an opportunity for consumers to take ethical and environmental factors into account when choosing products in the supermarket. However, merely giving the opportunity does not automatically result in usage of these ecolabels. Usage depends on the motivation to use these labels and its provided information. This motivation is fuelled by motivational factors pro-environmental attitudes/a pro-environmental worldview, environmental values or environmental concern, which are used interchangeably in literature (Anderson, 2012; Grunert et al., 2014; Thøgersen, 2002). This environmental concern is a trait that predicts sustainable buying behaviour (White et al., 2019).

Someone's inner motivations form the basis for adopting sustainable behaviour (Lanzini, 2017), in this case eventually choosing a product with an ecolabel. Motivation can be described as the willingness to take ethical attributes into account when a purchase decision is made (Valor et al., 2013), and environmental concern could lead to this willingness. Ethical attributes can be defined as the environmental or social impact of a product (Valor et al., 2013).

One's values affect the search for sustainability information, because personal values are thought to directly impact motivation (Parks & Guay, 2009). For example, people who value conformity, tradition and security as principles that guide them, are less likely to search for information on sustainability when they choose products. Thus, markets in countries or age-categories that are less conservative are more likely to contain consumers that are open to information on product sustainability (Pekkanen, Pätäri, Albadera & Jantunen, 2017). Self-directed people who have the tendency to be more worried

about someone else's interest rather than their own, search for sustainability-related information, but only when their perception of their own sustainable behaviour is high. If their perception of their own sustainable behaviour is lower, the impact is negative and they are not likely to search for sustainability-related information. It appears so that compassion for sustainability issues causes self-directed, altruistic people to look for this information and they may act accordingly (Pekkanen et al., 2017).

Research has been conducted on whether certain traits predict socially responsible/sustainable consumption. Nguyen, Dadzie, Chadhuri & Tanner (2019) studied the relationship between individual trait self-control and the purchasing of products that are environmentally friendly. Trait self-control can be compared to state self-control. Trait self-control occurs in the absence of conscious deliberation and is not as much affected by the decreasing ability to respond to one's environment in a conscious way. It does not depend on cognitive resources but rather supports habits and strength. In the course of time, adequately motivated consumers can establish advantageous automatic responses to eating, purchasing and spending (Nguyen et al., 2019). Song & Kim (2016) found that virtuous traits of self-control, self-efficacy, courage, and also the personality traits conscientiousness and openness, predict socially responsible consumer behaviour.

The relative strength of underlying motivations differs. There are three categories of motivations that drive sustainable behaviour, these are relational, instrumental and moral motivations (Lanzini, 2017). Relational motivations consider the need to comply with social norms that construct relationships with others in a social network. These type of motivations are especially salient in the context of sustainable behaviour, because this is often performed in the presence of this social network. Instrumental motivations are focussed on the function the effect of a certain behaviour has for oneself. Examples are buying organic produce because one wants to receive health benefits, or going to the local organic farm because it is a fun experience. Moral motivations originate from an altruistic involvement with the other, which can be another person as well as the natural environment (Lanzini, 2017). This study focuses on the natural environment as the object of sustainability. Environmental concern can be seen as such a moral motivation, because people could choose to purchase sustainable products because they are concerned with maintaining the natural environment for future generations. Environmental concern can also be seen as an instrumental motivation, because one is worried about maintaining the natural environment for one's own generation and herewith oneself.

Valor et al. (2013) have found that motivation influences label use via knowledge. Consumers that are willing to take sustainability attributes into account when making a choice will become more knowledgeable about ecolabels, presumably after searching for information on these labels. Their strong motivation leads to searching for more information if it is needed, especially if it is not too difficult to obtain (Thøgersen et al., 2010). This search for information about sustainability of products, set in motion by environmental concern, can be referred to as a top-down information search. This leads to the following hypothesis:

H5. Environmental concern increases attention for ecolabels on tea boxes.

Sustainability attributes of a product are often not salient when a consumer is at the point where a decision has to be made. This is partly due to confusion about what an actual sustainable choice is.

Therefore, a higher understanding of the ecolabel, and thus a higher understanding of the sustainability attributes of a product, will lead to a more positive general attitude towards the ecolabel. However, if environmental concern is low, a better understanding of the ecolabel does not directly result in a more positive general attitude towards the ecolabel. It might lead to a slightly more positive attitude because the consumer becomes more aware of the ways in which an eco-labelled product is more sustainable than the alternatives, but it does not necessarily change a consumers' environmental concern or how an individual values the environment. This results in the following hypothesis, which is also depicted in Figure 2. below:

H6. Environmental concern moderates the relationship between understanding of the ecolabel and the general attitude towards the ecolabel; the relation between understanding and general attitude is stronger when environmental concern is higher and less strong when environmental concern is lower.
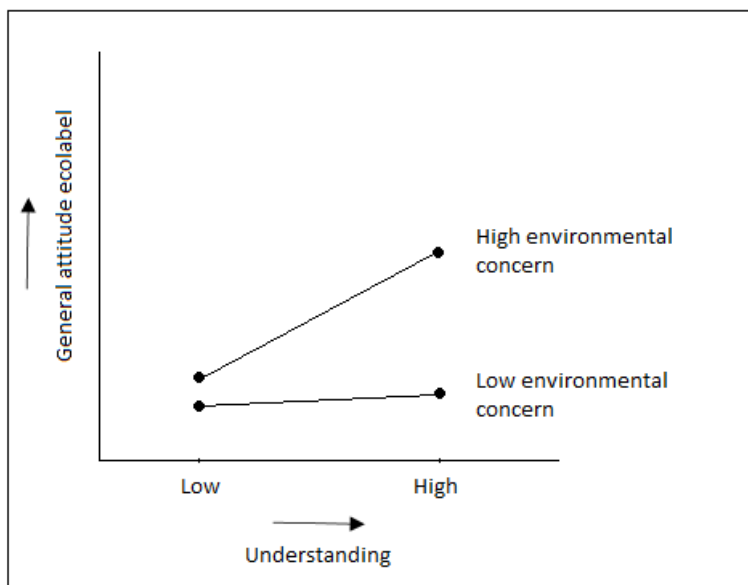
Figure 2. Visual representation of Hypothesis 6.

2.6.2. Informational context for ecolabels

The direct relationship between environmental concern and sustainable behaviour is, however, said to be weak (Bamberg, 2003), hence the attitude-behaviour gap. The situation and the environment one is located in, are more powerful determinants that influence sustainable (food) choice. Examples are the amount of effort needed to obtain the food and the atmosphere and mood on the spot (Bamberg, 2003; Frewer & Van Trijp, 2006), but also campaigns that promote (new) labels and educate consumers about it (McDonagh, 2002). According to Atkinson & Rosenthal (2014), consumers prefer more detailed labels that contain information about the made eco claims, instead of simple icons that imply eco-friendliness. On the other hand, the findings of Lazzarini et al. (2018) suggest that new, costly labels possibly do not improve environmental judgements by consumers. This calls for another approach in assisting the consumer. Interventions that offer an informational context about the impact that activities have on the environment are increasingly considered an effective tool to promote conservation behaviour (Delmas, Fischlein & Asensio, 2013). If this information would be available on a banner in the store, this could solve the issue of consumers preferring more detailed ecolabels but, on the other hand, the issue that new labels would not improve environmental judgements. Labels can

stay the same if additional information is provided. Ecolabels already reduce consumers' information search costs, which, according to Grunert & Wills (2007) increases the chances that the provided information is actually being used. Providing an informational context with a simple explanation of what the ecolabel represents is likely to reduce this time even further. When a consumer does not understand an ecolabel, other options to gain this knowledge would be to look it up on the internet, which takes more time, which means that less motivated consumers might not want to engage in this behaviour due to the amount of effort. This boosting intervention makes it easier to make the "right" choice.

Research has been conducted on whether in-aisle explanations on front-of-package nutrition labels would increase the viewing of these labels by consumers, and eventually the choosing of the more healthful food options (Graham, Heidrick & Hodgin, 2015; Graham, Lucas-Thompson, Mueller, Jaeb & Harnack, 2017). This is similar to the proposed 'informational context' that aims to draw more attention to ecolabels. Graham et al. (2017) studied conditions under which parent/child pairs would select the more healthful food options. When Front of Package (FOP) labels were accompanied by an explanatory in-aisle signage, 95% of the consumers viewed the labels, compared to only 27% when no in-aisle signage was present. Graham et al. (2017) suggest that therefore measures like this increase the attention to nutrition information, and should, therefore, be considered an important component of programmes on nutrition labelling, to increase the attention of the consumer to the desired information. Graham et al. (2015) quantified front-of-package nutrition label and Nutrition Facts viewing in a sample with American adult consumers. In this study, higher front-of-package nutrition label viewership rates only occurred when an in-aisle signage was present in the condition, which drew attention to the front-of-package nutrition labels and their meaning. These studies suggests that an informational context might also increase attention to ecolabels instead of nutrition labels. It is important that the given information does not raise even more unanswered questions and debates (Owen et al., 2007).

Approaches to bring sustainable food to the table, such as broad-based education, business-to-business communications, issue campaigns and market efforts, usually try to generate "issue saliency" for sustainable food (Boots, 2008). Their aim is to raise awareness on eco-labelled products. Third-party certification, using ecolabels, builds on this salience (Boots, 2008). The provided informational context plays a similar role as the mentioned approaches. Its efforts to raise awareness and increase saliency of sustainability issues is something the ecolabels can build upon, as they provide the confidence of the actual sustainability of the product. This informational context supposedly increases attention towards these ecolabels placed on the products, in this case, the tea boxes.

Hence, an informational context that gives more information about what the ecolabels stand for could possibly make a positive contribution to how ecolabels are processed by consumers. The studies cited in this paragraph lead to the following hypothesis:

H7. Providing an informational context about the ecolabels that can be found in the assortment increases attention for ecolabels on tea boxes.

2.6.3. Low-construal message

Tukker et al. (2006) stated "simply providing information to consumers does not lead to marked changes in behavior"(pp. 12) in the Oslo Declaration on Sustainable Consumption. This suggests that maybe more is needed in order to influence one's state in a way that increases attention to ecolabels. The following paragraph will explain how a low-construal message might fulfil this need.

Prompts

The positive attitudes that consumers have towards sustainability are often dormant at the moment of choice (Grunert, 2011), but the environment in which the choice is made can serve as a reminder for these attitudes. A way of doing this is by using prompts (White et al., 2019). Prompts are messages that a consumer receives before the actual behaviour of, for example choosing a tea, occurs. This message reminds the consumer of what the desired sustainable behaviour would be (Lehman & Geller, 2004). Prompts are most successful when the behaviour that is targeted is rather easy to carry out, straightforward, and when the message is placed next to the place where the behaviour should be performed (Geller, Winett & Everett, 1982).

Compatibility principle

The principle of compatibility (Ajzen, 1988; Ajzen & Fishbein, 1977) provides insights into the conditions under which attitudes are associated with behaviour most strongly. It shows that attitudes inadequately predict behaviour, when a mismatch exists between the specificity of the measured attitude and the specificity of the considered behaviour. Thus, to maximize the predictive power of attitudes, attitude and behaviour need to be measured at the same level of specificity. Empirical research has indicated this as well. For example, general attitudes about organ donation were measured, as well as specific attitudes towards registering to be a donor. Specific attitudes towards registering to be an organ donor better predicted registration intentions as well as behaviours. The specific attitudes were able to explain at least 70% more variance in registering for organ donation compared to general attitudes (Siegel, Navarro, Tan & Hyde, 2014). Also, attitudes that are specific to using birth control pills predicted actual use of these pills more successfully than general attitudes about birth control (Davidson & Jaccard, 1979). In the context of boosting, the principle of compatibility means general attitudes towards sustainability cannot predict product choice, but feature preferences or specific effects of choosing sustainably possibly can. This is why the intervention should not communicate sustainability as a general value, but it should remind people that an attribute of the eco-labelled product is that it contributes to a better ecosystem, for example.

Construal Level Theory

Another theory that emphasizes the importance of having mindset and behaviour on the same level of specificity is Construal level theory (CLT). CLT stems from social psychology. It describes the association between to which extent the way in which people think about an event or object is concrete or abstract, and the psychological distance between the individual and this event or object. CLT assumes that if the object is more distant from the individual, it will be thought of in more abstract terms, and if the object is closer, it will be thought of in more concrete terms (Trope & Liberman, 2010). This influences one's reasoning as well as choice of action (Trope & Liberman, 2003). This psychological distance can be divided into the following main distance dimensions: hypothetical, temporal, social and spatial distance (Trope & Liberman, 2010).

When talking about sustainable food, either environmental or social issues come to mind which are respectively thought of in a temporally or spatially distant way (White et al., 2019). The actual choice of sustainable products at purchasing is predominantly represented in terms of feasibility, and the construals can be described as concrete. Thus, arguments against choosing sustainable products have a high salience because they are thought of in a lower-level construal manner: for example someone that does not buy the sustainable product because it is too expensive or because of the flashy colours of an alternative product. These product attributes are very concrete, whereas sustainable attributes are more abstract, which leads to a low probability of actually making sustainable choices in the present (Trope & Liberman, 2010). This means that even if sustainability may be relevant for someone, it does not mean it is determinant in a specific situation and context. From this, it appears that attribute importance can mean different things, depending on mental construal and psychological distance (Van Dam, 2016). Like most other sustainable behaviour, choosing sustainable food products has uncertain future consequences and benefits. These benefits are abstract and psychologically distant, and these cognitive barriers to understanding the benefits are partly responsible for consumers' present bias. The present bias is that outcomes which are closer to the present are preferred in the trade-off between different outcomes (Trudel, 2019).

Because choosing sustainable products concerns future benefits, consumers will construe these choices in abstract terms. When trying to increase sustainable behaviour, it therefore makes sense to either make people adopt a focus that is more future-oriented when framing psychological distance (Wiebe, Basil & Runté, 2017) or to make the future more salient in the present (Trudel, 2019).

People that are more future-focused or people with an abstract construal versus a concrete one, generally have a higher preference for eco-friendly products (Reczek, Trudel & White, 2018). This is the group that probably already has a high level of environmental concern, that is already translated to actions. A boost that makes future benefits more concrete and salient thus targets consumers that have a more present-focussed mindset, hence, a group that probably has a lower activated level of environmental concern, that does not lead to actual sustainable consumer behaviour. Therefore, this is a way to target consumers that would be less likely to buy eco-friendly products because they are not very future-focused, but might still care about sustainability. The intangibility of sustainability would be tackled. The immediate impact of environmental issues can be communicated, together with outlining the steps one can take to contribute to solving this (White et al., 2019), for example choosing products with an ecolabel. This could activate a higher state-motivation for sustainability. According to Atkinson & Rosenthal (2014), a claim that is more tangible and concrete generates a more positive consumer assessment of the brand and the product. The consequences of one's actions (or inactions) can be made clear by vivid images, narratives or analogies (Marx et al., 2007).

In conclusion, a low-construal message could possibly make a positive contribution to how ecolabels are processed by consumers as well. A bottom-up search for information on ecolabels can be induced, leading to consumers paying attention to the ecolabels on the tea boxes. This leads to the following hypothesis, in addition to Hypothesis 7:

H8. Providing a low-construal message about the ecolabels that can be found in the assortment increases attention for ecolabels on tea boxes.

2.7. Interaction of informational context and Low-construal message

The two proposed boosting interventions that are hypothesized to increase attention towards ecolabels and herewith make a positive contribution to how ecolabels are processed by consumers and eventually increase sustainable choice, are an informational context and a low-construal message. Based on the literature above, the following rough forecast of effect strength of the two different types of boosts and the interaction between the two is made. In the Figure, A is the base level (the control group), B shows the effect of an added informational context to the assortment, C shows the effect of adding a low-construal message to the assortment, and D shows the effect of adding both a low-construal message and an informational context to the assortment.

If consumers are exposed to an added informational context and/or a low-construal message next to the assortment, attention is expected to be different, as shown in Figure 3. The effects that result from the study possibly do not have the same size as is portrayed below but it is expected that they are at least similar.
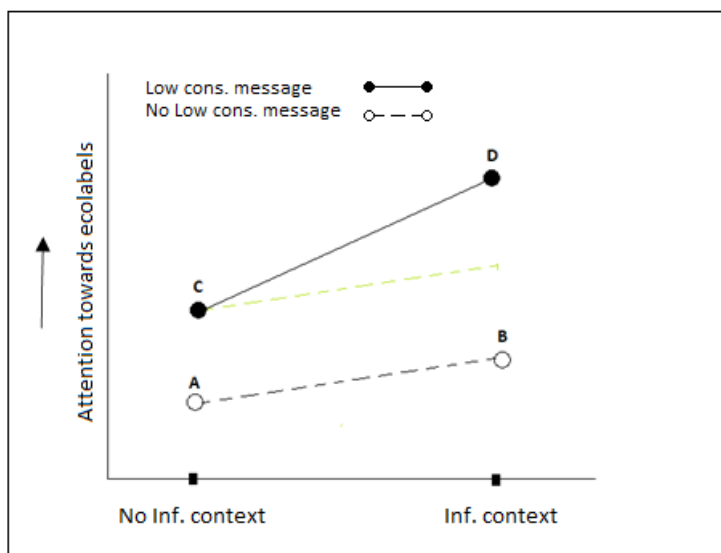
Figure 3. Expected difference in attention for factors informational context and low-construal message

It is expected that an informational context will increase attention for the ecolabels on the tea boxes because it would remind consumers of their environmental concern and makes interpreting the ecolabels less confusing. It is expected that a low-construal message would increase attention a little bit more, because next to reminding the consumer of one's environmental concern, it also speaks directly to the consumer by bringing future benefits to the present, herewith being more convincing to take ecolabels into account when shopping and really giving a perspective of what happens when one does take ecolabels into account. A combination of the two is expected to lead to significantly more attention than the sum of the parts. The reason for this is that the combination provides the complete information to reduce confusion, a reminder of one's environmental concern, and a message that brings the future benefits of ecolabels to the present. This leads to the following and final hypothesis:

H9. The low-construal message and the informational context together, lead to more attention than the sum of the parts.

2.8 Conceptual framework

The aforementioned concepts and their relations lead to the following conceptual framework, that can be seen in Figure 4. Independently, environmental concern determines whether consumers search for eco-information in a top-down way, whereas the interventions would induce bottom-up information search, going through. The independent variables determine how the choice process will be influenced, as well as the moderating variables trust in the ecolabel, and environmental concern, eventually leading to a (sustainable) choice.
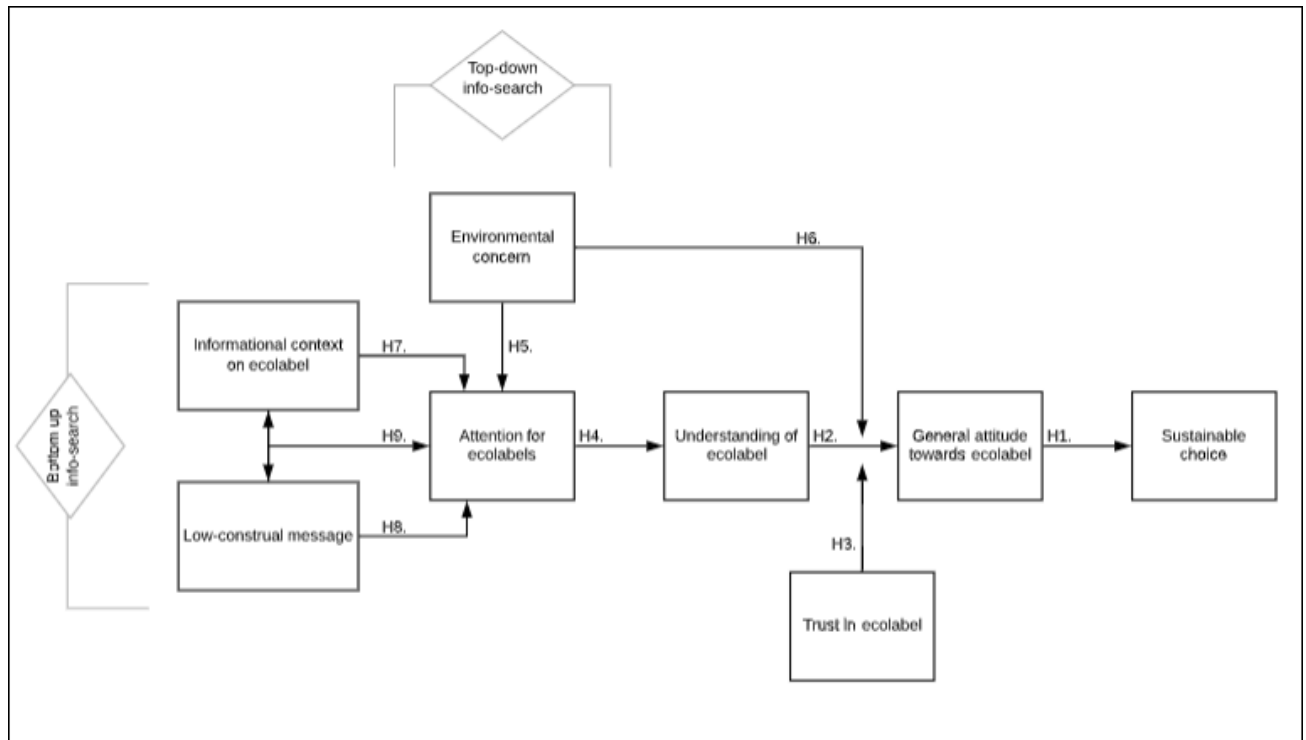
Figure 4. Conceptual framework

3. Methodology

This chapter forms the outline for the methods of the study, including information about the participants, the proposed design, stimuli, procedure, measures and plan of analysis.

3.1 Participants

A total of 150 participants have completed the experiment as well as the questionnaire, from which 114 have also completed the follow-up questionnaire. To recruit participants, convenience sampling was conducted at the Wageningen University. Flyers and posters were distributed throughout campus. The flyer with the request to enter the study also contained the time and room number of where the experiment took place, an appealing text and picture about the VR study, and the promise of a snack of choice. The small reward of getting a snack and the opportunity to experience VR, maybe even for the first time, functioned as stimulants to participate in the study. Additionally, more participants were recruited using the researchers own network. A similar message as the one on the flyer was distributed on Facebook, via WhatsApp and on Instagram. Lastly, a mailing list of Bachelor students interested in participating in studies was used to further recruit participants. Only Dutch-speaking people were allowed to participate, as the interventions as well as the questionnaire were in Dutch. This choice was made because most potential participants were likely to be Dutch, and this group was more likely to understand the questions and statements if they were written in the language they understand best. The minimum-age to participate was set at 18, to avoid ethical implications surrounding consent of linking the data to one's email address.

3.2 Design

In order to test the hypotheses and therewith answer the main research question, an experiment was conducted. Experiments are a strong tool for testing predictions, and they are especially useful when these predictions are derived from clear theories (Webster & Sell, 2014). The design of this experimental study was a between-subjects design with two factors, that were either present or absent, resulting in a 2x2 model with two interventions as stated in Table 1. below. From this, four conditions or treatments, including a control condition, arose. This design however, does come with risks compared to a within subject design. Individual differences could lead to groups being different compared to each other (Erlebacher, 1977) and within-subject designs grant a boost regarding statistical power (Charness, Gneezy & Kuhn, 2012). Nonetheless, the choice for a between-subjects design was made, because random assignment could cancel out individual differences, and a between-subjects design minimizes the transfer and learning across conditions (Budiu, 2018). The aim of the interventions was that the participant learns from it, and in order to know which condition caused the learned competences exactly, each participant can only be assigned to one condition. In a situation in which the participant only has to make one decision, a between-subjects design is likely to have more external validity (Charness et al., 2012). The issue of statistical power can be partially solved by increasing the sample size of the study or by increasing the alpha level (Maxwell, Cole, Arvey & Salas, 1991). Because the latter is not desirable, a relatively large sample has been used.

Table 1.

Between-subjects study design using a 2x2 factorial design with two interventions

	No informational context	Informational context
No low-construal message	A (control group)	B
Low-construal message	C	D (interaction term)

3.3 Stimuli

Virtual reality shelves were designed, using 360 degree photos made by the researcher. These represent a realistic supermarket environment. Using VR glasses, consumers were able look at the shelf and everything surrounding it. Three treatment conditions and one control condition were created. The factors were 'informational context' and 'low-construal message', and they were either present or not.

The informational context is depicted in Figure 5 below. The independent Dutch information organization Milieu Centraal was used as a source to choose the ecolabel that was used on the banners. Milieu Centraal rates various sustainability labels on their level of ambition regarding 'environment', 'people & work', 'animal welfare', 'controllability' and 'transparency' on a scale of 0 to 5, or low to very high. For this study, the Rainforest Alliance label (RFA) was chosen. The RFA has been working on advancing sustainable livelihoods biodiversity conservation for 32 years. Over 2 million farmers are using their methods, and 7 million hectares of farmland has been certified (Rainforest Alliance, 2018). The RFA label has recently merged with the UTZ label, and their new standard will be launched mid-2021 (Rainforest Alliance, 2019).

The choice for this label was made because it scores 'very high' on 'environment', and it scores 'high' on 'people & work', and 'very high' on 'controllability' and 'transparency (Milieu Centraal, 2019). This means that the ecolabel demands that no high-quality ecosystems or natural resources are destroyed for cultivation, and that nature reserves, flora and fauna are protected. Farmers organizations work with management systems to encourage sustainable water- and waste management and frugal use of chemicals, as well as the maintenance of working conditions and terms. The RFA label is third-party certified, and this independent party monitors the certified institution each year. Also, the label scores 'very high' on 'transparency', because the information on the requirements is easy to find on the website of the ecolabel, the website is understandable and the most important requirements are highlighted, the requirements are concrete and measurable, and lastly, the ecolabel's results are published yearly, for example in an annual report (Milieu Centraal, 2019). Especially the fact that the RFA label scores high on people & work was a deciding factor to choose it as the ecolabel, because this means that even though this study focusses on the environmental aspect of the label, there would not have been a reason not to choose a product with this label because it would not score high enough on other ethical aspects. The RFA label is the over-all highest scoring label in the category 'tea', and it is awarded the title 'Top Quality Sustainability label' by Milieu Centraal (2019), which is also why it was chosen to be included in this experiment. This title was also included in the banner, because it emphasizes the high scores the label gets. Hopefully, more ecolabels can be placed on the banners in

the future, but the choice was made to keep the experimental set up simple in order to measure only what the study aims to measure. Thus, only the RFA label was included.

The second factor, the low-construal message, that was placed on the banner is *"By choosing a product with this label today, you save a tree tomorrow"*, translated to Dutch as *"Door vandaag voor een product met dit keurmerk te kiezen, red je morgen een boom".* This sentence was accompanied by a picture of deforestation, as a part of the message. Also, the RFA label, the fact that it is a top quality sustainability label and the source were present on the banner, as depicted in Figure 6. The banner of the third treatment condition, contained all elements that are on the other two banners combined, as depicted in Figure 7.

Figure 5. Banner with informational context   *Figure 6*. Banner with low-construal message   *Figure 7*. Banner with informational context & low-construal message

Participants in each of the four conditions (3 with interventions and 1 control) were exposed to the same assortment of teas. The chosen variety of teas was based on statistics about the favourite tea varieties of the Dutch population, which are black tea, green tea, rooibos tea, fruit tea and herbal tea (Van de Pas, 2019). The choice of brands was based on availability in Hoogvliet stores. Hoogvliet private label, Lipton and Pickwick have the largest variety of flavours available, which is why these were the three brands chosen for this study. Brands that are known for their organic or fair products (Clipper, Zonnatura) were excluded to keep the assortment relatively neutral on that aspect. For each of the three brands, the following flavours are included: 2 black teas (Earl Grey & English Breakfast), 2 green teas (natural green & green tea lemon), 1 fruit tea (forest fruit), and 1 rooibos tea. This comes down to a total of 18 different tea boxes. Two types of black and green tea were selected because these teas where the most popular among Dutch tea drinkers, respectively 24 and 19 percent. Forest fruit was

chosen as a fruit tea, because all three selected brands have this flavour in their assortment. No herbal tea was included as this is not an available flavour in the Hoogvliet private label assortment. The teas of the same brand were placed next to each other in the assortment, similar to a real supermarket. The similar flavours were placed in the same column. All the types of tea that are used in the experiment come in boxes and are visually similar. For each flavour, one randomly selected brand received the Rainforest Alliance (RFA) label on the front of its package. For the Hoogvliet private label teas, the forest fruit and green tea lemon received the RFA label, for Pickwick, Earl Grey and Rooibos received the RFA label and for Lipton, the English Breakfast and the green tea received the RFA label. This ensured that personal preference for a certain flavour did not interfere with the choice for a sustainable option.

Choosing only a limited amount of brands and teas might limit the degree to which the assortment resembles a real assortment in a supermarket. However, using a real store assortment is likely to cause a lot of noise, because certain brands are clearly already sustainable ones because they are organic, or some boxes will stand out too much. The experiment should measure the effect of the boosts on choosing for products with the corresponding ecolabel, and this noise might distort this effect. Also, the environment can still be quite realistic with a limited assortment. This is why, in the trade-off between cancelling noise and having a very realistic store-environment, the choice was made to cancel the noise. Appendix E contains the pictures of the assortment with banners.

3.4 Measures

The constructs from the conceptual framework were measured, as well as control variables. The following paragraphs give an overview of these measurements. Most items used in the questionnaire were adapted from existing literature, but as the target group of this study speaks Dutch, all items were translated to Dutch (see Appendix B for the complete questionnaire).

3.4.1 Environmental concern

An important reoccurring part of motivation in the context of sustainable consumer behaviour is general concern about sustainability (Grunert et al., 2014) or pro-environmental attitude (Thøgersen, 2002). To measure environmental concern or values towards the environment, the New Ecological Paradigm (NEP) scale was used. This is a measure of pro-environmental orientation (Dunlap, Van Liere, Mertig & Jones, 2000). The original NEP (Dunlap et al., 2000) consists of 15 statements that are asked to be answered with either 'strongly agree', 'mildly agree', 'unsure', 'mildly disagree' or 'strongly disagree'. However, because of time limitations, a version with only 10 statements/items was used for this current study. These 10 items still represent the 5 primary NEP domains (Cordell, Green & Betz, 2002), described by Dunlap et al. (1992). These are ecological limits, balance of nature, anti-anthropocentrism, rejection of exceptionalism, and ecological catastrophe. The Dutch translation of the NEP statements was based on a previously created Dutch translation, developed by Ongena (2006). The Table with the items can be found in Appendix A. An average environmental concern score of 1 to 5 was computed.

3.4.2 Attention for ecolabels

The attention for ecolabels on the tea boxes was measured by using eye tracking, using the VR equipment. This methodology is increasingly often used in the field of consumer behaviour and

marketing, and especially in advertising (Bialkova & van Trijp, 2011). Since the boosting interventions are similar to advertisements and because attention is an important first step in information processing (Grunert & Wills, 2007), it was chosen as the methodology for measuring attention or fixation in this study. Using the VRmaster software, the amount of milliseconds the participants payed attention to the ecolabels was measured by covering the ecolabels that were placed on the tea boxes with a so called 'track area', and tracking attention time on the image. The following measure for attention towards the RFA label (attention$_{labels}$) is used throughout this study: for each participant, all the measured attention towards the RFA labels in milliseconds was added together, but only for the labels that were attended to for more than 80 milliseconds. This is the chosen fixation-threshold for attention$_{labels}$. Then, this number of milliseconds was divided by the time spent in the VR supermarket in seconds. The time that the participant has been spending in the VR store was measured by taking the stated time for 'START' (if more 'START's appeared for one participant, the last one is chosen) as this marks the beginning of their time in the virtual store, and taking the stated time for 'store-cA/B/C/D' (the names of the in-store scenes with the empty banner, the banner with the informational context, the banner with the low-construal message and the banner with both the informational context and the low-construal message respectively), which always appeared in the data right before the end scene. The time in between these time-points was calculated in milliseconds, and registered. To acquire more elaborate data on whether participants recall seeing the RFA label, the following question 'Did you see any labels on the tea boxes in the virtual supermarket? If yes, which?' was answered during the beginning of the questionnaire. The question was accompanied by the image of Figure 8 below, and participants were allowed to choose multiple labels as an answer.

Figure 8. Ecolabels shown to measure whether participants recall seeing the RFA label

Attention$_{labels}$ was the main aspect that is measured, but attention towards the banner was measured as well. The banners were also covered with a track area, from which attention was measured at a fixation threshold of 200 milliseconds.

3.4.3 Understanding
Decoding
To measure how well the participants were able to decode and understand the ecolabels, the following ecolabels were shown to the participants (depicted in Figure 9), and they had to decide to which of them the following statements apply according to Milieu Centraal:

- This label represents animal welfare
- This label is transparent
- This label represents the protection of the environment
- This label represents good working conditions for local populations
- This label is a top quality sustainability label

Figure 9. Ecolabels shown to measure understanding

For each correct answer the participants received one point. For the first question this meant not clicking on the RFA label and for the last four questions this meant clicking on the RFA label. This led to a range of scores between 0 and 5. The other labels were added to make answering the questions more difficult. The statements above might also apply to these, but because they are not the subject of this study the participants were not rewarded with any points for choosing these labels. The informational contexts contained the information to answer all five questions correctly, and the low-construal message contained the information to answer the third and the fifth question.

Memorizing

Memorizing is an important prerequisite for a boost; the implied effects should persist after the intervention is removed for the intervention to be successful (Hertwig & Grüne-Yanoff, 2017). To check whether participants still remembered the information on the banners after a while, approximately 2 weeks after the experiment an email was sent to the participants. The email contained a link to a questionnaire, in which the same 5 questions that measure understanding of the RFA labels were asked once more. If answers were similar, participants gained new knowledge which they can apply in future situations. 132 out of 150 participants gave their email address to be approached for the follow-up questionnaire. From this group, 104 filled in the follow-up questionnaire. Out of these 104 participants, 30 were from the control group, 28 from the group that was exposed to an informational context, 23 from the group that was exposed to the low-construal message, and 23 from the group exposed to both the informational context and the low-construal message. The results from this measure were used as a follow up test to examine whether there is a change in understanding after two weeks. For all other tests that include understanding as a variable, the first measure of understanding was used.

3.4.4 General attitude towards ecolabel

To our knowledge, a scale to measure the general attitude towards a specific ecolabel has not been developed yet. The general attitude towards the ecolabel (general attitude$_{label}$) was measured by replying to the following statements on a 5-point Likert scale from strongly agree to strongly disagree. An image of the RFA label was present in the questionnaire. An average general attitude score of 1 to 5 was computed, where a score of 2.5 reflects a neutral general attitude, any score of 2 or lower a predominantly negative general attitude and any score of 3 and up a predominantly positive general attitude.

- All other things being equal, I would prefer a tea with this ecolabel compared to a tea without this ecolabel
- All other things being equal, I would appreciate a tea with this ecolabel more than a tea without this ecolabel.

3.4.5 Choice

Using the VR glasses, participants were told to choose their preferred tea from the virtual shelf. This choice is recorded visually in the VR environment. The participants had to look at the 'choose-button' with the letter 'K' below the product, which asks whether the participant wants to choose the product or not, giving the option 'yes' and the option 'no'. By looking at 'yes', the choice was made. The participants could either choose a tea with, or one without the RFA label. The choice for a product with the RFA label was labelled as '1' and if a product without an ecolabel was chosen, the choice was labelled as '0'. The choose-buttons also functioned as a track area, meaning that when a participant looked at the 'K', this time was measured in milliseconds.

3.4.6 Trust in ecolabel

To measure the moderating variable 'trust in ecolabel', a four-item scale, initially developed by Hess (1995) and adapted by Bruner (2009) was used. Taufique, Polonsky, Vocino & Siwar (2019) also used this scale, however the third item was excluded at their Principle Component Analysis, as this component loading was below 0.5. For this current study, 'the labels' was replaced by 'this eco-label' for each item, as these items measured the trust in the RFA label specifically. The statements were answered on a 5-point Likert scale from 'strongly disagree' to 'strongly agree', and were accompanied by an image of the RFA label. An average trust score of 1 to 5 is computed.

- This ecolabel is genuinely committed to environmental protection.
- Most of what this eco-label says about the products it can be found on is true.
- I think that some of what this eco-label claims is exaggerated.
- If this ecolabel makes a claim about a product, that claim is probably true.

3.4.7 Control variables and background characteristics

To make sure characteristics are equally distributed between groups, control variables were measured. These included demographic variables, which were age, gender, highest level of education and occupation. Age was measured by asking 'What is your age?'. Gender was measured by asking the participants to indicate how they identify themselves. Highest level of education was measured by asking 'What is your highest achieved level of education?'. Occupation was measured by asking 'What

are you currently doing in your daily life?'. Also, the frequency of buying tea was measured by the question 'How frequently do you buy tea?' as a control variable. The questions 'Which of these tea brands do you drink most often?' and 'Which tea flavour do you drink most often?' were also added as control variables. The answer options included the brands and flavours available in the VR-assortment. Lastly, because the respondents from this study were partially retrieved from a mailing list with students interested in participating in research, two extra questions were added: one question about how the participant heard about this study, and the question whether they want to be added to a mailing list, so they can participate in future studies.

3.4.8 Check for likelihood of demand effects

A check for likelihood of demand effects was performed to understand whether the manipulation of the stimulus material , the low-construal message and the informational context on the banner, was too obvious, possibly having led to demand effects. This examined the internal validity of the experiment as well. The participants were asked to describe shortly what they think the study was about in the open text-box. To analyse the results, inductive codes were created. Key themes were retrieved from the data and how many times these occur per participant was counted.

3.4.9 Factor analysis

Factor analysis was conducted for the two items measuring general attitude towards the ecolabel, the four items measuring trust in the RFA label, where the third (negatively framed) item was reversed, and the ten items measuring environmental concern (using the 10-item NEP scale), where the first, third, fourth, fifth and eight items were reversed, so that 'Strongly agree' corresponds with a score of 5/5 score for environmental concern for each item.

A factor analysis with orthogonal (Varimax) rotation was conducted on all items for all three constructs, resulting in a total of 16 items. Reasonable factorability was suggested as the Kaiser-Meyer-Olkin measure of sampling adequacy was .63 This is above the value of .6, which is considered a mediocre value (Hutcheson & Sofroniou, 1999). Bartlett's Test of Sphericity showed $p < .05$. As three constructs were measured, the three components with the highest eigenvalues were included (setting the eigenvalue-threshold at 1.42), together explaining 40.09% of the variance. The items measuring trust loaded high on the same component (.646, .790, .601 and .690). As is mentioned before, Taufique et al. (2019) excluded the third component during their study's factor analysis. Although it is the lowest factor loading for the component in this current study, it was kept nonetheless because it still loaded relatively high. The items measuring general attitude towards the ecolabel (.789 and .751) loaded high on the same component as well. For NEP score this is not the case. Because of the low loading for NEP 1, a factor analysis without this item was also conducted, leading to higher loadings for almost all NEP items. Therefore, the Cronbach's Alpha was calculated, as well as the Cronbach's Alpha if Item Deleted, for each of the 10 items. The Cronbach's Alpha was .676. The only item that had a Cronbach's Alpha if Item Deleted higher than .676 was NEP_1 (.677). After removing NEP 1, there was no item with a Cronbach's Alpha if Item Deleted higher than the construct's Cronbach's Alpha. The Cronbach's Alpha for the constructs trust and general attitude towards the ecolabel were .634 and .662 respectively. No item had a Cronbach's Alpha if Item Deleted higher than the construct's Cronbach's Alpha.

A factor analysis with oblimin rotation was conducted on the ten items measuring environmental concern (NEP score). A factor analysis on the NEP scores with KMO = .683 and Bartlett's Test of

Sphericity p < .05 showed the component with the highest eigenvalue of 2,699. For this analysis, NEP 1 was also the lowest scoring item (.383), although NEP 5 scored quite low as well (.395), as is already displayed in the rotated component matrix (see Appendix G, Table G2).

Keeping in mind the theoretical structure of the scale, NEP 1 is not the only item measuring the primary NEP domain 'Rejection of Exemptionalism'. Also, one other primary NEP-domain is measured using only one item as well (Cordell et al., 2002). However, NEP 5 (which was the second lowest scoring item in the factor analysis) is the other item measuring 'Rejection of Exemptionalism'. Altogether, this supported the decision to remove item NEP 1 from measuring the construct Environmental concern, and not NEP 5, because although it scored low in the factor analysis, the Cronbach's Alpha if Item deleted was not higher than the construct's Cronbach's Alpha, and the NEP domain Rejection of Exemptionalism would disappear if NEP 5 was removed as well. The results of the factor analysis and additional statistics on the Cronbach's Alpha's can be found in Appendix G.

3.5 Procedure

All participant numbers were randomly assigned to the four groups before the experiment had started. The participant numbers were distributed based on whoever walked in first; if a group of 3 walked in together, they were asked to sign the ethical statement, which decided their participant number as they had to sign behind the numbers.

When the participants entered the research room, their session started with signing the ethical briefing (Appendix F) and assigning the participants to a participant number. They were told that the study is about choosing tea, the data will be used for completing the researcher's MSc thesis at the chair group Marketing and Consumer Behaviour, they enter this study voluntarily and they can stop at any moment if they wish to do so. After signing, they received a VR instruction from the researcher. It was explained that they would get (hypothetical) visitors, for whom they had to pick out a tea in the virtual supermarket. The reason for including this in their assignment is that not all participants might purchase tea a lot for themselves, and gave them a purpose for choosing one. How to use the VR glasses was explained. It was also explained that, once they put on the VR glasses, they would see the entrance of a supermarket, they have to go 'START', which brings them to the shelves with tea-options. They were told they can first look around as they normally would in the supermarket. The choice was made to not emphasize that the respondents should answer truthfully because then the respondents might purposely not take the banner into account simply because they have not seen one in the store before and they might just choose the tea they buy often. However, to make sure that the choice experiment is more similar to an actual purchasing setting, the participant was told that they might be selected to receive their chosen tea right after they are done. This consequence increased the chance that a respondent answers truthfully and herewith external validity was strengthened. The participants were also told that after they have chosen their preferred tea and they see 'EINDE', they can take off their glasses and will be asked to fill in the questionnaire on one of the available computers. The complete VR-briefing can be found in Appendix C. If participants had any questions about the questionnaire, they were allowed to ask the researcher. The questionnaire started off with writing down one's participant number and filling in the tea that they chose. Then the question about which labels they have seen and the questions measuring understanding was asked. Then the questions that measure trust and general attitude towards the ecolabel were asked, followed up by some questions on supermarket activities. After this, the NEP questions were included. Measuring these 10 items

before the experiment would possibly influence the participants too much because they would be forced to already think actively about their environmental orientation. The main part of this current study is to examine the impact of the boosting interventions on consumer choice for a sustainable option, and because this impact might be influenced, the choice is made to measure environmental concern after the experiment has been conducted and near the end of the questionnaire. Even if the way in which they filled in these questions was influenced by their condition, it will at least be visible while comparing the conditions; the conditions with the interventions might score higher on environmental concern. After this, some demographic questions were asked, and the manipulation check was included. The last question was about how the participants have heard from the study. In the final text of the questionnaire, the participants were asked to leave their email address if they want to receive an email with 5 more questions, and whether they want to be included in the mailing list for participating in more MCB studies. After the questionnaire, the participants received their snack and possibly a pack of their preferred tea.

3.6 Data analysis

In this paragraph, a plan for the follow-up steps after the data is collected is described. This includes various statistical analyses that were conducted using the statistical software package IBM statistics 26-windows. Across all analyses below, a significance level of $P<0.05$ was used.

First, a randomization check was conducted to see whether the four groups of respondents are similar to each other in terms of demographics (age, gender, level of education, occupation and variables on tea consumption). The check reveals whether control variables are equally distributed among these groups or if the means are significantly different. The group differences for age were compared, using a one-way ANOVA. Time spent in the VR supermarket, attention towards banners and attention towards the RFA labels were compared between the four groups by conducting a Kruskall Wallis H test. A Mann-Whitney U test was run to determine if there were differences in $attention_{labels}$ between the group that recalled seeing the RFA label on the boxes and the group that did not. A manipulation check was performed to see how many participants have seen the banner that was placed in the VR supermarket. A Mann-Whitney U test was run to determine if there were differences in the three variables $attention_{labels}$, understanding and general $attitude_{label}$ within each group between participants who did see the banner and the participants who did not see the banner. The percentages of sustainable choice were compared between the same two groups per group, using the chi-square test of homogeneity. A Chi square test of homogeneity was used for the other variables. Environmental concern and trust were included in the conceptual framework as being stable factors, not as being influenced by the any variables. Ideally they would have been measured before the experiment takes place. However, this would possibly have influenced how participants behave in the VR store too much. Thus, the choice was made to measure this after the VR experiment, in the questionnaire. To analyse whether the assigned condition had any influence on one's environmental concern, it was tested whether the mean NEP scores (with an individual score of 1 as the lowest score and a score of 5 as the highest score) are significantly different between the four groups. The same was done for trust (with 1 as the lowest score and 5 as the highest score), using a one-way ANOVA.

In order to study *'When and how does boosting impact consumer choice for a sustainable option, in a tea assortment?'*, various tests were performed. First, the difference between the four conditions

regarding the amount of sustainable choices was compared. This was done by conducting a chi-square test and binominal logistic regression afterwards, predicting the probability that a sustainable choice is made in each experimental condition.

To test Hypothesis 1, a binominal logistic regression was performed. To test Hypothesis 2, a Pearson's correlation test was conducted. The possible effects of the moderating variables were analysed, and herewith hypotheses 3 and 6 were tested. This was done by analysing the interaction effect in multiple regression. However, this test could only be used if the ordinal scale data from the independent variable(s) can be used as continuous. Many experts were involved in this debate, and its conclusion is rather clear: it is possible to use parametric tests to analyse Likert scale data. Nonetheless, calculating the means can be limited, unless the data is normally distributed. A frequency distribution of the responses is probably more helpful during analysis (Sullivan & Artino, 2013). Analysis was conducted on whether the size of the relationship between understanding of the RFA label and general attitude towards the ecolabel changed as a function of trust in the ecolabel and/or environmental concern. To test Hypothesis 4, a Pearson's correlation test was performed. Hypothesis 5 was studied by conducting a linear regression analysis, with environmental concern as the independent variable and attention for the RFA labels as dependent variable. For environmental concern, the scores of the negatively framed statements, which were 5 out of 10 statements, were reversed so that in all the statements 'strongly disagree' corresponds with a negative environmental attitude and 'strongly agree' with a positive one. To test hypotheses 7, 8 and 9, a multiple regression analysis was conducted with dummy variables for the factors 'informational context' and 'low-construal message' and its interaction term.

A one-way ANOVA was used to identify a possible change in understanding score between the moment of measurement right after the VR experiment, and approximately two weeks later. The mean change in understanding per condition was compared. This revealed which participants still remember the information provided by the interventions. Lastly, for the exploratory analysis, binominal logistic regression was used to explore attention$_{labels}$, environmental concern, trust, and understanding as possible variables that explain sustainable choice. Lastly, a linear regression was run to examine the effect of attention$_{labels}$ on general attitude$_{label}$.

4. Results

4.1 Descriptive information and checks

A total of 150 participants completed the experiment, which consists of the VR part as well as the questionnaire. They were randomly exposed to either a banner with informational context (group B), a banner with a low-construal message (group C), a banner with both an informational context and a low-construal message (group D) or an empty banner (control group A). The number of participants in group A, B and C is 38 and group D contains 36 participants.

4.1.1 Randomization check

The randomisation was over-all successful (see Table 2.). A one-way Welch ANOVA was conducted to compare participants' mean age per group.[1] The mean age of the respondents was 22.76 (SD = 5.9) years (range 18-59 years). The mean age per group was: 22.47 Years (SD = 3.5) in group A, 22.82 years (SD = 5.6) in group B, 24.11 years (SD = 9.6) in group C and 21.58 years (SD = 2.3) in group D. The differences in age between groups were not statistically significant, Welch's F(3, 75.752) = 1.459, p = .233.

Additionally, Fisher's exact test was conducted between group and gender (X^2 (6) = 5.599 ; p = 0.427). This test revealed that the participants' gender did not differ significantly between the four groups. For 'highest level of education', only three out of six choice options were chosen (high school, bachelor's degree, and master's degree). Fisher's exact test was conducted between the group and highest level of education (X^2 (6) = 3.146 ; p = 0.802). For occupation, only two out of three options were chosen ('I am a student' and 'I am working'). Fisher's exact test was conducted between the group and occupation (X^2 (3) = 6.115 ; p = 0.093). Highest level of education and occupation did not differ significantly between the four groups either.[2]

With a possible NEP-score between 1 and 5, only 10 participants had a NEP score below 3, which indicates only a few low NEP-scores amongst the participants. A one-way Welch ANOVA was conducted to compare participants' NEP scores.[3] The test showed that the differences in NEP score between groups were not statistically significant, Welch's F(3, 78.967) = .113, p = .953). The one-way ANOVA showed that participants' trust score did not significantly differ between the groups either (F(3) = 0.924, p = 0.431).[4]

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[1] There were 6 outliers, as assessed by the boxplot; data was not normally distributed for each group, as assessed by Shapiro Wilk test (p < .05); and there was no homogeneity of variances, as assessed by Levene's test of homogeneity of variances (p = .020).

[2] The choice to conduct Fisher's exact tests was made because the sample size assumption for a Chi Square test is not met.

[3] There were 10 outliers, as assessed by the boxplot; data was normally distributed, as assessed by Shapiro-Wilk's test (p > .05); and there was no homogeneity of variances, as assessed by Levene's test for equality of variances (p = .035).

[4] There was homogeneity of variances, as assessed by Levene's test for equality of variances (p = .825). Trust was normally distributed, as assessed by Shapiro-Wilk's test (p > .05), and there was one outlier.

Table 2.

Randomisation check: participants' age, gender, level of education, occupation, NEP score, and trust score per group

	A (*N* = 38)	B (*N* = 38)	C (*N* = 38)	D (*N* = 36)
Age (*M*)	22.47 (SD = 3.5)	22.82 (SD = 5.6)	24.11 (SD = 9.6)	21.58 (SD = 2.3)
Gender (*N*)				
Male	14 (37%)	12 (32%)	17 (45%)	17 (47%)
Female	24 (63%)	26 (68%)	21 (55%)	18 (50%)
Other	0 (0%)	0 (0%)	0 (0%)	1 (3%)
Level education (*N*)				
Primary school	0 (0%)	0 (0%)	0 (0%)	0 (0%)
High school	13 (34%)	14 (37%)	15 (39%)	16 (44%)
Bachelor's Deg.	21 (55%)	21 (55%)	17 (45%)	18 (50%)
Master's Deg.	4 (11%)	3 (8%)	6 (16%)	2 (6%)
PhD or higher	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Other	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Occupation (*N*)				
Student	36 (95%)	36 (95%)	31 (82%)	35 (97%)
Employed	2 (5%)	2 (5%)	7 (18%)	1 (3%)
Other	0 (0%)	0 (0%)	0 (0%)	0 (0%)
NEP score* (*M*)	3.623 (SD = 0.347)	3.652 (SD = 0.435)	3.579 (SD = 0.642)	3.623 (SD = 0.531)
Trust score* (*M*)	3.3947 (SD = 0.52192)	3.5724 (SD = 0.49288)	3.5461 (SD = 0.56907)	3.5556 (SD = 5.2137)

Note. *5-point Likert scale average

A separate randomization check was conducted for the tea brand and flavour that participants self-reportedly drink the most often, and for frequency of buying tea. A chi-square test of independence was conducted between group and tea brand.[5] There was a statistically significant association between group and tea brand, X^2(12) = 21.893, p = .039. The association was moderately strong (Cohen, 1988), Cramer's V = .221. This means that the distributions of tea brands per group are statistically significantly different between the four groups. For brand, the differences stand out for Pickwick and private label. In control group A, only 10 participants chose Pickwick, whereas in informational context group B this number was 20. In the group that was exposed to both the informational context and the low-construal message, zero participants said they drink private label teas most often, whereas in control group A this number was 12. See Table 3. for more detailed statistics.

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[5] Not all expected cell frequencies were greater than five.

Table 3.

Self-reported tea brand one drinks most often: distribution per group

Tea Brand		Group A	B	C	D	Total
Lipton	Count	4	2	5	6	17
	Expected count	4.3	4.3	4.3	4.1	17
		(-.2)	(-1.4)	(.4)	(1.2)	
Pickwick	Count	10	20	17	18	65
	Expected count	16.5	16.5	16.5	15.6	65
		(-2.4)	(1.3)	(.2)	(.9)	
Private label	Count	12	8	6	0	26
	Expected count	6.6	6.6	6.6	6.2	26
		(2.7)	(.7)	(-.3)	(-3.2)	
All equally often	Count	6	3	8	8	25
	Expected count	6.3	6.3	6.3	6	25
		(-.2)	(-1.7)	(.8)	(1)	
None of these brands	Count	6	5	2	4	17
	Expected count	4.3	4.3	4.3	4.1	17
		(1)	(.4)	(-1.4)	(0)	

Note. Adjusted residuals appear in parentheses below expected count

A chi-square test of independence was conducted between group and tea flavour as well.[6] There was no statistically significant association between group and tea flavour, $X^2(21) = 15.664$, $p = .788$. The association was weak (Cohen, 1988), Cramer's V = .187. Differences in distributions of tea flavour that one drinks the most often per group were not statistically significant. See Table 4. Below for more detailed statistics.

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[6] Not all expected cell frequencies were greater than five.

Table 4.

Self-reported tea flavour one drinks most often: distribution per group

Tea Flavour		A	B	C	D	Total
				Group		
Earl Grey	Count	4	4	7	3	18
	Expected count	4.6	4.6	4.6	4.3	18
English Breakfast	Count	3	4	2	2	11
	Expected count	2.8	2.8	2.8	2.6	11
Forest Fruit	Count	5	7	4	6	22
	Expected count	5.6	5.6	5.6	5.3	22
Green tea	Count	5	3	5	8	21
	Expected count	5.3	5.3	5.3	5	21
Green tea lemon	Count	5	4	7	5	21
	Expected count	5.3	5.3	5.3	5	21
Rooibos	Count	9	9	6	6	30
	Expected count	7.6	7.6	7.6	7.2	30
All equally often	Count	1	4	1	0	6
	Expected count	1.5	1.5	1.5	1.4	6
None of these flavours	Count	6	3	6	6	21
	Expected count	5.3	5.3	5.3	5	21

Lastly, a chi-square test of independence was conducted between group and frequency of buying tea.[7] There was no statistically significant association between group and tea flavour, $X^2(12) = 9.55$, $p = .655$. The association was weak (Cohen, 1988), Cramer's V = .146. Differences in distributions of frequency of buying tea per group were not statistically significant. See Table 5. Below for more detailed statistics.

Table 5.

Self-reported frequency of buying tea: distribution per group

Frequency		A	B	C	D	Total
				Group		
Never	Count	2	4	1	3	10
	Expected count	2.5	2.5	2.5	2.4	10
Rarely	Count	7	6	4	4	21
	Expected count	5.3	5.3	5.3	5.0	21
Sometimes	Count	13	8	12	15	48
	Expected count	12.2	12.2	12.2	11.5	48
Often	Count	10	13	13	12	48
	Expected count	12.2	12.2	12.2	11.5	48
Very often	Count	6	7	8	2	23
	Expected count	5.8	5.8	5.8	5.5	23

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[7] Not all expected cell frequencies were greater than five.

4.1.2 Additional descriptive statistics

Time spent in the VR supermarket

Time spent in the VR supermarket was compared between the four groups by running a Kruskal Wallis H test.[8] The medians for VR time in seconds were measured for group A (*Mdn* = 69.50), B (*Mdn* = 60.00), C (*Mdn* = 77.00) and D (*Mdn* = 72.50), but the differences were not statistically significant, X^2 (3) = 2.804, *p* = .423. The time that participants spent in the virtual store does not significantly differ between the four groups.

General eye-movement behaviour across assortment

To get a general overview of whether the four groups differ in terms of how participants' attention was divided across the assortment, the amount of times their eyes cross either a Hoogvliet, Pickwick or Lipton tea-choose-button was counted. Each time the VR glasses measure that a button was attended was counted as one time, regardless of how long this button has been attended to (no fixation threshold is present). The percentages of how frequently buttons were attended per brand are given per group, in Figure 10. below. This provides a rough estimation of whether the participants mainly focus on the top (Hoogvliet), middle (Pickwick) or bottom (Lipton) of the assortment when looking around.
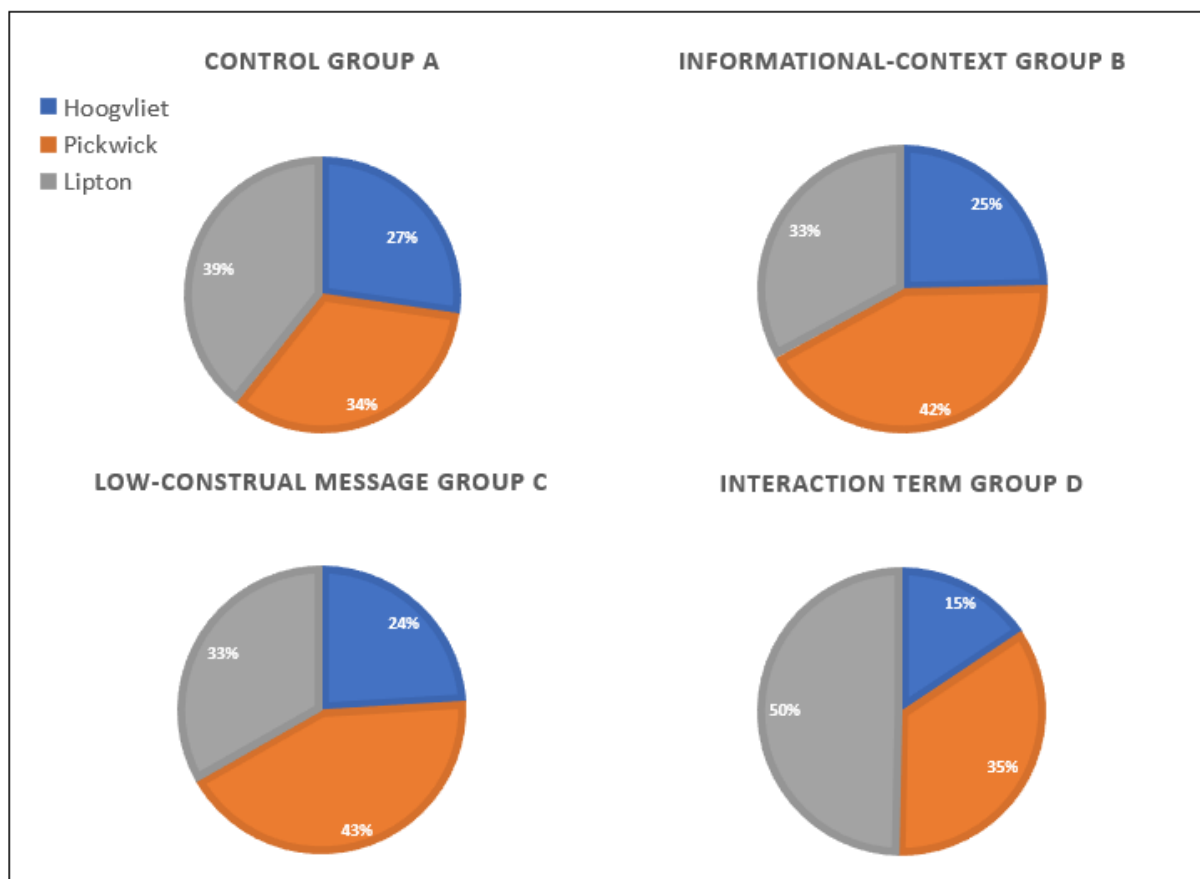
Figure 10. Distributions of choose-buttons that were crossed, per brand and per group

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[8] This choice was made because there were two outliers and the groups were not normally distributed. Distributions of VR time were similar for all groups, as assessed by visual inspection of a boxplot.

Attention towards banners

Attention towards the banners was compared between the four groups. For control group A, 26 participants have not fixated on the banner in informational context group B this number was 17, and in low-construal message group C and group D which was exposed to both the informational context and the low-construal message these numbers were 18 and 12 respectively. A Kruskal-Wallis H test was conducted to assess whether the time spent looking at the banner differs between the four groups.[9] Medians for attention towards the banner in milliseconds were statistically significantly different between groups, X^2 (3) = 17.151, p = .001. Pairwise comparisons were performed using Dunn's (1964) procedure with a Bonferroni correction for multiple comparisons. The adjusted p-values are presented for all combinations of groups. The post hoc analysis revealed statistically significant differences in attention towards the banner in milliseconds between group A (*Mdn* = .00) and C (*Mdn* = 508) (p = .031) and A and D (*Mdn* = 1745.50) (p = .000), but not between group B (*Mdn* = 576.50) or any other group-combination. This means that significantly more time in milliseconds was spent looking at the banner with only the low-construal message and the one that includes both the informational context and the low-construal message, compared to the control group.

Manipulation check

A manipulation check was conducted to see how many participants have seen the banner that was placed in the VR supermarket. For group B, C and D, the number of participants that fixated on the banner were 21 out of 38, 20 out of 38 and 24 out of 36 respectively. This possibly means that the actual effect of the manipulations is diluted by including all participants in the experimental groups, including the ones that did not fixate on the banner. To get a glimpse of whether this dilution-effect is present, a Mann-Whitney U test was run[10] to determine if there were differences in the three variables attention$_{labels}$, understanding and general attitude$_{label}$ within each group between participants who did fixate on the banner and the participants who did not.[11] The chi-square test of homogeneity was used to compare the percentages of sustainable choice between participants who did fixate on the banner and the participants who did not fixate on the banner.

Group exposed to informational context

Attention$_{labels}$ was not statistically significantly different between participants who fixated on the banner with the informational context (*Mdn* = 12.39) and participants who did not fixate on this banner (*Mdn* = 14.03), *U* = 35.50., *z* = 1.551, *p* = .105. Understanding was not statistically significantly different between participants who fixated on the banner with the informational context (*Mdn* = 2.00) and participants who did not fixate on this banner (*Mdn* = 2.00), *U* = 24.00, *z* = .525, *p* = .737. General attitude$_{label}$ was not statistically significantly different between participants who fixated on the banner with the informational context (*Mdn* = 3.5) and participants who did not fixate on this banner (*Mdn* = 3.5), *U* = 27.50, *z* = .838, *p* = .526.. The percentages of sustainable choices were also compared between participants who fixated on the banner with the informational context and the ones who did not, which

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[9] This non-parametric alternative to the one-way ANOVA is chosen because there were a lot of outliers in the data and the data was not normally distributed for each group (p < .05). Distributions of attention towards the banners were similar for all groups, as was assessed by visually inspecting a boxplot.

[10] This non-parametric alternative to a t-test is used due to a large number of outliers.

[11] Distribution of all the three variables for participants who did see the banner and participants who did not were similar, as assessed by visual inspection.

were 52.4% and 35.3% respectively. This is a non-statistically significant difference in proportions of .171, p = .292.

Group exposed to low-construal message
Attention$_{labels}$ was not statistically significantly different between participants who fixated on the banner with the low-construal message (*Mdn* =16.05) and participants who did not fixate on this banner (*Mdn* = 16.50), U = 157.00, z = -.672, p = .515. Understanding was not statistically significantly different between participants who fixated on the banner with the low-construal message (*Mdn* = 2) and participants who did not fixate on this banner (*Mdn* = 2), U = 221.50, z = 1.316, p = .228. General attitude$_{label}$ was not statistically significantly different between participants who fixated on the banner with the low-construal message (*Mdn* = 4) and participants who did not fixate on this banner (*Mdn* = 3.5), U = 229.50, z = 1.470, p = .149. The percentages of sustainable choices were also compared between participants who fixated on the banner with the low-construal message and the ones who did not, which were 40.0% and 38.9% respectively. This a non-statistically significant difference in proportions of .011, p = .944.

Group exposed to both informational context and low-construal message
Attention$_{labels}$ was not statistically significantly different between participants who fixated on the banner with both the informational context and the low-construal message (*Mdn* = 12.24) and participants who did fixate on this banner (*Mdn* = 9.25), U = 159.00, z = .503, p = .631. Understanding was not statistically significantly different between participants who fixated on the banner with both the informational context and the low-construal message (*Mdn* = 2) and participants who did not fixate on this banner (*Mdn* = 2), U = 158.50, z = .533, p = .631. General attitude$_{label}$ was not statistically significantly different between participants who fixated on the banner with both the informational context and the low-construal message (*Mdn* = 3.5) and participants who did not fixate on this banner (*Mdn* = 4), U = 113.50, z = -1.047, p = .311. The percentages of sustainable choices were also compared between participants who fixated on the banner with both the informational context and the low-construal message, and the ones who did not, which were 29.2% and 16.7% respectively. Due to small sample sizes, Fisher's exact test was run. There was a non-statistically significant difference in proportions of .125, p = .350.

Due to a lack of statistically significant differences between participants that did fixate on the banner and the ones that did not, for each group, a dilution-effect does not seem to be present.

Attention towards the RFA labels
Attention$_{labels}$ was compared between the four groups by running a Kruskal Wallis H test.[12] Medians of attention$_{labels}$ were statistically significantly different between groups, X^2 (3) = 8.527, p = .036. Afterwards, pairwise comparisons were performed using Dunn's (1964) procedure with a Bonferroni correction for multiple comparisons. Adjusted p-values are presented. This post hoc analysis shows statistically significant differences in attention between control group A (*Mdn* = 10.14) and low-construal message group C (*Mdn* = 16.05) (p = .044), but not between informational context group B (*Mdn* = 12.52) and group D which was exposed to both the informational context and the low-construal

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[12] This non-parametric alternative was chosen because there were too many outliers. Distributions of attention were similar for all groups, as assessed by visual inspection of a boxplot.

message (*Mdn* = 10.44), or any other group combination. Thus, for the group in which the participants were exposed to the low-construal message only, their median time spent looking at the RFA labels was significantly longer compared to the control group. Means and standard deviations from the one-way ANOVA can be found in Table 6. below.

Table 6.

Descriptive statistics for attention$_{labels}$ per group

	Mean	Std. Dev.	Std. Error	95% Confidence Interval for Mean Lower Bound	Upper Bound	Min.	Max.
Group A	11.30	9.29	1.51	8.25	14.35	.00	37.00
Group B	16.01	15.37	2.49	10.95	21.06	.00	75.47
Group C	20.31	16.92	2.74	14.75	25.87	.00	73.39
Group D	14.32	16.79	2.80	8.64	20.00	.00	74.00
Total	15.50	15.11	1.23	13.06	17.94	.00	75.47

Additionally, Table 7. below displays the average amount of times a participant fixated on an RFA label.

Table 7.

Descriptive statistics for number of times fixated on a label per participant

	Mean	Std. Dev.	Std. Error	95% Confidence Interval for Mean Lower Bound	Upper Bound	Min.	Max.
Group A	4.29	3.43	.56	3.16	5.41	.00	16
Group B	4.34	3.20	.52	3.29	5.39	.00	14
Group C	6.18	3.72	.60	4.96	7.41	.00	18
Group D	4.28	2.98	.50	3.27	5.29	.00	13
Total	4.78	3.41	.279	4.23	5.33	.00	18

Note. There were only 6 RFA labels in the environment, each time a participant had looked away and looked at a label again this was counted

Attention$_{labels}$ was measured by using track areas in the VR environment. To measure this attention in another way, the participants were asked which ecolabels they recall seeing in the VR environment. The participants that selected the RFA label as the label they recall seeing were coded with a 1, and the ones who did not were coded with a 0, resulting in a dichotomous, additional measure for attention. 15 participants reported they recall seeing the RFA label and 135 participants did not report this. A Mann-Whitney U test was run to determine if there were differences in attention$_{labels}$, between the group that recalled seeing the RFA label on the boxes and the group that did not.[13]

Attention measured in the VR environment did not statistically significantly differ between the group that recalls seeing the RFA label (mean rank = 79.83) and the group that did not recall seeing the RFA label (mean rank = 75.02), *U* = 1077.5, *z* = .407, *p* = .684. The participants who recall seeing the RFA

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[13] This choice is made because there were too many outliers to run an independent samples t-test. Distributions of attention measured in the VR environment for recall yes or no were not similar, as assessed by visual inspection.

label on the tea boxes did not have a higher attention$_{labels}$ score, compared to the participants that did not recall seeing the RFA labels on the tea boxes. Ideally, the group that recalls seeing the RFA label also attended these labels for a longer time. Thus, either the measurement of attention in the VR environment is inaccurate, or participants that did fixate on the RFA labels might not have recognized the RFA label from the assortment of labels that they had to choose whether they saw them from. 118 participants indicated that they had not seen any of the five different ecolabels that were presented to them in the questionnaire, 17 participants did not recall seeing the RFA label but did recall seeing another label. Most (n=12) recalled seeing the Fairtrade label, although no Fairtrade labels were present in this assortment. It might be that this label was confused with the RFA label, since it is common to find this label on tea (Fairtrade Nederland, 2020).

Because attention measured using the VR glasses was based on what the participant actually looked at instead of reporting it themselves, this is kept as the measure of 'attention' throughout the results (thus, attention$_{labels}$ is all of the time the participant spent looking at the RFA labels in milliseconds added together, but only for the labels that were looked at for longer than 80 milliseconds, divided by the time the participant spent in the VR environment in seconds). Furthermore, a participant might not have recognized the RFA label correctly in the questionnaire, but might have seen it in the assortment.

As the track areas of the labels are closely located to the choose-button of that tea, a check on whether this label was fixated on before choosing a labelled tea was conducted. For all participants that chose a sustainable tea, a closer look was taken at the raw data in order to study whether the RFA label on the bottom tea of the two teas (thus, the label closest to the choose-button) was fixated on right before or at least 7 seconds before the choice was made. Frequencies of participants that did so for longer than 80 milliseconds are also studied, as well as whether participants that chose a sustainable tea fixated on a choose-button of a sustainable tea earlier in their 'shopping trip', for longer than 1 second and attended the accompanying bottom label within 8 milliseconds beforehand for longer than 80 milliseconds. Lastly, the proportion of participants from this last group, that also self-reportedly recalled seeing the RFA label was studied. All proportions are displayed in Table 8. below.

Table 8.

Check on whether proximity between the RFA label and the choose-button possibly caused a measurement error in attention$_{labels}$

	Group A	Group B	Group C	Group D
Proportion of participants that looked at label above choose-button right before choosing / participants that chose a labelled tea	10/15	11/17	13/15	7/9
Proportion of participants that looked at label above choose-button for longer than 80 ms right before choosing / participants that chose a labelled tea	8/15	11/17	7/15	5/9
Proportion of participants that looked at label above choose-button for longer than 80 ms right before looking at the corresponding choose-button / participants that chose a labelled tea	10/15	14/17	12/15	8/9
Proportion of participants that recall seeing the RFA label / participants that looked at label above choose-button for longer than 80 ms right before looking at the corresponding choose-button	0/10	2/14	3/12	2/8

The variable attention$_{labels}$ has 12 outliers that contain abnormally high scores. To explore what could explain these outliers, they were studied for abnormal scores on other variables. It appeared that 4 out of these 12 participants (33.3%) chose 'working' as occupation instead of 'studying'. From the 138 participants, only 8 participants (5.8%) chose 'working'. Due to small sample sizes, Fisher's exact test was run. There was a statistically significant difference in proportions of .275, *p* = .008.

Tea choices

A chi-square test of independence was conducted between group and chosen tea brand as well.[14] There was a statistically significant association between group and chosen tea brand, $X^2(6)$ = 16.153, *p* = .013. The association was moderate (Cohen, 1988), Cramer's V = .232. This means that the differences in distributions of tea brand choice per group were statistically significantly different. See Table 9. below for more detailed statistics.

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[14] Not all expected cell frequencies were greater than five.

Table 9.

Tea brand choice: distribution per group

| Tea Brand | | Group | | | | |
		A	B	C	D	Total
Lipton	Count	20	10	12	20	62
	Expected count	15.7	15.7	15.7	14.9	62
		(1.6)	(-2.2)	(-1.4)	(2.0)	
Pickwick	Count	12	23	23	16	74
	Expected count	18.7	18.7	18.7	17.8	74
		(-2.5)	(1.6)	(1.6)	(-.7)	
Private label	Count	6	5	3	0	14
	Expected count	3.5	3.5	3.5	3.4	14
		(1.6)	(.9)	(-.4)	(-2.2)	

Note. Adjusted residuals appear in parentheses below expected count

A comparison of chosen tea flavours is given in Table 10. below.

Table 10.

Tea flavour choice: distribution per group

| Chosen tea flavour | | Group | | | | |
		A	B	C	D	Total
Black	Count	15	17	16	15	63
	Expected count	16	16	16	15.1	63
Green	Count	14	11	11	15	51
	Expected count	12.9	12.9	12.9	12.2	51
Rooibos	Count	9	10	11	6	36
	Expected count	9.1	9.1	9.1	8.6	36

Note. Black teas and green teas are grouped together

The teas with the RFA are Forest Fruit and Green tea lemon from Hoogvliet, Earl Grey and Rooibos from Pickwick, and English Breakfast and Green tea from Lipton. These teas and their frequency in choice are displayed in Figure 11. below.
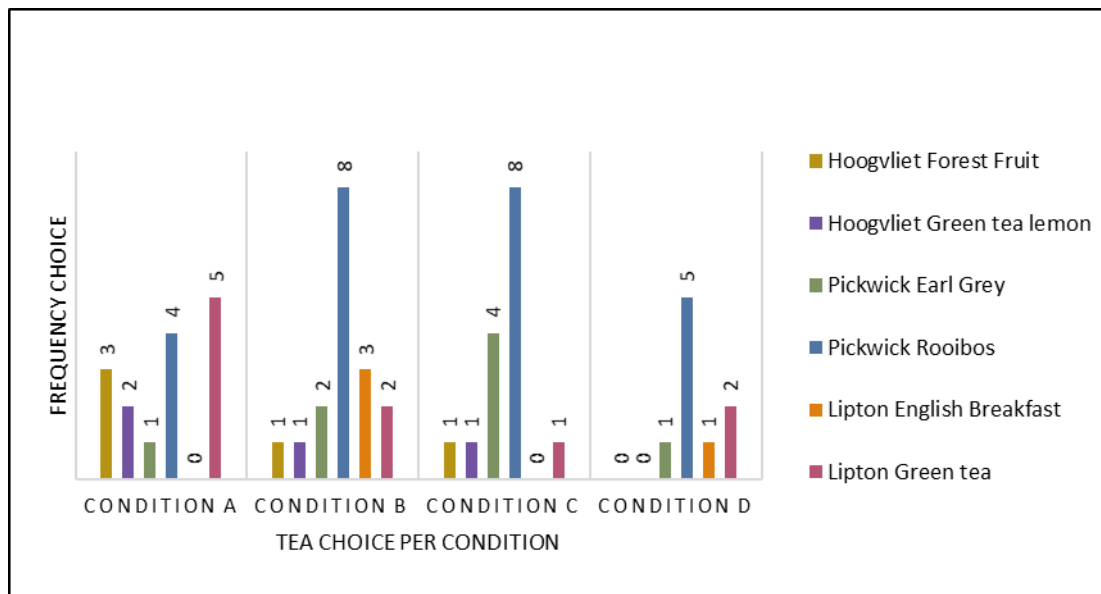
Figure 11. Sustainable tea choice across the four groups

A comparison of chosen tea flavours, only including the teas that have the RFA label, is given in Table 11. below.

Table 11.

Tea flavour choice distribution only for sustainable teas: distribution per group

Chosen tea flavour		Group				
		A	B	C	D	Total
Black	Count	4	6	5	2	17
	Expected count	4.3	4.3	4.3	4.1	17
Green	Count	7	3	2	2	14
	Expected count	3.5	3.5	3.5	3.4	14
Rooibos	Count	4	8	8	5	25
	Expected count	6.3	6.3	6.3	6	25

Note. Black teas and green teas are grouped together

A comparison of chosen tea brands, only including the teas that have the RFA label, is given in Table 12. below.

Table 12.

Tea flavour choice distribution only for sustainable teas: distribution per group

| Chosen tea brand | | Group | | | | |
---	---	A	B	C	D	Total
Lipton	Count	5	5	1	3	14
	Expected count	3.5	3.5	3.5	3.4	14
Pickwick	Count	5	10	12	6	33
	Expected count	8.4	8.4	8.4	7.9	33
Hoogvliet	Count	5	2	2	0	9
	Expected count	2.3	2.3	2.3	2.2	9

In Table 13. below, frequencies for flavour choice per group and per brand are given. The sustainable options are marked grey. Furthermore, the proportion of sustainable choices per flavour, per group, is given in this table.

Table 13.

Flavour choice frequency per brand and expected frequency of choosing an RFA tea per flavour: distribution per group

	Lipton	Pickwick	Hoogvliet	Proportion of sustainable choices per flavour
Group A				
Earl grey	1	1	0	1/2
English Breakfast	0	1	0	0/1
Forest Fruit	8	1	3	3/12
Green tea	5	3	0	5/8
Green tea lemon	2	2	2	2/6
Rooibos	4	4	1	4/9
Group B				
Earl grey	0	2	1	2/3
English Breakfast	3	1	1	3/5
Forest Fruit	2	6	1	1/9
Green tea	2	3	0	2/5
Green tea lemon	2	3	1	1/6
Rooibos	1	8	1	8/10
Group C				
Earl grey	3	4	0	4/7
English Breakfast	0	3	0	0/3
Forest Fruit	2	3	1	1/6
Green tea	1	1	1	1/3
Green tea lemon	3	4	1	1/8
Rooibos	3	8	0	8/11
Group D				
Earl grey	1	1	0	1/2
English Breakfast	1	3	0	1/4
Forest fruit	7	2	0	0/9
Green tea	2	1	0	2/3
Green tea lemon	8	4	0	0/12
Rooibos	1	5	0	5/6

Note. Sustainable flavour-brand combinations are marked grey. When the proportion of sustainable choices is higher than 1/3, the cell is marked green.

Check for likelihood of demand effects

The answers on the open question that asks participants what they think the study was about were analysed. Inductive codes were created, and for each participant all codes that apply to their answer were selected. Answers that only said 'ecolabels' or 'choosing tea' were not included, as this was not specific enough and very obvious from the tasks during the study. Overall, the frequencies do not display obvious dissimilarities between the four groups. One participant answered 'Whether extra

information on the label influences consumer choice', which was the most specific and correct answer. As this was only one participant, this check is considered successful. The frequencies can be found in Table 14. below.

Table 14.

Frequency table themes per group

	Group A	Group B	Group C	Group D
Influence ecolabel on consumer behaviour	16	20	19	23
Relation between views on ecolabel and views on environmental issues	5	2	5	3
Relation between environmental importance/concern and consumer behaviour	8	7	4	9
Degree to which ecolabels stand out/visibility	1	5	2	2
Degree to which one recognizes ecolabels	0	1	0	0
Reasons for buying tea	1	1	1	2
Other	5	3	4	0
Participants view of ecolabels	8	10	8	8
Perception of how sustainable a tea is	1	1	0	1
Difference between attitude and behaviour regarding ecolabels	1	0	0	0
Conscious decisions	1	2	2	2
Effects tea production on environment	3	1	0	2
Awareness/view of environmental decay/future of earth	1	1	1	2
Whether consumers choose a sustainable tea	0	2	0	1
Whether extra information on the label influences consumer choice	0	0	1	0
Mentioned RFA label	1	2	1	2

4.2 Hypotheses testing

4.2.1 Effect of manipulation on sustainable choice

A Chi square test was performed to determine whether sustainable choice (choosing a tea with or without the RFA label) was equally divided across the four groups.[15] This test indicated that 15 participants (39%) chose a sustainable tea in group A, and 17 (45%), 15 (39%) and 9(25%) in group B, C and D respectively (see Table 15.). There were no significant differences in the proportions of sustainable choice in these four groups, p = .337. Thus, the amount of sustainable choices was equally divided across these groups.

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[15] All expected cell frequencies were greater than five.

Table 15.

Tea Choice: frequency RFA labelled teas per group

	Control group A	Informational context group B	Low-construal message group C	Informational context + low-construal message group D	Total
Tea without RFA label					
Count	23	21	23	27	94
Expected count	23,8	23,8	23,8	22,6	94
Tea with RFA label					
Count	15	17	15	9	56
Expected count	14,2	14,2	14,2	13,4	56
Total					
Count	38	38	38	36	150
Expected count	38	38	38	36	150

To assess which boosting strategy has the most effect on sustainable choice, a binominal logistic regression was performed, with the two factors, informational context (present or not present) and low-construal message (present or not present), and the interaction term as independent variables and choice (sustainable or not sustainable) as the dependent variable.[16] The logistic regression model was not statistically significant, X^2 (3) = 3.50, p = .321. The model explained 3.1% (Nagelkerke R^2) of the variance in sustainable choice and correctly classified 62.7% of cases. Sensitivity was 0%, specificity was 100%, positive predictive value was 0% and negative predictive value was 62.7%. There was no statistically significant main effect; being exposed to an informational context or to a low-construal message does not predict choice. See Table 16. below for more elaborate statistics.

Table 16.

Binominal logistic Regression Predicting Likelihood of sustainable choice based on informational context, low-construal message and interaction term

	B	SE	Wald	df	p	Odds Ratio	95% CI for Odds Ratio Lower	95% CI for Odds Ratio Upper
Informational context	.216	.465	.216	1	.642	1.241	.499	3.090
Low-construal message	.000	.469	.000	1	1.000	1.00	.399	2.509
Interaction term	-.887	.689	1.658	1	.198	.412	.107	1.589
Constant	-.427	.332	1.659	1	.198	.652		

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[16] No outliers were found.

4.2.2 Hypotheses

Hypothesis 1 states that a positive general attitude towards ecolabelling increases the probability of an informed sustainable choice to occur. A binominal logistic regression was performed to test the effect of general attitude$_{label}$ on sustainable choices (choosing a tea with the RFA label or not).[17] The logistic regression model was not statistically significant, X^2 (1) = .644, p = .422. In Table 17., more specific results of the logistic regression are displayed. The model explained 0.6% (Nagelkerke R^2) of the variance in choice and correctly classified 62.7% of cases. Sensitivity was 0%, specificity was 100%, positive predictive value was 0% and negative predictive value was 62%. The results did not support the expectations of Hypothesis 1, a positive general attitude towards ecolabelling does not increase the probability of an informed sustainable choice to occur.

Table 17.
Logistic Regression Predicting Likelihood of sustainable choice based on general attitude$_{label}$

	B	*SE*	Wald	*df*	*p*	Odds Ratio	95% CI for Odds Ratio	
							Lower	Upper
General attitude$_{label}$	.138	.173	.636	1	.425	1.148	.817	1.613
Constant	-1.000	.631	2.511	1	.113	.368		

Hypothesis 2 states that a better understanding of the ecolabel leads to a more positive general attitude towards the ecolabel. A linear regression was run to understand the effect of understanding on general attitude$_{label}$.[18] The prediction equation was: general attitude$_{label}$ = 3.006 + (0.190*understanding) (see Figure 12. below). Understanding statistically significantly predicted general attitude$_{label}$, F(1, 148) = 5.156, p = .025, accounting for 3.4% of the variation in general attitude$_{label}$ with adjusted R^2 = 2.7%. This is, however, a trivial effect size according to Cohen's (1988) classification. Hypothesis 2 is supported: a better understanding of the ecolabels leads to a statistically, but not practically significant more positive general attitude towards the ecolabel.

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[17] The assumption of linearity is met (p = .174), attention$_{labels}$ is linearly related to the logit of whether a sustainable choice is made. No outliers were found.

[18] A scatterplot of understanding against general attitude$_{label}$ was plotted. Visual inspection of this scatterplot indicated a linear relationship between the two variables. There was independence of residuals, as assessed by a Durbin-Watson statistic of 1.954. There was homoscedasticity, as assessed by visual inspection of a plot of standardized residuals versus standardized predicted values. Residuals were normally distributed as assessed by visual inspection of a normal probability plot.
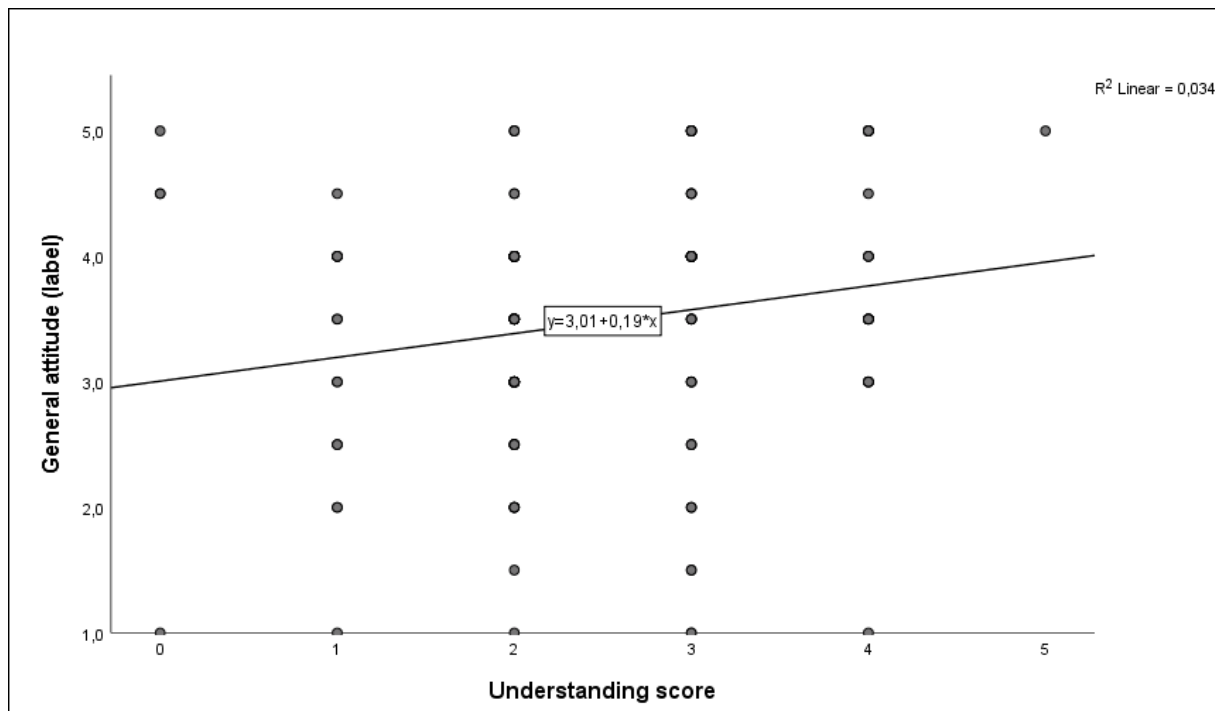
Figure 12. Simple Scatter of General attitude$_{label}$ score by Understanding score

Hypothesis 3 states that trust in the ecolabel moderates the relationship between understanding of the ecolabel and the general attitude towards the ecolabel; the relation between understanding and general attitude was stronger when trust in the ecolabel was higher and less strong when trust in the ecolabel was lower. This interaction (moderator) hypothesis was tested via multiple regression. A centering methodology was used to reduce multicollinearity. The results did not support the expectations of Hypothesis 3: 2.6% of the variance in general attitude$_{label}$ was being accounted for by this model with trust centered, understanding centered, and trust*understanding centered, which is not statistically significant, $F(3, 146) = 2.308$, $p = .079$, adj. $R^2 = .026$. The p-value for the interaction between trust and understanding was not significant ($p = .491$) and does herewith not show that trust moderates the relationship between understanding and general attitude$_{label}$. The relationship between the two does not change as a function of trust. Thus, Hypothesis 3 is not supported. Regression coefficients and standard errors can be found in Table 18. (below).

Table 18.

Summary of Multiple Regression Analysis: trust in ecolabel as a moderator on the relationship between understanding of the ecolabel and general attitude$_{label}$

Variable	*B*	*SE$_\beta$*	*β*
Intercept	3.458	.082	
Trust (centered)	.173	.156	.092
Understanding (centered)	.153	.088	.148
Trust x Understanding (centered) (moderator)	.105	.152	.058

Note. *B* = unstandardized regression coefficient; *SE$_\beta$* = Standard error of the coefficient; *β* = standardized coefficient

Hypothesis 4 states that attention towards ecolabels increases the understanding and memorizing of these labels and what they mean. A linear regression was run to examine the effect of attention$_{labels}$ on the understanding of these labels.[19] Attention$_{labels}$ accounted for 1.6% of the variation in understanding with adjusted R^2 = 0.9%. Attention$_{labels}$ did not statistically significantly predict understanding, $F(1, 148)$ = 2.340, p = .128. No positive linear relationship exists between attention$_{labels}$ and understanding of the RFA label (see Figure 13. below). These results do not support Hypothesis 4, attention$_{labels}$ does not increase understanding of what these labels mean.

Figure 13. Simple Scatter of Understanding score by Attention$_{labels}$

As memorizing what is learned is an important part of a boost, understanding was measured again after 2 weeks. A three-way mixed ANOVA was run to understand the effects of being exposed to an informational context, being exposed to a low-construal message, and the moment the understanding score was measured (right after the experiment and after 2 weeks).[20] There was a statistically significant two-way interaction between moment of measurement and informational context, $F(1, 100)$ = 4.568, p = .035. All other two-way interactions and the three-way interaction were not statistically significant (p > .05). Statistical significance of a simple main effect was accepted at a Bonferroni-adjusted alpha level of .025. There was a statistically significant simple main effect of informational context for understanding score after 2 weeks, $F(1, 100)$ = 7.534, p = .007, but not at the first time understanding was measured, F(1, 100) = .014, p = .905. All pairwise comparisons were performed for statistically significant simple main effects. Bonferroni corrections were made with comparisons within each simple main effect considered a family of comparisons. Adjusted p-values are

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[19] To check the assumption of linearity, a scatterplot of attention$_{labels}$ against understanding score was plotted. This indicates a negative linear relationship between the variables. Independence of residuals is confirmed, as the Durbin-Watson statistic is 1.969. No outliers were detected. There was homoscedasticity, which was assessed by visually inspecting the plot of standardized residuals versus standardized predicted values. Residuals were approximately normally distributed as assessed by visual inspection of a normal probability plot.

[20] Understanding scores were not normally distributed, as assessed by Shapiro-Wilk's test (p < .05), and there were some outliers in the data, as assessed by inspecting the boxplot, but these were kept as the largest standard deviation was not larger than 5 times the smallest standard deviation (REF). There was homogeneity of variances for both understanding score right after the experiment (p = .862) and understanding score 2 weeks after the experiment (p = .848), as assessed by Levene's test for equality of variances.

reported. Understanding score after two weeks was higher for participants that were not exposed to an informational context compared to participants that were exposed to an informational context, a mean difference of .513, 95% CI [.142, .884], *p* = .007. This result is not in line with the expectations, as the boosts were expected to eventually increase understanding, and this understanding was expected to be maintained after 2 weeks. A visual representation of the differences in understanding score between the moment right after the experiment and two weeks later, for the two factors informational context and low-construal level message that were either present or not, can be found in Figure 14 below.
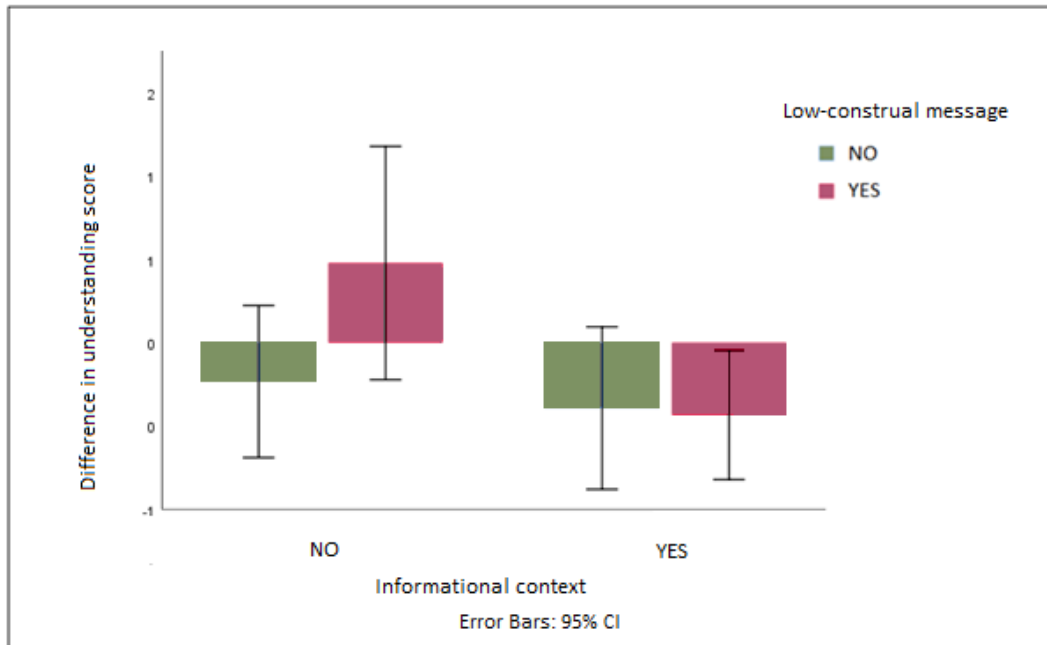
Figure 14. Clustered Bar Mean of difference in understanding score by Informational context by Low-construal message

Hypothesis 5 states that environmental concern increases attention for ecolabels on tea boxes. From assessing a simple scatterplot of environmental concern against attention$_{labels}$, no linear one-to-one relationship appeared (see Figure 15. below). Environmental concern does not increase attention$_{labels}$.
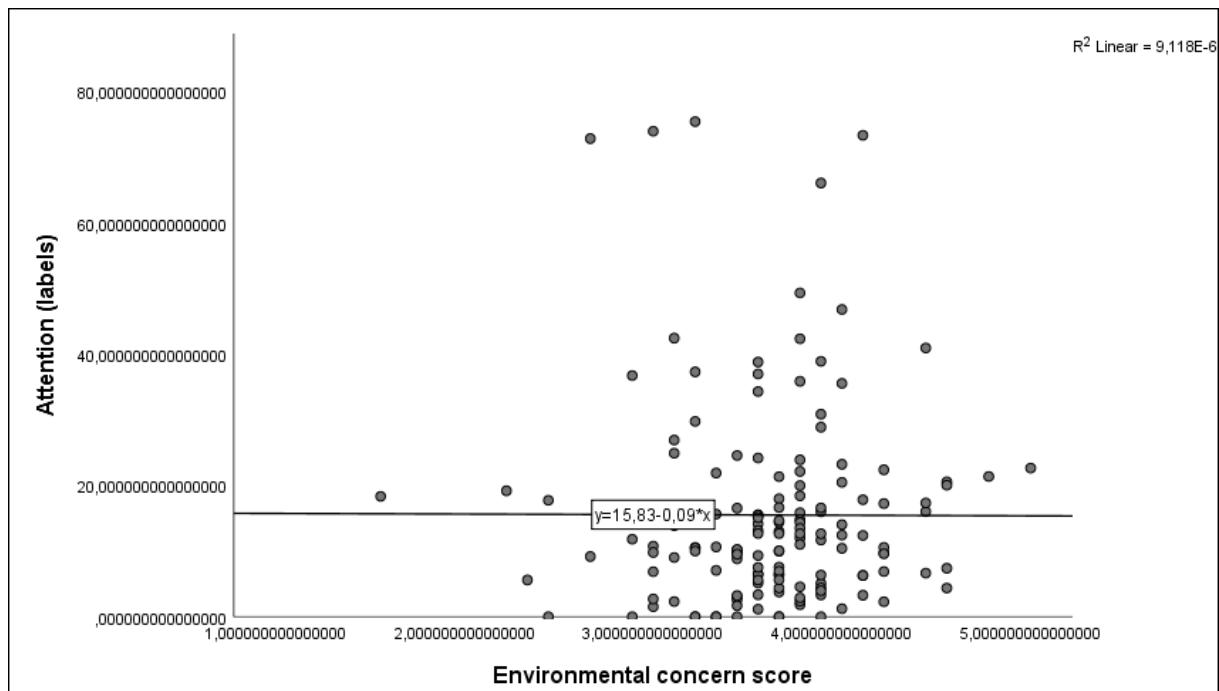
Figure 15. Simple Scatter of Attention_{labels} by Environmental concern

Hypothesis 6 states that environmental concern moderates the relationship between understanding of the ecolabel and general attitude towards the ecolabel; the relation between understanding and general attitude was stronger when environmental concern was higher and less strong when environmental concern was lower. This interaction (moderator) hypothesis was tested via multiple regression. A centering methodology was used to reduce multicollinearity. The results did not support the expectations of Hypothesis 6. 4.4% of the variance in general attitude_{label} was being accounted for by this model with environmental concern (NEP-score) centered, understanding centered, and environmental concern*understanding centered, which is statistically significant, $F(3, 146) = 3.277$, p = .023, adj. R^2 = .044. The p-value for the interaction between environmental concern and understanding was not significant (p = .845) and does herewith not show that environmental concern moderates the relationship between understanding and general attitude_{label}. The relationship between the two does not change as a function of environmental concern. Thus, Hypothesis 6 is not supported. Regression coefficients and standard errors can be found in Table 19 (below).

Table 19.

Summary of Multiple Regression Analysis: environmental concern as a moderator on the relationship between understanding of the ecolabel and general attitude_{label}

Variable	*B*	*SE_β*	*β*	*t*	*Sig.*
Intercept	3.469	.079		43.773	.000
Environmental concern (centered)	.336	.163	.168	2.058	.041
Understanding (centered)	.182	.083	.176	2.198	.030
Environmental concern x Understanding (centered) (moderator)	.031	.160	.195	.195	.845

Note. *B* = unstandardized regression coefficient; *SE_β* = Standard error of the coefficient; *β* = standardized coefficient

The effect that exposing participants to an informational context and/or a low-construal message has on attention$_{labels}$ was tested. Hypothesis 7 states that providing an informational context about the ecolabels that can be found in the assortment increases attention for ecolabels on tea boxes. Furthermore, according to Hypothesis 8, the low-construal message leads to an increased attention for the ecolabels on the tea boxes. Lastly, Hypothesis 9 states that the low-construal message and the informational context together, lead to more attention than the sum of the parts.

First, separate dummies were constructed for factor 1 (informational context), coding participants that were exposed to the informational context with a 1 and participants that were not with a 0. Then, a dummy was constructed for factor 2 (low-construal message), coding participants that were exposed to the low-construal message with a 1 and participants that were not with a 0. Lastly, an interaction term was included, for which participants that were exposed to both the informational context and the low-construal message were coded with a 1, and all other participants with a 0. Multiple linear regression was performed to assess their effects on attention$_{labels}$.[21] The multiple regression model did not statistically significantly predict attention$_{labels}$, $F(3, 146) = 2.418$, $p = .069$, adj. $R^2 = .028$. However, both the low-construal message and the interaction term added statistically significantly to the prediction. In this model, the interaction term denotes a decrease in attention$_{labels}$ of 10.699 ($p = .029$), and exposure to a low-construal message increases attention$_{labels}$ with 9.009 ($p = .009$). Herewith, Hypothesis 8 is supported, and Hypothesis 7 and 9 are not supported. Standard errors and regression coefficients can be found in Table 20. below.

Table 20.

Multiple Regression Analysis: comparing two factors and their interaction term for effect on attention$_{labels}$

Attention$_{labels}$	B	95% CI for B		SE_β	β	R^2	Adj. R^2
		Lower Bound	Upper Bound				
Model						.047	.028
Constant	11.301**	6.526	16.077	2.416			
Informational context	4.705	-2.048	11.458	3.417	.156		
Low-construal message	9.009*	2.256	15.762	3.417	.299*		
Interaction term	-10.699*	-20.315	-1.083	4.866	-.304*		

Note. Model = "Enter" method in SPSS Statistics; B = unstandardized regression coefficient; SE_β = Standard error of the coefficient; β = standardized coefficient.

*$p < .05$. **$p < .001$

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[21] There was independence of residuals, as assessed by a Durbin-Watson statistic of 1.926. There was homoscedasticity, determined by inspecting the plot of studentized residuals versus unstandardized predicted values visually. No evidence of multicollinearity was found, as assessed by tolerance values greater than 0.1. There were no leverage values greater than 0.2, and no values for Cook's distance above 1. The assumption of normality was met, as assessed by a Q-Q Plot.

Figure 16. below compares the hypothesised effect of the 2 factors and their interaction term to the observed effect.
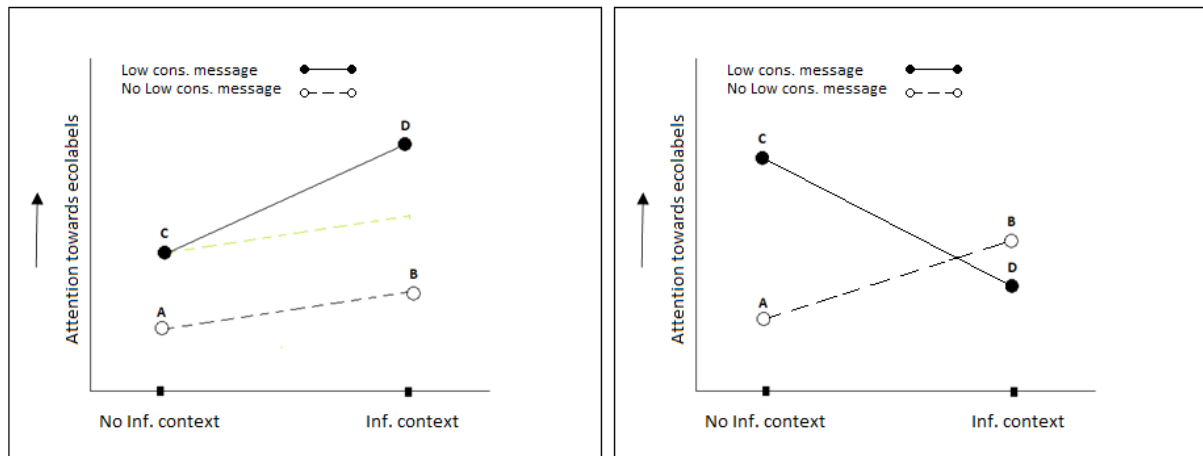
Figure 16. Overview hypothesized (left) and observed (right) attention$_{labels}$ per condition

A visual representation of the 2x2 between-subjects factorial ANOVA results can be found in Figure 17 below.
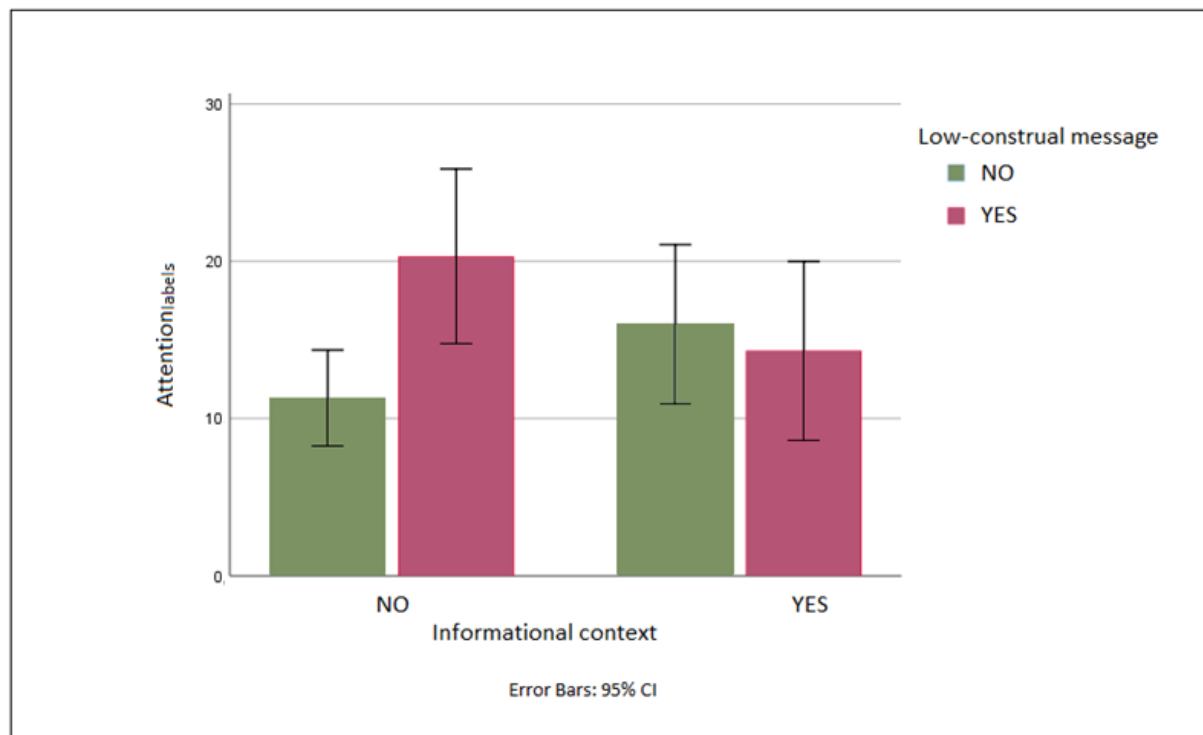
Figure 17. Clustered Bar Mean of Attention$_{labels}$ by Informational context by Low-construal message

4.3 Exploratory analysis

In this paragraph, other possible explaining determinants of choice are explored. The explored determinants are attention$_{labels}$, environmental concern, trust and understanding. All relationships will be assessed using binomial logistic regression. Furthermore, the direct relationship between attention and general attitude$_{label}$ was studied.

4.3.1 Exploring possible determinants of choice

A binominal logistic regression was performed to assess whether there was an effect of attention$_{labels}$, environmental concern, trust and/or understanding on the likelihood that a participant chose a sustainable tea.[22] The logistic regression model was not statistically significant , X^2 (1) = 8.496, p = .075. The model explained 7.5% (Nagelkerke R^2) of the variance in sustainable choice and correctly classified 63.3% of cases. Sensitivity was 17.9%, specificity was 90.4%, positive predictive value was 52.6% and negative predictive value was 64.9%. Only attention$_{labels}$ was a statistically significant predictor variable (as shown in table 21.) Increasing attention$_{labels}$ was associated with an increased likelihood choosing a sustainable tea.

Table 21.

Logistic Regression Predicting Likelihood of sustainable choice based on attention$_{labels}$
environmental concern, trust and understanding

	B	SE	Wald	df	p	Odds Ratio	95% CI for Odds Ratio	
							Lower	Upper
Attention$_{labels}$	.034	.012	7.214	1	.007	1.034	1.009	1.060
Environmental concern	.140	.352	.158	1	.691	1.150	.577	2.293
Trust	.008	.340	.001	1	.980	1.009	.518	1.965
Understanding	.067	.190	.127	1	.722	1.070	.738	1.551
Constant	-1.753	1.757	.995	1	.319	.173		

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[22] Linearity of these four continuous variables with respect to the logit of the dependent variable was studied via the Box-Tidwell (1962) procedure. All four independent variables are linearly related to the logit of (sustainable) choice. No outliers were detected.

4.3.2. Relation attention and general attitude$_{label}$

A linear regression was run to examine the effect of attention$_{labels}$ on general attitude$_{label}$ (see Figure 18. below).[23] Attention did not statistically predict general attitude$_{label}$, $F(1, 148) = .617$, $p = .433$. Attention accounted for .4% of the variation in general attitude$_{label}$ with adjusted $R^2 = -.3\%$, a trivial effect size according to Cohen's (1988) classification.
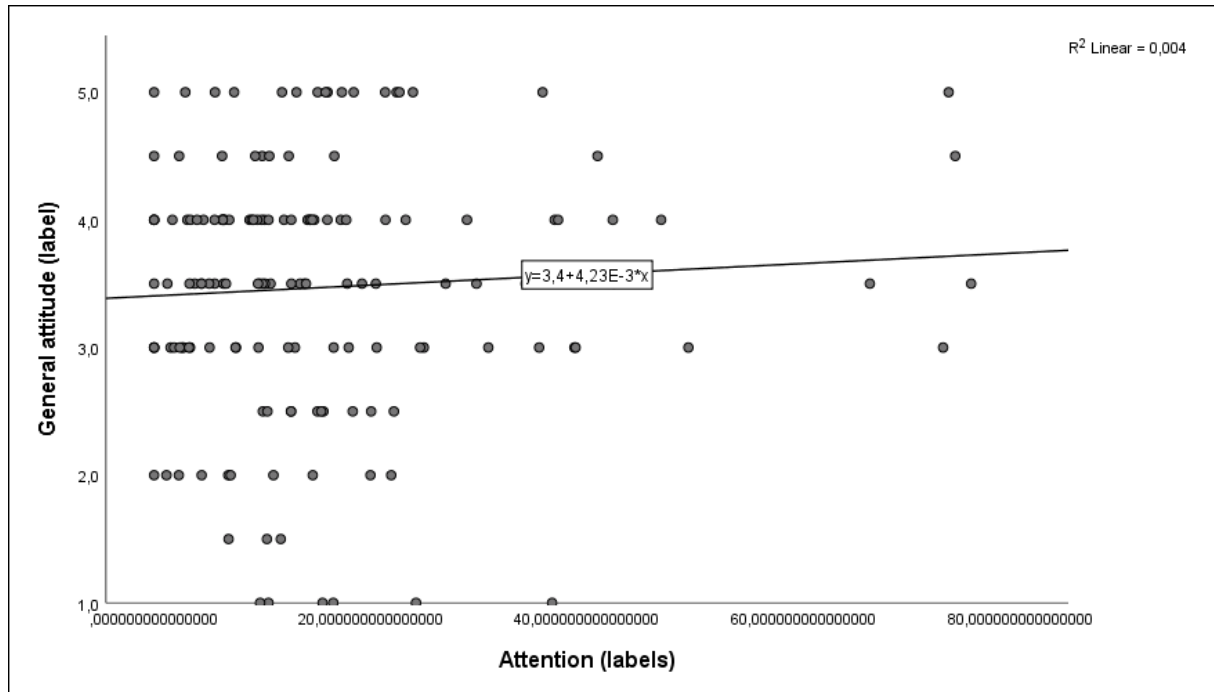
Figure 18. Simple Scatter of General attitude$_{label}$ score by Attention$_{labels}$

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[23] Linearity between attention$_{labels}$ and general attitude$_{label}$ score was established by visual inspection of both a scatterplot. There was independence of residuals, as assessed by a Durbin-Watson statistic of 1.998. There was homoscedasticity, as assessed by visual inspection of a plot of standardized residuals versus standardized predicted values. Residuals were normally distributed as assessed by visual inspection of a normal probability plot.

5. Conclusion

This study focussed on exploring when and how boosting impacts consumer choice for a sustainable option, in a tea assortment. In a 2x2 between-subjects design, two boosting-variations were tested on their effectiveness on attending to RFA labels in a tea assortment, and their ability to predict choosing a tea box with the RFA label. Furthermore, the decision-making process leading up to this choice has been studied.

First, providing an informational context in the form of a banner did not increase sustainable choice, nor did introducing a low-construal message, and neither did combining the two together. A low-construal message independently increased attention$_{labels}$ in the tea assortment, thereby supporting Hypothesis 8. However, an informational context and a combination of the informational context and low-construal message did not increase attention. The combination led to an increase in attention$_{labels}$ that was even smaller than the informational context on its own, which goes against the expectations. Hypothesis 7 (providing an informational context about the ecolabels that can be found in the assortment increases attention for ecolabels on tea boxes) and 9 (the low-construal message and the informational context together, lead to more attention than the sum of the parts) can therefore not be supported. A higher environmental concern does not lead to an increase in attention$_{labels}$, hereby not supporting Hypothesis 5. Attention$_{labels}$ did not increase the understanding and memorizing of these labels, which means Hypothesis 4 is not supported either. Furthermore, a better understanding of the RFA label did lead to a more positive general attitude towards the label, although the effect size was small. Hypothesis 2 is herewith supported. Trust did not seem to moderate the relationship between understanding of the RFA label and attitude towards the ecolabel, and neither did environmental concern, meaning that Hypothesis 3 and 6 were not supported. Understanding did not differ between the four groups, indicating that transparency of sustainable choices was not increased. Lastly, it appeared that a positive general attitude towards the ecolabel did not increase the probability of choosing a tea with the RFA label. Exploratory analyses were conducted to explore other possible explaining determinants of choice. Environmental concern, trust in the RFA label and understanding of the RFA label did not predict sustainable choices. However, attention$_{labels}$ did: a higher attention$_{labels}$ score lead to an increased chance of sustainable choice.

As a third of the tea-options in the assortment has the RFA label on the box, it is expected that if this label does not play a role in decision-making, a third of the total of tea choices will have an RFA label. For participants exposed to an informational context, a low-construal message, or both, where an increased amount of sustainable choices was expected, still only approximately a third of all choices contained the RFA label. Whether boosting increases sustainable choice in a tea assortment remains inconclusive. This is possibly due to the fact that this boost did not work as a boost, as understanding was not higher for participants that were 'boosted' compared to the control group, and the information was not remembered well after 2 weeks. An overview of the hypotheses and exploratory analysis can be found in Figure 19. below.
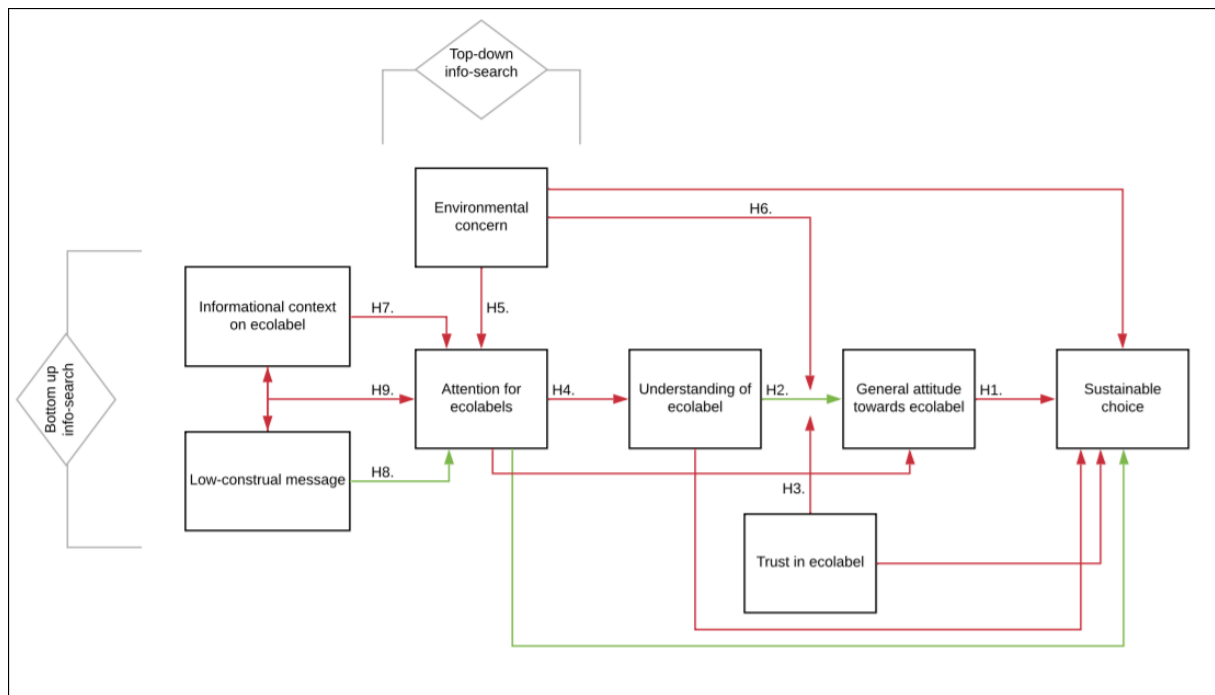
Figure 19. Conceptual framework: significant predictions (green) and non-significant predictions (red)

6. Discussion

6.1 Discussion of findings

The informational context and the low-construal message were expected to cause variation in attention$_{labels}$ and eventually one's choice of tea. One issue that arose was that not everyone had seen the banners on which these messages were printed. The manipulation check showed, however, that there were no differences in attention$_{labels}$, understanding, general attitude$_{label}$ and choice between those who fixated and those who did not fixate on the banner. One explanation might be that the VR equipment only measures central vision and does not record peripheral vision. Peripheral vision is the domain of vision that occurs outside of the point of fixation (Strasburger, Rentschler & Juttner, 2011). Thus, even when fixation on the banners is not recorded, participants still could have seen the banners. The banner with only the low-construal message contains an image and not too much other information, which makes it likely that this banner is especially visible and recognizable, without having to look at it directly.

Most expected effects were not found. However, means per group did seem to move in the expected direction; the mean attention$_{labels}$ was quite substantially higher for participants with a printed banner compared to the control group, but only for participants exposed to the low-construal message on its own, attention$_{labels}$ was significantly higher. This finding is especially remarkable since this group exhibited the lowest environmental concern (although not statistically significant, considering randomization was successful). As literature suggests, it is likely that a low-construal message makes future benefits more concrete and salient. Herewith, the intangibility of sustainability is tackled, which might have increased attention towards the ecolabels. However, having a low-construal message as well as an informational context the banner, only led to a slightly higher mean attention$_{labels}$, which was not a significant difference. A possible explanation would be the occurrence of information overload. Information overload happens when the consumer is exposed to too much information, causing the consumer to no longer integrate the information into the decision-making process (Eppler & Mengis, 2004). This effect could possibly cancel out the effect of the intervention, when this intervention includes both the informational context and the low-construal message, and herewith attention$_{labels}$ is not increased. Providing an informational context was expected to increase attention towards ecolabels as well, which was not the case in this current study. This assumption was, however, mainly based on similar studies that focused on nutrition labelling (Graham et al., 2015; Graham et al., 2017) instead of ecolabeling. This might have a different effect on consumer behaviour.

A higher environmental concern did not directly lead to a higher attention$_{labels}$ score. This could be explained by the attitude-behaviour gap; environmental concern does not translate to the behaviour of actively searching for a sustainable tea. The boosts failed, as no differences in understanding across groups were observed. A higher attention$_{labels}$ did not lead to an increased understanding of the ecolabel. The increase in attention$_{labels}$ due to exposure to the low-construal message on its own did not translate into an increased understanding. This banner, however, did not provide all the information needed to answer all 'understanding questions' correctly, possibly explaining this lack of increase in understanding. A better understanding of the RFA label does seem to lead to a more positive general attitude$_{label}$, although the effect size is very small. Other variables could possibly explain variance in general attitude$_{label}$, which will be discussed later as a part of the exploratory analysis. Neither trust, nor environmental concern moderates the relationship between understanding

and general attitude$_{label}$. This suggests that a high environmental concern and high trust in the label are no prerequisites for a better understanding to lead to a more positive general attitude$_{label}$. This could possibly be explained by the way general attitude$_{label}$ is measured; one might strongly agree with the statement that, all other things being equal, they would prefer/appreciate a tea with the RFA label (more) compared to a tea without it. This however, does not mean they trust the label or have a high environmental concern. Maybe they trust the label only a little, but still would definitely prefer a tea that has the label on the box as it is better than no ecolabel at all. Maybe they have a relatively low environmental concern, but if all other things are equal, they still think a tea with the RFA label is better than one without it.

A positive general attitude$_{label}$ did not increase the probability of choosing a product with the RFA label. Two possible explanations for this will be discussed briefly. First, general attitude$_{label}$ is measured as 'All other things being equal, I would prefer/appreciate a tea with this ecolabel (more) compared to a tea without this ecolabel'. Perhaps, all things that were not equal (flavour, brand, etc.) weighed more heavily than having an ecolabel. Second, it could suggest that the attitude-behaviour gap is in place; even though one has a positive attitude towards the label, when a decision has to be made, this attitude is not necessarily reflected in the actual choice.

Furthermore, the difference in understanding scores for participants that were not exposed to an informational context was significantly higher than that of participants that were exposed to the informational context. This could possibly imply that the information overload effect plays a role here as well. Participants that were only exposed to the low-construal message were the only group that had an increased mean understanding score after 2 weeks, instead of a decreased mean understanding score. Maybe, the low-construal message resonated with the participants to a certain extent that they became more engaged with it and wanted to lookup more about it after the experiment. For participants that were also exposed to the informational context, this was possibly not the case due to this large amount of information, hindering the participants from attending to the low-construal message. Thus, the participants exposed to the low-construal message alone appeared to have been activated to search for the labels during the VR experiment (hence the higher attention$_{labels}$), meaning that a bottom up search was indeed induced, but this activated motivation might have still been present after participating in the experiment, hence the higher understanding scores after 2 weeks.

As the effect size of the relationship between understanding and general attitude$_{label}$ is small, there could be other variables that explain general attitude$_{label}$. This is why the direct relationship between attention$_{labels}$ and general attitude$_{label}$ is studied in the exploratory analysis. For a successful boost, it is likely that a better understanding of the RFA labels would be found, but as understanding did not differ between groups, the interventions might not have been true boosts after all. If increased attention$_{labels}$ could increase the general attitude$_{label}$ score of a product with the RFA label, this suggests that the interventions were more similar to nudges, for which developing decision-making competencies does not play that large a role in the decision-making process. However, no relation between attention and general attitude$_{label}$ was found. Attention$_{labels}$ increased sustainable choice, but this is likely to be caused by the fact that the RFA labels were close to the 'choose' button of the sustainable choices. Thus, participants' eyes might have crossed the label as they were trying to focus on this button.

As mentioned in the introduction, the purchase of food is mostly a low involvement activity, resulting in automatic decisions based on the human mental system 1. For sustainable behaviour to occur, decisions should be based on the human mental system 2 (Kahneman, 2003). It is likely that participants remained to base their decisions on the first human mental system. This is supported by possible reasons that some labelled teas are chosen more often than expected than others. The sustainable Lipton green tea is a very popular choice amongst all groups, which can be explained by its familiarity: Lipton is known for its iced teas, their green ice-tea is also sold in many Dutch supermarkets and canteens. Pickwick rooibos was an extremely popular tea compared to all other teas, despite of the condition one is in. This could be explained by the fact that it was placed at eye-level, as this is the superior height in retail (Berkhout, 2019). Therefore, if a consumer would be determined to choose a Rooibos tea, it is likely that they chose Pickwick. The other sustainable Pickwick tea is also always chosen more often than expected. This can also be explained by the fact that Pickwick is the most chosen brand and the one that people drink most often as well. The opposite goes for sustainable Hoogvliet teas, they are never chosen more often than expected, but this brand is the least popular. People seemed to choose what they know, decisions are made automatically without taking new information into account.

6.2 Limitations and future research

This study encountered several limitations, which will be acknowledged next. First, the large differences in tea brands that participants drink most often and tea brand choice could be considered a limitation. There are significant differences between groups in terms of the tea brand they self-reportedly drink most often. As all other variables did show that participants were randomly assigned to the different groups, this observation seems odd. It suggests that this variation should be caused by either a very rare coincidence, or by the manipulation. In the group that was exposed to both the informational context and the low-construal message (group D), private label was chosen least often. The banner that was presented to this group is also the only one that is printed all the way to the bottom of the shelf, as the largest amount of information is placed on this banner, leaving the top of the banner rather empty. This could have diverted the participants from the top shelf; the shelf with the private label teas. Additionally, the control group has a low count for Pickwick and a high count for private label, compared to the other groups. The banner for this group is empty, which does not lead participants to a specific row and specifically, does not lead them away from the private label. If the participants have not actively looked at the private label teas, the other teas might have been more salient in their memory when they were asked what tea brand they drink most often. The tea they have chosen in the VR environment might be influenced by this also. This is a limitation to the study as this might have caused a difference in visibility of sustainable choices within one's favourite flavour. The data on the percentages of attention paid to the choose-buttons for each brand does support this possible explanation, as the least attention towards the private label teas was measured for group D. However, whether this shift in attention is indeed caused by the banners and how they are placed relative to how the brands are placed in the assortment, remains speculation.

Furthermore, some trade-offs for making a choice were inconspicuous through the data or were not included in this current study at all. One of the barriers to sustainable consumer food choice mentioned by Grunert (2011) is that eco-information is traded off against other criteria, such as price or taste. Consumers might not be willing to pay extra for a brand that has an ecolabel, or someone else would rather choose a tea flavour or brand that tastes better to them or is more familiar to them instead of

choosing a tea for its ecolabel. Price was not included in this study, and in-depth information on the trade-off between flavour, brand, time, and ecolabel is unavailable from the data at a realistic level. If an individual has a certain flavour tea in mind already, they might have chosen their favourite brand instead of the brand that has the ecolabel on top of the box. However, for some participants, there might not have been a combination of the preferred flavour and the preferred brand with an RFA label. This means that if someone wanted to choose a product with an ecolabel, they might have had to choose a tea that is not their favourite flavour or not their favourite brand. There was no information provided on how important brand and/or flavour were in making the choice, only information about the brand and flavour that participants drink most often was retrieved. However, the latter did not necessarily overlap with the chosen tea from the assortment, as price was, for example, not included as a factor in this experiment. One might usually drink cheaper teas but would, if price does not play a role, choose a more expensive tea from an assortment. It might, therefore, be useful to get more qualitative data on the decision process or trade-off when choosing products with or without the ecolabels in future studies. Future studies should also retrieve additional qualitative data in order to find more detailed information about how consumers exactly perceive the information that is presented on the banners.

Possible limitations for the experimental conditions will be discussed next. This will be done by comparing on the one hand conditions that are identical to a real supermarket, herewith conserving external validity, and on the other, a simplified environment that secures internal validity. In order to obtain realistic behaviour and answers from participants that would be similar to when they would be in a real store environment, the stimuli were kept as close to reality as possible. The limited assortment in this current study, however, might have made the choice-situation less realistic compared to a real-life shopping trip. This includes various removed tea brands, which possibly have other sustainability labels, flavours, and removed price tags. A substantial part of all participants reported that the tea brand and flavour that they drink most often were not present in the assortment, which would make their choice less close to a real-life situation for them. This could have influenced how seriously these participants took the task of choosing a tea. These suggestions would increase the external validity of the results. However, when increasing the assortment, the noise from other variables that might influence choice or attention$_{labels}$ is increased as well. A decrease in internal validity is herewith inevitable. To protect the internal validity, one could argue that conditions that include fewer choice options would be a better practice. This allows there to be more sub-groups within experimental conditions for which other randomly chosen tea boxes have an ecolabel, or maybe an assortment with two brands, for which each experimental condition has a subgroup for which the one brand has the ecolabel, and another subgroup for which the other brand has the ecolabel. The latter would make it more clear which brand has the ecolabel on top, and it would decrease the influence of brand-preference. A more simple experiment would, however, decrease external validity of the results. As the current study is a combination of the two scenarios above, this is arguably still the best choice. The conditions are close enough to reality to be able to predict behaviour in a real-life setting, while still cancelling out noise that would interfere with the internal validity.

Furthermore, limitations presented themselves regarding how attention is measured. Due to how close the label is to the 'choose' button, attention$_{labels}$ might have been measured for participants that did not actually look at the label. For participants that chose a sustainable tea, it is a frequently reoccurring action that they look at this label right before looking at the choose-button. Almost all

participants that did this, did not recall seeing the RFA label, which means that this is likely a measurement-error. Future studies should make sure the track areas do not have to be as close together, by for example moving the choose button further away from the tea. The fact that not all people that fixated on the RFA labels according to the VR equipment also self-reportedly recalled seeing it, suggest another possible measurement-limitation for attention. However, this could also be explained by the relatively low threshold for measuring attention of 80 milliseconds, as well as the possibility that participants forgot what the label they saw looked like exactly.

Despite the lack of significance, the means attention$_{labels}$ do seem to move in the right direction. This lack of significance is (also) due to the large standard deviations, as the measured attention$_{labels}$ is spread out and most data points are not close to the mean. Therefore, a larger sample size is needed to acquire statistical significance. However, a relatively small sample size is inherent to this type of research, as it requires people to be at a certain location in order to use the VR glasses. Another way to decrease the risk of the results not being significant when actually there is an effect, is to decrease the chance of obtaining large standard deviations. This could be achieved by setting the threshold for attention$_{labels}$ at a higher number than 80 milliseconds. Another way would be to prohibit looking around the store for too long by telling the participants that they cannot turn all the way around, so that they will only look at the assortment they have to choose from. Furthermore, a relatively high percentage of the 12 outliers in attention$_{labels}$ chose 'working' instead of 'studying' as their occupation. By only including students instead of people who are working, there are possibly less outliers with very high attention$_{labels}$ scores, which means the data would be less spread out as well. Students participate in studies all the time and might therefore be less motivated to take this one study seriously, and for people who are working it might be more interesting as it differs from their day-to-day activities. Lastly, making the banner more visible by increasing its size, or designing the VR environment in a way that when one enters the supermarket, they have to go past the banner in order to get to the assortment, might decrease the standard deviations. When the banner cannot be missed, it is likely to increase attention towards the labels and herewith decreasing the amount of participants that did not see the labels at all.

Some limitations due to convenience-sampling are discussed next. As a quite substantial part of the participants rarely or never purchases tea, the results might not reflect what people who actually would be in a similar situation (choosing a tea) would do. Therefore, ideally all participants would at least sometimes buy tea. To decrease the chances of a type 2 error within the hypotheses that include environmental concern, a sample with larger differences within environmental concern scores is needed. An ideal sample would not only include people in and around Wageningen University, as the current sample is likely already frequently exposed to themes such as sustainability, possibly resulting in a high environmental concern.

Lastly, future research could investigate boosting, especially while using the low-construal message, in the context of different product categories, such as coffee, fish, or meat. Boosts might work differently across different product categories.

6.3 Practical implications

In this study, providing an informational context and/or a low-construal message did not contribute to an increase in sustainable choice. The results of this study, however, do contain lessons that can be used to build new retail interventions. For supermarkets that want to increase transparency regarding the sustainability of their products, the effect that a low-construal message might have on increasing attention$_{labels}$ should be recognized. Also, the risk of information overload should be considered, as including too much information on the banners did not positively affect attention$_{labels}$ and eventually sustainable consumer choice. Supermarkets could, for example, provide the low-construal message on a banner, but make a QR-code available which makes it easy to lookup more information about the label if the consumer is interested. Furthermore, if providing a low-construal message actually leads consumers to research more information for themselves later on, this means that it actually is a boost in which people take an interest and agency over their decisions, compared to a situation in which consumers are only influenced in the moment and no long-term effects are achieved. The results also show that drawing consumer's attention towards ecolabels is a challenge. Consumers cannot take an ecolabel into account when making a decision if they do not see the label in the first place. For retail, this means that a banner might not be enough. Attention should be directly drawn to the labels, by for example having an enlarged copy of the label right next to the sustainable teas, to emphasize the tea has a label on the box. Furthermore, brand preference likely diminishes the chance for an ecolabel to influence consumer choice, as discussed in paragraph 6.1. Retail should focus on making the label more salient than the brand, and on making choosing a tea with an ecolabel a more attractive option. Lastly, the findings of this study provide practical insights for virtual reality research methods to investigate consumer decision making in a retail setting.

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Appendix A – NEP Scale questions

The shortened NEP Scale (Cordell et al., 2002).

Do you agree or disagree that:
1. Human skill and resources will insure that we do not make the earth unliveable
2. Humans are severely abusing the environment
3. Humans have the right to modify the natural environment to suit their needs
4. Humans were meant to rule over nature
5. Humans will eventually learn enough about how nature works to be able to control it
6. If things continue on present course there will soon be a major ecological catastrophe
7. The balance of nature is delicate and easily upset
8. To so-called environmental crisis has been greatly exaggerated
9. We are approaching the limit to the number of people this earth can support
10. When humans interfere with nature it often produces disastrous consequences

Appendix B – Questionnaire

WAGENINGEN UR
For quality of life

Voor deze enquête hebt u een wachtwoord nodig.

Afronding van de enquête
0%   100%

→

WAGENINGEN UR
For quality of life

Bedankt voor uw participatie in mijn studie. De volgende vragen vormen het laatste onderdeel van uw deelname, en het invullen hiervan zal niet meer dan 5 minuten kosten. Vul alstublieft eerst uw deelnemersnummer in, welke u op een post-it van de onderzoeker hebt gekregen.

Afronding van de enquête
0%   100%

→

Welke thee heeft u gekozen in de VR supermarkt?

○ Hoogvliet huismerk Earl Grey

○ Hoogvliet huismerk English Breakfast

○ Hoogvliet huismerk Bosvruchten

○ Hoogvliet huismerk Groene thee

○ Hoogvliet huismerk Groene thee citroen

○ Hoogvliet huismerk Rooibos

○ Pickwick Earl Grey

○ Pickwick English Breakfast

○ Pickwick Bosvruchten

○ Pickwick Groene thee

○ Pickwick Groene thee citroen

○ Pickwick Rooibos

○ Lipton Earl Grey

○ Lipton English Breakfast

○ Lipton Bosvruchten

○ Lipton Groene thee

○ Lipton Groene thee citroen

○ Lipton Rooibos

○ Ik weet het niet meer

Afronding van de enquête

0% [■   ] 100%

→

Heeft u keurmerken gezien op de theedoosjes in de virtuele supermarkt? Zo ja, welke?

- ☐ Rainforest Alliance
- ☐ Beter Leven
- ☐ UTZ
- ☐ Biologisch
- ☐ Fairtrade
- ☐ Geen van deze keurmerken

Afronding van de enquête

0% ▮▮▮▯▯▯▯▯▯▯▯▯ 100%

→

Hieronder staan verschillende uitspraken over keurmerken. Kies alstublieft voor welke keurmerken de volgende uitspraken **volgens Milieu Centraal** gelden. U mag meerdere antwoorden aanvinken.

	Rainforest Alliance keurmerk	Beter Leven keurmerk	UTZ keurmerk	Biologisch keurmerk	Fairtrade keurmerk	Geen van de keurmerken
Dit keurmerk staat voor dierenwelzijn	☐	☐	☐	☐	☐	☐
Dit keurmerk is transparant	☐	☐	☐	☐	☐	☐
Dit keurmerk staat voor de bescherming van het milieu	☐	☐	☐	☐	☐	☐
Dit keurmerk staat voor goede arbeidsomstandigen van locale populaties	☐	☐	☐	☐	☐	☐
Dit keurmerk is een top keurmerk	☐	☐	☐	☐	☐	☐

Afronding van de enquête

0% ▓▓▓░░░░░░░░░░ 100%

→

De volgende uitspraken gaan over het Rainforest Alliance keurmerk. Vink alstublieft telkens het antwoord aan dat het meest overeen komt met uw reactie op de uitspraak.

	Helemaal niet mee eens	Niet mee eens	Niet mee eens en niet mee oneens	Mee eens	Helemaal mee eens
Dit keurmerk is oprecht toegewijd aan het beschermen van het milieu	○	○	○	○	○
Het meeste van wat het keurmerk zegt over de producten waar het keurmerk zich op bevindt is waar	○	○	○	○	○
Ik denk dat een deel van wat het keurmerk beweert overdreven is	○	○	○	○	○
Als het keurmerk iets beweert of een belofte over een product maakt, is het waarschijnlijk de waarheid	○	○	○	○	○
Als de thee voor de rest hetzelfde is, gaat mijn voorkeur uit naar een thee met dit keurmerk ten opzichte van een thee zonder dit keurmerk	○	○	○	○	○
Als de thee voor de rest hetzelfde is, zou ik een thee met dit keurmerk meer waarderen dan een thee zonder dit keurmerk	○	○	○	○	○

Afronding van de enquête

0% [███   ] 100%

→

Hoe vaak koopt u thee?

- ○ Nooit
- ○ Zelden
- ○ Soms
- ○ Vaak
- ○ Heel vaak

Welke van de onderstaande thee merken drinkt u het vaakst?

- ○ Lipton
- ○ Pickwick
- ○ Huismerk
- ○ Alle drie de merken even vaak
- ○ Geen van de bovenstaande merken

Welke theesmaak drinkt u het vaakst?

- ○ Earl Grey
- ○ English Breakfast
- ○ Bosvruchten
- ○ Groene thee
- ○ Groene thee citroen
- ○ Rooibos
- ○ Alle zes de smaken even vaak
- ○ Geen van de bovenstaande smaken

Afronding van de enquête

0%　[■■■■　　　　]　100%

→

Hieronder staan verschillende uitspraken. Vink alstublieft telkens het antwoord aan dat het meest overeen komt met uw reactie op de uitspraak.

	Helemaal niet mee eens	Niet mee eens	Niet mee eens en niet mee oneens	Mee eens	Helemaal mee eens
De vindingrijkheid van de mens zal ervoor zorgen dat we de aarde niet onleefbaar maken	○	○	○	○	○
Mensen maken sterk misbruik van het milieu	○	○	○	○	○
Mensen hebben het recht om de natuurlijke omgeving aan te passen om hun eigen behoeftes te kunnen nastreven	○	○	○	○	○
Mensen zijn bestemd om te heersen over de natuur	○	○	○	○	○
Mensen zullen uiteindelijk genoeg leren over de werking van de natuur om in staat te zijn deze te beheersen	○	○	○	○	○
Als de zaken zich op de huidige manier voortzetten, zullen we binnenkort te maken krijgen met een enorme ecologische catastrofe	○	○	○	○	○
Het natuurlijke evenwicht is heel delicaat en gemakkelijk verstoord	○	○	○	○	○
De zogenaamde ecologische crisis wordt sterk overdreven	○	○	○	○	○
We zijn de limiet aan het bereiken van het aantal mensen dat de aarde kan dragen	○	○	○	○	○
Als mensen de natuur bewerken, brengt dit vaak rampzalige gevolgen met zich mee	○	○	○	○	○

Afronding van de enquête

0% ████ 100%

→

WAGENINGENUR
For quality of life

Wat is uw leeftijd?

[_____]

Gender: ik identificeer mij als ...

◯ Man

◯ Vrouw

◯ Anders

Wat is uw hoogst behaalde opleidingsniveau?

◯ Basisschool

◯ Middelbare school

◯ Bachelors diploma

◯ Masters diploma

◯ PhD of hoger

◯ Anders

Wat doet u op dit moment in het dagelijks leven?

◯ Ik ben student

◯ Ik ben werkende

◯ Anders

Afronding van de enquête
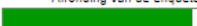0% [████████   ] 100%

→

WAGENINGENUR
For quality of life

Probeer kort te omschrijven waar u denkt dat deze studie over ging.

[   ]

Afronding van de enquête
0% [███████████   ] 100%

→

Hoe heeft u gehoord van deze studie?

- ○ Door een flyer
- ○ Door een email
- ○ Doordat ik langs het lokaal liep
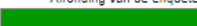- ○ Via via
- ○ Via sociale media
- ○ Anders

Afronding van de enquête

0% [████████   ] 100%

→

Ontzettend bedankt voor het deelnemen aan deze studie! Ik zou graag nog **5 korte vragen sturen over ongeveer 2 weken**, het beantwoorden hiervan zal **niet meer dan 1 minuut** van uw tijd in beslag nemen. Als u deze vragen nog zou willen beantwoorden om me te helpen met het verkrijgen van een completere dataset, wil ik u vragen uw email adres achter te laten in het **onderstaande tekst vak**. Mocht u verder nog vragen hebben over dit onderzoek kunt u deze aan mij stellen of kunt u mailen naar simone.vreeburg@wur.nl

[   ]

Bent u bereid uw email adres achter te laten om uitgenodigd te worden voor andere studies?
Zo ja, vul deze alstublieft hieronder in en klik daarna op het pijltje rechts onderin.
Zo niet, klik dan meteen op het pijltje rechts onderin.

Door op het pijltje rechts onderin te klikken slaat u uw antwoorden op en wordt de questionnaire afgesloten. U kunt uw snack ophalen bij de onderzoeker en u krijgt ook te horen of u uw favoriete thee hebt gewonnen.

[   ]

Afronding van de enquête

0% [████████   ] 100%

→

Bedankt voor uw tijd om aan deze enquête deel te nemen.
Uw antwoord is geregistreerd.

Afronding van de enquête
0% 100%

Appendix C – Follow-up Questionnaire

Dit is de follow-up questionnaire van het VR onderzoek waar u ongeveer 2 weken geleden aan hebt meegedaan. Fantastisch dat u hebt aangegeven nog **5 korte vragen** te willen beantwoorden!

Zoals op het door u ondertekende formulier al was aangegeven, zal de verzamelde data van uw antwoorden gekoppeld moeten worden aan uw email adres. Dit zal enkel door mij (de onderzoeker) bekeken worden. De persoonlijke data (email adres) zal verwijderd worden voordat de data met andere onderzoekers gedeeld wordt. Uw deelname aan deze studie is geheel **vrijwillig**, wat betekent dat u er ook voor kunt kiezen de volgende 5 vragen niet in te vullen, zonder dat dit bestraft wordt.

Ik zou u graag willen vragen om eerst hieronder het email adres waarop u deze questionnaire toegestuurd hebt gekregen in te vullen. Het pijltje rechts onderin brengt u naar de vragen. Het beantwoorden van de vragen duurt ongeveer **1 minuut,** en ze staan allemaal op dezelfde pagina.

→

Hieronder staan verschillende uitspraken over keurmerken. Kies alstublieft voor welke keurmerken de volgende uitspraken **volgens Milieu Centraal** gelden. U mag meerdere antwoorden aanvinken.

	Rainforest Alliance keurmerk	Beter Leven keurmerk	UTZ keurmerk	Biologisch keurmerk	Fairtrade keurmerk	Geen van de keurmerken
Dit keurmerk staat voor dierenwelzijn	☐	☐	☐	☐	☐	☐
Dit keurmerk is transparant	☐	☐	☐	☐	☐	☐
Dit keurmerk staat voor de bescherming van het milieu	☐	☐	☐	☐	☐	☐
Dit keurmerk staat voor goede arbeidsomstandigheden van locale populaties	☐	☐	☐	☐	☐	☐
Dit keurmerk is een top keurmerk	☐	☐	☐	☐	☐	☐

→

Dit is het einde van de questionnaire. Bedankt voor het beantwoorden van de vragen!

Appendix D – Script VR briefing

Je krijgt **bezoek** en hiervoor moet je een thee uitkiezen in de supermarkt. Je krijgt een virtual reality bril op. Je krijgt een omgeving te zien met in het midden een blauw rondje: dit is het focuspunt en neemt op waar je naar kijkt. Het is dus van belang om bij het rondkijken je hoofd te bewegen en niet enkel je ogen te bewegen (*researcher explains this by pretending to have the VR glasses on and first only moving the eyes and then moving the head while keeping the eyes relatively still*). Eerst zie je de ingang van een supermarkt. Zoek naar het woord 'Start' en zeg hardop 'Start' als je deze gevonden hebt. Focus het blauwe rondje in je gezichtsveld hierop als je naar het schap wilt gaan. Start staat boven de ingang. Eenmaal in het schap kun je rustig rondkijken; **kijk vooral goed om je heen, je staat echt in de winkel.** Er kan uiteindelijk gekozen worden uit de merken en smaken thee waaronder de K van kiezen staat. Van boven naar beneden zijn de smaken hetzelfde en van links naar rechts de merken. Mocht je de smaak niet goed kunnen lezen, kun je naar de K onder de thee kijken, dus het blauwe rondje hierop richten. Kijk pas naar 'ja' als je deze thee wilt kiezen. Als je deze thee niet wilt kiezen kun je wegkijken of naar 'nee' kijken. Als je klaar bent om een keuze te maken, focus dan het blauwe rondje op de K van de desbetreffende thee. Kies de thee die je het meest aanspreekt ofwel je favoriete thee uit het assortiment. Kies dan voor 'ja'. Als je eenmaal naar 'ja' hebt gekeken, kom je in de virtuele versie van dit lokaal terecht. Daar zal je het woord 'einde' zien staan. Als je dit woord hebt gevonden, zeg het dan alsjeblieft hardop. Dan zal ik zeggen dat je de bril af kunt zetten en naar een computer kunt lopen om de questionnaire in te vullen. Daarbij wil ik nog vermelden dat je kans maakt om de gekozen thee te winnen en mee naar huis mag nemen, dus kies echt de thee die je wilt. Voor alle pop-up linkjes zal er minimaal 2.5 seconde gekeken moeten worden, maar vaak is dit langer in de praktijk.

Appendix E – Pictures store environment

Store environment control group
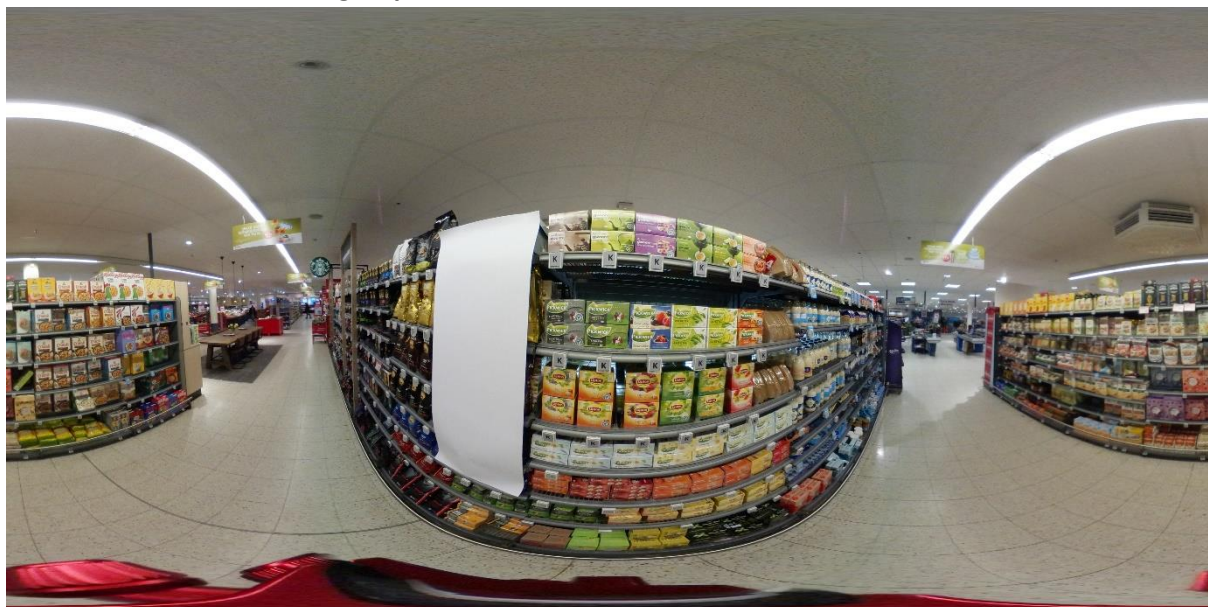
Store environment informational context

Store environment low-construal message

Store environment both informational context & low-construal message

Appendix F – Ethical briefing form text

Ethische verklaring:

Deze studie gaat over het kiezen van thee in de supermarkt. De data van deze studie zal gebruikt worden om mijn MSc thesis af te ronden bij de leerstoelgroep *Marketing and Consumer Behaviour*. Uw deelname aan deze studie is **geheel vrijwillig**, wat betekent dat u elk moment kan besluiten om niet meer deel te nemen, zonder dat dit bestraft wordt. De studie zal ongeveer **15 minuten** duren. De studie begint met het **virtual reality** (VR) deel waarop u de VR bril draagt en voor een virtueel supermarkt schap komt te staan. U wordt gevraagd hier een keuze te maken. Naderhand wordt u gevraagd een **questionnaire** in te vullen. In het VR-deel wordt waar u naar kijkt en uw keuze gemeten, en in de questionnaire uw antwoorden op de vragen. Uw antwoorden worden **confidentieel** behandeld en uw naam, adres of IP adres worden niet gevraagd.

Op het einde van de questionnaire kunt u vrijwillig uw email adres achterlaten als u ook nog mee wilt doen met een korte follow-up studie (een korte questionnaire) welke dan over 2 weken naar u toegestuurd wordt. Het invullen hiervan zal ongeveer één minuut duren. Hiervoor zal de verzamelde data van uw antwoorden gekoppeld moeten worden aan uw email adres. Dit zal **enkel door mij (de onderzoeker) bekeken worden**. De persoonlijke data (email adres) zal verwijderd worden voordat de data met andere onderzoekers gedeeld wordt. Op het einde zal ook gevraagd worden om uw email adres achter te laten als u op een mailinglijst wilt worden gezet welke benaderd wordt voor het meedoen aan andere studies. Deze data zal niet gelinkt worden aan uw andere antwoorden. Als u uzelf via de doodle hebt aangemeld, is dit opgegeven email adres direct na uw aanmelding al verwijderd.

Als u met bovenstaande akkoord gaat, wordt u verzocht het formulier te tekenen.

Appendix G – Factor analyses

Table G1.

Summary of principal component analysis results for all 16 items measuring
Environmental concern, trust and general attitude$_{label}$

Rotated Component Matrix[a]			
	Component		
	Environmental concern	Trust	General attitude$_{label}$
NEP 1	**.218**	-.040	.424
NEP 2	**.635**	-.081	.186
NEP 3	**.570**	-.140	.001
NEP 4	**.492**	-.098	-.011
NEP 5	**.257**	-.083	.347
NEP 6	**.554**	.134	.281
NEP 7	**.453**	.026	.077
NEP 8	**.572**	.123	.370
NEP 9	**.561**	.248	-.092
NEP 10	**.482**	-.130	.041
Trust 1	-.050	**.646**	-.060
Trust 2	-.062	**.790**	-.074
Trust 3	-.054	**.601**	.277
Trust 4	.044	**.690**	.017
General attitude$_{label}$ 1	-.184	.078	**.789**
General attitude$_{label}$ 2	.105	.081	**.751**

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 5 iterations.

Note. Factor loadings that seem to load on the same component appear in bold

Table G2.

Summary of principal component analysis results for 15 items measuring Environmental concern (NEP 1 removed), trust and general attitude_{label}

Rotated Component Matrix^a			
	Component		
	Environmental concern	Trust	General attitude_{label}
NEP 2	**.659**	-.079	.044
NEP 8	**.649**	.147	.167
NEP 6	**.617**	.135	.170
NEP 3	**.568**	-.128	-.153
NEP 9	**.507**	.200	-.048
NEP 4	**.506**	-.058	-.231
NEP 10	**.460**	-.184	.122
NEP 7	**.414**	-.062	.264
NEP 5	**.345**	-.028	.103
Trust 2	-.090	**.769**	.007
Trust 4	.043	**.688**	.013
Trust 1	-.045	**.654**	-.064
Trust 3	.030	**.634**	.184
General attitude_{label} 1	-.038	.063	**.842**
General attitude_{label} 2	.227	.050	**.797**

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

    a.   Rotation converged in 4 iterations.

Note. Factor loadings that seem to load on the same component appear in bold

Table G3.

Summary of principal component analysis results for 10 items measuring Environmental concern

Component Matrix^a	
	Component
	Environmental concern
NEP 1	.383
NEP 2	.667
NEP 3	.537
NEP 4	.463
NEP 5	.395
NEP 6	.620
NEP 7	.423
NEP 8	.681
NEP 9	.479
NEP 10	.438