Erasmus University Rotterdam

Erasmus School of Economics

MSc. BUSINESS & ECONOMICS

===

Disclosing the Issues of

Willingness to Pay for Eco-labels.

An Elucidative Study.

By

Jaap Liebregt

362001

Master Thesis

Faculty of Marketing

August 2017

Under supervisory of Associate professor Vardit Landsman-Schwarz

===

Abstract: The growing utilization of eco-labels on products is noteworthy: experiencing a surge of 500% since the nineties. However, few marketers have succeeded at commercializing eco-labels among consumers. Most researchers believe this is due to consumer confusion, implying that consumers do not understand the meaning of eco-labels. Unfortunately, few researchers have investigated why consumer confusion persists among eco-labels and what role green consumer characteristics might play in this matter. With questionnaires, data was collected and later on analyzed by using linear regression analyses. This thesis finds that confusion is prevalent among eco-labels that are utilized for animal and organic food products. Furthermore, it finds that differences exist among sources of consumer confusion, varying alongside demographic and psychographic green consumer dimensions. This thesis proposes multiple managerial guidelines marketers can employ to overcome consumer confusion, hence enabling them to generate higher returns on their eco-label investments.

PREFACE AND ACKNOLWEDGEMENTS

The master thesis was written to finalize the Master of Marketing at the Erasmus School of Economics. Due to my long-standing interest in green products, I was determined to assess the dynamics of green marketing for my thesis. Writing this thesis gave me great joy, energy and dedication to finalize my study at the Erasmus University Rotterdam.

The objective of this thesis was to provide an analytical framework as to why some consumers have low willingness to pay for eco-labels. The added value of the analysis stems from a lack of knowledge with marketing managers on the causes of this low willingness to pay. The insights of this thesis will help marketing managers out, or at least support them on the roadmap towards increasing willingness to pay for the eco-label they are utilizing.

I would like to express my gratitude to everyone who assisted me with carrying out the questionnaires, my friends and family for supporting me through the year, and Dr. Landsman-Schwarz as well for providing strong support, guidance and throughout with regard to writing qualitative content.

I wish you pleasant reading,

Jaap Liebregt
Rotterdam, august 31st, 2017

TABLE OF CONTENTS

LIST OF FIGURES, TABLES AND ANALYSES

CHAPTER 1
*
Introduction

Over the last 30 years, concerns about how consumerism effects the environment have risen and many consumers have opted to buy environmentally friendly products. In response, many companies have tried to market such products. In order to promote the ecological quality of these "green products", environmental labels are utilized to inform consumers of how the production and consumption of the products affects the environment. Despite great marketing efforts, however, many consumers are not willing to pay more for a product that comes with an "eco-label" (Teisl, Roe and Hicks, 2002; Loureiro and Lotade, 2005).

Scholarly literature offers several explanations for why consumers are not willing to pay more for products that come with eco-labels. Some researchers argue that consumers possess negative attitudes towards eco-labels, including skepticism and distrust. For instance, Delmas, Nairn-Birch and Balzarova (2013) have suggested that consumers are skeptical of eco-labels' ability to help nurture sustainable consumption, whereas Walker and Wan (2012) have demonstrated that consumers are suspicious of companies misusing eco-labels because they do not believe the companies are genuinely engaged in green business or environmental issues. The last and most widely adopted explanation for why consumers are not willing to pay more for products with eco-labels is consumers' lack of understanding of what eco-labels mean (Lohr, 1998; Galarraga Gallastegui, 2002). Moreover, many researchers cite "consumer confusion" as the major cause for this misunderstanding (Langer and Eisend, 2007; Horne, 2009; Brécard, 2014; Bleda and Valente, 2009). Consumer confusion is a confused state of mind in which a consumer does not understand what a brand attribute (such as an eco-label) means.

Unfortunately, there is no research investigating what causes consumer confusion over eco-labels; there is, however, research explaining what causes consumer confusion in general. It is believed that when consumers go shopping, they become confused when their brains are overloaded with stimuli from brands and they cannot structure this input (Turnbull, Leek and Ying, 2000). Brand-stimuli overload is therefore considered as the source of consumer confusion. Research literature suggests five sources of consumer confusion: brand choice overload (Broniarczyk, 2008), brand similarity

overload (Loke, Ross and Hinkle, 1986), lack of brand information (Jacoby, Kohn and Speller, 1973), brand information overload (Turnbull, Leek and Ying, 2000), and brand inconsistency overload (Jacoby and Hoyer, 1989).

But how does this contribute to our understanding of the causes of consumer confusion over eco-labels? Scholarly literature includes countless indications that the above-mentioned sources of confusion also pertain to eco-labels. Brécard (2014) has suggested that consumers have too many eco-labels to choose from; Tang, Fryxell and Chow (2004) have shown that many eco-labels have a similar appeal; while other researchers have argued that eco-labels lack information (Teisl, Rubin and Noblet, 2008), express too much information (Horne, 2009) or express inconsistent information (Hock, 2001). To sum up, consumer confusion occurs when sources of confusion are present, and there are countless examples of this among eco-labels.

Adding nuance to the picture is the fact that even when sources of confusion are present, not every consumer looking at eco-labels gets equally confused. Scholarship shows that some consumers experience more confusion than others because they are less capable of processing stimuli overload in their mind, making them more susceptible to sources of confusion. These people include, in particular, female, highly educated and socially involved people (Turnbull, Leek and Ying, 2000; Ackerman, 1989; Belk, 1975). This could further explain the strong presence of consumer confusion over eco-labels because most green consumers have these characteristics.

The scholarship discussed above, can be displayed with the following conceptual model:

Figure 1. Conceptual model
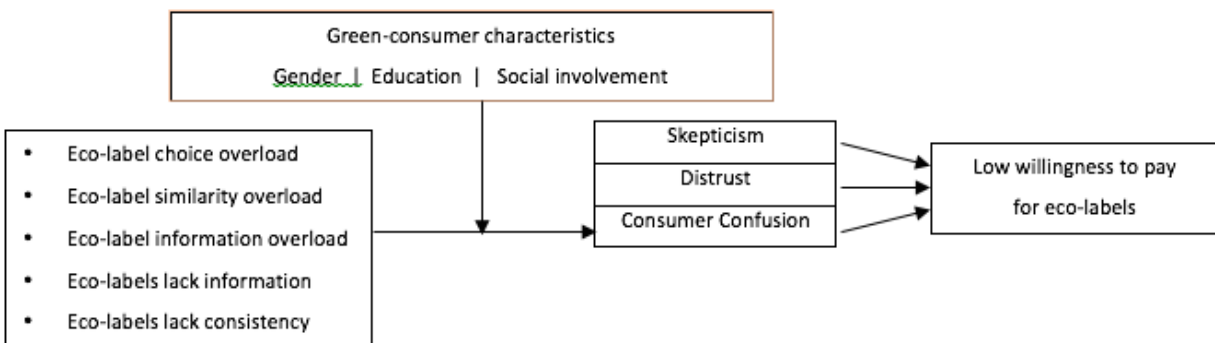
As will be shown, regression analysis provides a better understanding of whether consumer confusion is the reason why consumers are not willing to pay more for products with eco-labels. The sources of consumer confusions are also analyzed, along with the study of variables related to green consumer characteristics into a regression model to see if the positive relationship between sources of confusion and consumer confusion over eco-labels becomes stronger. This investigational structure is used to answer the following research question:

"What factors are associated with low willingness to pay for eco-labels, and what is the role of green consumer characteristics in this matter?"

This study contributes to an understanding of many uninvestigated areas. Firstly, no study has ever investigated whether consumer confusion is the primary reason for why consumers are not willing to pay more for products with eco-labels. Secondly, no study has ever investigated what causes consumer confusion over eco-labels. In addition, few researchers have investigated the role of green consumer characteristics along sources of confusion and consumer confusion.

This study offers useful insight into eco-labels for marketing managers. Many marketing managers have been unable to raise willingness to pay for the eco-label they are utilizing as they do not understand the reasons underlying the reluctance to pay.

Thesis structure

The first four sections of the literature review discuss the concepts of green consumerism, eco-labels, consumer confusion, sources of confusion and green consumer characteristics. After that, six hypotheses are introduced: hypothesis 1, which studies whether consumer confusion explains consumers' low willingness to pay for products with eco-labels, and hypotheses 2, 3, 4, 5 and 6, which investigates which sources of confusion might cause consumer confusion. The final section contains hypotheses 7, 8 and 9, designed to investigate whether green consumer characteristics can strengthen the positive relationship between sources of confusion and consumer confusion.

The data and methodology chapter explains how the data was collected, manipulated and later transformed into variables. To investigate the usability of these variables, descriptive statistics are studied and correlation and factor analyses used. The chapter also discusses how the variables are employed to utilize regression analyses for testing our hypotheses.

In the chapter on results, the outputs of the regression analyses are discussed. Each paragraph of the chapter addresses one or several hypotheses. Hypothesis 1, 2, 3, 4 and 8 are shown to be correct over particular eco-labels, while hypothesis 5, 6, 7 and 9 are shown to require further study.

The conclusion chapter summarizes the findings on results to answers the research question. It will be concluded there is consumer confusion over particular eco-labels due to particular sources of confusion. There will be an elaboration on the implications of this study in the discussion chapter. Thereafter, in the recommendations chapter there will be proposed multiple managerial guidelines marketers can employ, to overcome sources of confusion.

CHAPTER 2

* *

Literature review and theoretical framework

2.1 Green consumerism

Environmental concern is not a recent phenomenon, its origins can be traced back as far as the 19th century, when scientists found that humans often overuse or destruct natural resources for consumption (Zimmer, Stafford and Stafford, 1994; Fransson and Gärling, 1999). However, environmental concern has only taken serious forms from the 1970's, when media started to warn consumers about the detrimental effects that consumption can have on the environment. Thereafter, many researchers reported a rise of environmental concern among consumers (Anderson, Henion and Cox, 1974; Kinnear, Taylor and Ahmed, 1974; Prothero, 1990; Vandermerwe and Oliff, 1990; Worcester, 1993).

In order to meet these concerns, corporates have tried to market products that are produced and can be consumed without harming the environment. These environmental friendly products are often referred as 'green products'. Companies such as The Body Shop are a good illustration of corporates that have successfully marketed green products (Peattie and Crane, 2005).

In addition, many studies also reported that the number of companies that have tried to market green products increased enormously. Vandermerwe and Oliff (1990) found that nearly 80% of all European consumer good companies shifted towards environmental friendly products since the 70's, and in a study of Menon and Menon (1997) it was concluded that the green market grew 'exceptionally' between 1970 and 1995. However, the rapid growth of the green market has also let to increased competition. In order to remain competitive and distinctive on the green market, many corporates utilize environmental labels to better inform consumers about environmental quality of their green products.

2.2 Eco-labels

Environmental labels were officially recognized during the Rio de Janeiro Earth summit in 1992, as stickers that can be conducted on products, to inform consumers how the production and consumption of a product affects the environment, to provoke more sustainable consumption, as well

as forcing corporates and governments to set higher environmental requirements for products. However, there appear to be different eco-labels.

According to Rubik and Frankl (2005) environmental labels can be divided into two categories: environmental labels are either voluntary or mandatory conducted. Mandatory labels are conducted due to legislation. They provide information about product functional matters, such as danger symbols that show how the content of a product can harm the environment if it is used in a particular way (appendix A). Voluntary environmental labels, are labels that can be conducted freely. They are conducted as a commercial product attribute to convince the consumer about how a product supports particular environmental issues (Rubik and Frankl, 2005). However, marketing research is largely aimed at voluntary labels due to it's commercial character.

According to The Organisation for Economic Co-operation and Development (OECD) and the International Standards Organization (ISO), there exists four types of voluntary labels. These labels are called *Type I*, *Type I-like, Type II* and *Type III* labels (OECD, 1997; ISO, 2000). An additional overview of these labels is given in Appendix B.

| Type I labels
Type I labels signal the environmental quality of a product compared to other products in different sorts of product categories, based on product life cycle. Type I labels are independent certified labels. They are awarded by third party organizations such as NGO's, if multiple requirements are met. They are offered with the aim to nurture sustainable consumption (ISO, 2000). The largest part of the literature considers type I labels as 'eco-labels', because of it's use for commercial purposes.

| Type I-like labels (not ISO)
Type I-like labels only differ in part from Type I labels, that they are compared to other products in the same product category, based on product life cycle.

| Type II labels
Type II labels signal environmental claims about particular product elements. Type II labels are self-certified labels, which means they are not granted by an independent party, hence, by product manufacturers and traders themselves.

| Type III labels

Type III labels contain quantitative environmental life cycle data in a comprehensive manner. This label is very detailed and often used for business-to-business practices. Given the fact that this thesis investigates consumers, this study will not further elaborate on type III labels.

From the stated literature above it can be concluded that an eco-labels can be defined as: an independent certified label, awarded by third party organizations, conducted on a product package, that aims to inform and convince consumers how the production and consumption of this product affects the environment compared to other products, for commercial purposes.

Moreover, it must also be noted that there are different kinds of eco-labels, that all express a different meaning. Therefore, it is possible to categorize eco-labels based on their meaning. A renowned scientific research by GEN (Global Eco-labeling Network) among 2000 products in the pre-packaged food industry, showed that eco-labels can be divided into 4 categories.

Animal welfare labels

Animal welfare labels are the most often used labels on pre-packaged food. The proposition of these labels, is that it tells consumers that for the production of this product, animals have lived in a natural habit with good physical and psychological conditions. It is also not allowed that the growth of animals is manipulated with hormones and antibiotics. How companies can perceive an animal-label, differs per country. Most often, cooperative farm organisations reach out these labels.

Organic labels

Organic labels are mostly used for fresh or raw products such as vegetables, but since more and more fresh products are pre-packaged, the use of this labels increases among pre-packaged food products. Organic labels are conducted with the aim to inform consumers that a product does not contain added ingredients or processed aids. It is also not allowed that the product is genetically manipulated. In most of the cases, cooperative farm organizations reach out these labels, but in some cases also governmental departments.

Recycling labels

Recycling labels can be conducted with the aim to inform consumers, that a product or product package can be recycled, or that a product or product package is made of 100% recycled goods. These goods can be paper, plastic or other materials. In addition, products that aim to perceive a recycling-label are also assessed on their environmental footprint. The environmental footprint is based on sustainable land use, water efficient usage or willingness to educate consumers. In most countries, companies can conduct this label when their product complies to guidelines that are offered by federal trade commissions.

Fair trade labels

Fair trade labels are conducted on pre-packaged goods with the aim to inform consumers that products have been produced 'environmental friendly' and traded by the principles of 'fair trade'. These principles include fair labor conditions, transparency, fair prices and community development of third world organizations in the supply chain of product manufacturing. Fair trade labels are particularly conducted by large consumer goods organizations, to express their concerns regarding small organizations that participate in their value chain. Fair trade labels are offered by international trade organizations if certain requirements regarding the principles as mentioned above are met.

2.3. Consumer confusion and sources of confusion

Research literature provides many differing definitions for consumer confusion, and combining parts of these can offer a holistic definition of the term. Mitchell and Papavassiliou (1999, p. 327) describe consumer confusion as "a state of mind," while Turnbull, Leek and Ying (2000) describe it as "consumer failure to develop a correct interpretation in mind of various facets of a product or service." We can conclude from these statements that consumer confusion is a state of mind in which the consumer fails to correctly interpret a product. In addition, some scientists argue that this mental state is predominantly non-conscious in nature (Miaoulis and d'Amato, 1978, p. 49) and that this can lead to sub-optimal choices (Walsh, 1999, p. 24). We can therefore argue that consumer confusion is a non-conscious state of mind, in which consumers fail to correctly interpret a product, and which can lead to imperfect decisions or sub-optimal choices.

But what causes consumer confusion? Researchers explain that consumers become confused when they are overloaded with brand-stimuli which they cannot structure in their minds (Turnbull, Leek and Ying, 2000), meaning that brand-stimuli overload is considered as the source of consumer

confusion. According to scholarly literature, there are five sources of consumer confusion. These sources are explained below.

Choice overload

Research shows that "choice overload" is an important source of consumer confusion. Choice overload is a phenomenon that arises when consumers are faced with manifold product choices. The vast number of outcomes of these choices cannot be processed in the mind of the consumer at once, and this leads to confusion (Broniarczyk, 2008). The most famous example of choice overload comes from Alvin Toffler (1970). In his famous book *Future Shock*, he explains that as consumers are confronted with numerous options, they can get confused or even "become paralyzed by the multitude of choices", and as a result consumers do not know what to purchase anymore. More recently, Heitmann, Lehmann and Hermann (2007) have drawn somewhat similar conclusions in their research, finding that choice outcome satisfaction decreases dramatically as the number of choices increases.

Similarity overload

In contrast to the above, there are also scientists who disagree that choice overload is the main cause for consumer confusion. These scientists argue that consumers are confused because brands look too identical or too similar (Loke, Ross and Hinkle, 1986; Shukla, Banerjee and Adidam, 2010). Mitchell, Walsh and Yamin (2005) state that consumer confusion due to choice similarity can be described as an incorrect brand evaluation caused by the perceived physical similarity of products or services. For instance, when many brands contain a similar color (e.g. red, Coca Cola vs private label brands), consumers can become confused what differences there are between products.

Information overload

Other scholars like Lee and Lee (2004) deem information overload the main source of consumer confusion. Lee and Lee describe information overload as a situation in which a consumer is exposed to too much product or brand information which he/she cannot structure or process, leading to confusion. A more in-depth explanation is offered by Jacoby, Kohn and Speller (1973), who found that if too much information is expressed by a brand, consumers are often unable to prioritize brand information correctly, leading to confusion. The result of information overload has also been investigated by Lastly, Calder, Phillips and Tybout (1981). They found that when consumers are

confused due to an overload of product information they need more time to make a decision. Consumers can get impatient, which can lead to quick and undeliberate choices.

Lack of information

There is also evidence that lack of information is a common source for consumer confusion. This often relates to the field of branding and a brand not conveying sufficient information to consumers, which can lead to confusion about what a brand means (Bearman, 1960; Buchanan, 1970; Hirsch, Friedman and Koza, 1990). Turnbull, Leek and Ying (2000) build on this conclusion. They also stress that consumer confusion occurs when there is not sufficient information available about a product at the point of purchase.

Inconsistency

In the Netherlands, Unilever once used the slogan "Trust in Omo" for their detergent (called Omo). After independent parties tested Omo, however, they concluded that Omo is not a trustworthy brand because it can actually damage your clothes. Many consumers became confused about the meaning of the brand Omo because of the ambiguous claim "Trust in Omo" (de Mortanges and Rad, 1998). This is an example of the fifth source of consumer confusion mentioned in the research literature: a lack of consistency or ambiguity.

Three prominent articles about this confusion caused by lack of consistency or ambiguity are often used in research. According to Jacoby and Hoyer (1989), consumer confusion occurs when brands contain inconsistent claims. When consumers recognize inconsistent claims, consumers can become confused about what the true value of a product is. Kangun and Polonsky (1995) offered another similar explanation, they assume that consumers become confused about what brand means, when brands contain statements that are not in line with the functional goals of a product. A third study that explains ambiguity confusion is by Mitchell, Walsh and Yamin (2005), who define consumer confusion due to ambiguity as a lack of understanding about a product during the evaluation phase, as consumers are forced to re-evaluate beliefs about a product due to product information that seems questionable. We can conclude that inconsistency is a source of consumer confusion where the consumer fails to correctly understand the value or meaning of a product when product information tends to express inconsistent or false arguments.

Based on the scholarship discussed above, we now also know what causes consumer confusion, namely the sources of confusion. We will therefore extend our definition to read as follows: "Consumer confusion is a non-conscious state of mind in which consumers fail to correctly interpret a product, which can lead to imperfect decisions or sub-optimal choices and is caused by choice overload, similarity overload, information overload, lack of information or inconsistency."

2.4 The green consumer and green consumer characteristics

The term "ecological consumer" was first coined in the seventies. During this period, scholars attempted to identify consumers with environmental concerns (Anderson, Henion and Cox, 1974; Kinnear, Taylor and Ahmed, 1974). They assumed that there exist consumers with particular attitudes or intentions regarding environmentally friendly activities. Even now, forty years later, this view of the green consumer hasn't changed much, and it appears that most studies still build upon general assumptions of who the green consumer is. These assumptions can be summarized as follows: "The green consumer is someone who is concerned about the environment and who is committed to buying ecologically-friendly products to reduce their impact on the environment, even if it is costlier."

This is, however, a very limited description of the green consumer, and it is possible to further identify them thanks to many studies indicating that green consumers also tend to be part of a particular demographic and to have certain psychographic and behavioral characteristics. These characteristics are discussed below.

Demographic characteristics

Many researchers have tried to use demographic factors to identify the green consumer (Samdahl and Robertson, 1989; Schlegelmilch, Bohlen and Diamantopoulos, 1996; Pickett, Kangun and Grove, 1993; Gooch, 1995). Schlegelmilch, Bohlen and Diamantopoulos, however, summarized that "demographic variables are of limited use for identifying the green consumer… variables specific to environmental consciousness and concern are better able to explain consumers' pro-environmental purchasing behavior." In addition, they mention that "Companies focus primarily on demographics because demographic variables are readily available and can be applied to segmentation problems with relative ease. Therefore, the apparent weakness of demographics for profiling green consumers is of great managerial concern." (Schlegelmilch, Bohlen and Diamantopoulos, 1996, p1; McDonald and Dunbar, 1998, p.22; Myers, 1996). Even so, this does not mean that every paper using demographic

factors to segment green consumers is useless. Conclusive and qualitative research still shows that demographic factors can be used to identify green consumers. These demographic factors include, in particular, gender, education, geographic region and income.

Some researchers deem gender and education to be important factors in identifying the green consumer. Women are considered to be more concerned about the environment than men (Banerjee and McKeage, 1994; Robert, 1996), which suggests that green consumers are more often women. Regarding education, it has been proven that high educated consumers are more concerned about the environment than low educated consumers (Maloney, Ward and Bracht, 1975, p. 585) because they have greater access to information through their social network (do Paço, Raposo and Leal Filho, 2009). This suggests that green consumers are often high educated people.

Some researchers also argue that demographics and income are important factors in identifying green consumers. Many studies have shown that consumers in urban areas are more concerned about environmental issues (Freudenburg, 1991; Schwartz and Miller, 1991). A possible explanation is that urban consumers feel more responsible for the current worsening climate (Pacione, 2003). In addition, Straughan and Roberts (1999) have proven that income is positively related to green consumerism because people with a higher income are able to pay the price premiums charged for green products. It can be concluded that green consumers are often people from urban areas with relatively high incomes.

Unfortunately, the demographic factor of age cannot be used to identify the green consumer. Some researchers suggest a negative relationship between age and the extent to which one regards the environment as important (Van Liere and Dunlap, 1981; Zimmer, Stafford and Stafford, 1994), others argue for a positive relationship between the two variables (Samdahl and Robertson, 1989; Kristensen and Grunert, 1994), while some have not been able to find any relationship between age and green consumerism at all (Kinnear and Ahmed, 1974). In sum, the literature remains inconclusive on whether green consumers can be characterized by age.

Behavioral characteristics

There are unfortunately few studies that offer an in-depth view of what constitute the behavioral characteristics of green consumers. Chan (1999) found that if consumers display environmentally

friendly behavior, they often possess high levels of environmental knowledge. In addition, Hwang, McDonald and Oates (2010) showed that if consumers possess environmental knowledge, it is because they are willing to search for it. Therefore, it might be possible to characterize green consumers as people who search for environmental information.

Psychographic characteristics

On top of particular demographic and behavioral characteristics, there is also evidence that green consumers have particular psychographic characteristics. Some studies indicate that consumers with environmental concerns foster particular attitudes. Maloney, Ward and Braucht (1975) found that if consumers have negative attitudes towards practices that could harm the environment, they are likely to display environmentally friendly behavior. It could then be suggested that green consumers have negative attitudes towards environmental pollution. This conclusion can, however, be regarded as too obvious. A more profound psychographic factor that can be used to identify green consumers appears to be values. According to the scholarship, consumers with environmental concerns often possess three values.

The first value characterizing green consumers is caring about animals. According to Ottman (2011), green consumers often regard animals as equal to humans and they opt to consume products that do not affect animals in any manner. These consumers are often vegan or vegetarian. Another value characterizing green consumers is caring about a natural lifestyle. This was suggested by Gilg, Barr and Ford (2005), who found that consumers with environmental concerns often value a natural lifestyle and consume organic products or products that have not been genetically manipulated. The final value is efficiency. According to Chan (2000), green consumers often value producing little waste and believe that efficient use of resources will protect the environment. In sum, green consumers are often people who care about animals, who lead a natural lifestyle and who care about resource efficiency.

The value characteristics of green consumers mentioned above are acknowledged in the scholarly literature. However, Becchetti and Rosati's (2007) study about willingness to pay for fair trade products discovered another value that could characterize the green consumer. Their study suggests that a large group of green consumers value products that are traded or produced with transparency and responsibility, by which is meant fair employment conditions, trade transparency and societal

development. The fourth value characterizing the green consumer is then a preference for transparent and responsible commerce practices.

Political background is another psychographic factor to take into account. Some studies indicate that environmental issues are often topics on the liberal political agenda (Do Paço, Raposo and Leal Filho, 2009), and other studies suggest that people who support the "green movement" are often people with a liberal background (Straughan and Roberts, 1999). A possible explanation for these findings is that people with a liberal background want to shape an innovative and sustainable society, whereas people with a conservative background are often skeptical toward novel topics such as sustainability (Green, 2002).

In addition to attitudes, values and political background, green consumers can also be characterized by their social involvement. Comwell and Schwepker (1995) concluded in their study that if a person is highly involved in social communities, they display environmentalist behavior. Straughan and Roberts (1999) also showed that social involvement is positively correlated with environmentally friendly behavior.

2.5 Consumer confusion and eco-labels

As mentioned in the introduction, many studies suggest that consumers are not willing to pay more when a product comes with an eco-label. According to some researchers, this is because some consumers possess negative attitudes, including skepticism and distrust, towards eco-labels (Delmas, Nairn-Birch and Balzarova, 2013; Walker and Wan, 2012). But a study by Gertz (2005) argues that skepticism and distrust are not the primary reasons for consumers' reluctance to pay for eco-labels: his study found that 80% of all consumers seriously consider eco-labels when they go shopping, while over 95% of all consumers report that they trust companies to use eco-labels accurately.

The last and most widely adopted explanation for why consumers are not willing to pay more for products with eco-labels is that of consumer confusion (Langer and Eisend, 2007; Horne, 2009; Brécard, 2014; Bleda and Valente, 2009). Researchers have adopted this explanation for two reasons. Firstly, many studies show that consumers who consider products with eco-labels often do not understand what eco-labels mean (Lohr, 1998; Galarraga Gallastegui, 2002). Misunderstanding is without doubt the predominant cause for consumer confusion. Secondly, many studies report that

consumers are not willing to pay more for products with eco-labels due to shopping fatigue (Chun and Bidanda, 2013) or decreased confidence (Van Amstel, Driessen and Glasbergen, 2008), which is caused by consumer confusion (Mitchell and Papvassilou, 1997; Teisl, 1999). Mitchell and Papvassilou concluded in their study that confusion requires a lot of mental processing, which can exhaust a consumer. Teisl found that when consumers are confused about what brands mean they lose confidence in whether a brand can help them to fulfil their needs.

All in all, there appears to be enough evidence supporting the suggestion that consumers are unwilling to pay more for products with eco-labels due to consumer confusion rather than because of skepticism or distrust. In order to confirm this assertion, the following hypothesis will be tested:

Hypothesis 1: Consumers have low willingness to pay more for products with eco-labels due to consumer confusion rather than because of skepticism or distrust.

It must be noted that hypothesis 1 does not exclude the possibility of skepticism and distrust being a cause of low willingness to pay for some eco-labels. However, scholarly literature indicates that consumer confusion is the most important cause. We will find out if this is true in the result section.

2.6 Causes of consumer confusion over eco-labels

In the previous section, an important point was not discussed: What causes consumer confusion over eco-labels? As mentioned in section three, there are five sources of consumer confusion: choice overload, similarity overload, information overload, lack of information and inconsistency. This section discusses whether these sources play a role when interpreting eco-labels.

Eco-label choice overload

Many studies have indicated that choice overload occurs with eco-labels. In particular, these studies cite that there is a "proliferation" or "profusion" of eco-labels on the market, which causes choice overload (Bonsi, Hammett and Smith, 2008; Sirieix, Delanchy, Remaud, Zepeda and Gurviez, 2013; Delmas and Lessem, 2017; Crespi and Marette, 2005; Castka and Corbett, 2016). In order to conclude whether there is confusion over eco-labels due of choice overload, the following hypothesis will be tested:

Hypothesis 2: There is consumer confusion over eco-labels due to choice overload.

In additon, Lucas, Pichot and Salladarré (2012) suggested, that especially animal-labels are the labels that profuse, because almost 40% of all products in supermarkets contain animal substances. Therefore, we expect that choice overload only causes consumer confusion among animal-labels. We will see if this is true in our result section.

Eco-label similarity overload

Companies spend millions to legally protect the physical features of their brand to overcome brand similarities in the marketplace. Unfortunately, this is not the case with eco-labels. Few third-party organizations that offer eco-labels have legally protected the physical features of their labels (Galarraga Gallastegui, 2002) and it is possible that more than one third-party organizations offer an eco-label with the same physical features. It is therefore believed that too many eco-labels have a similar appearance (Tang, Fryzell and Chow, 2004). To test whether similarity overload has led to consumer confusion, the following hypothesis was developed:

Hypothesis 3: There is consumer confusion over eco-labels due to similarity overload.

Unfortunately, it is not clear which third-party organizations have not legally protected the physical features of their label, so we are not able to conclude among which eco-labels there could be physical similarities. However, there are studies indicating that are physical similarities present among a particular eco-label. In a research of Tang, Fryzell and Chow (2004) about visual and verbal design of eco-labels, it can be noted that recycling-labels often contain similar designs. In fact, It was found that almost every recycling-label had the same 'three arrow' symbol (see Appendix C). Therefore, we expect similarity overload to be the primary cause of consumer confusion among recycling-labels. We will see if this is true in our result section.

Eco-label information overload

No studies suggest that eco-labels express too much information, and it is instead thought that most eco-labels communicate too little information (Van Amstel, Driessen and Glasbergen, 2008). Due to this, third-party organizations have set up initiatives such as informational programs to better inform consumers about what eco-labels mean.

Although these programs were meant to better inform consumers, they have not succeeded. In fact, most of the programs overloaded consumers with information about eco-labels, leading to even more confusion about what eco-labels mean. Horne (2009) has stated that "information overload for consumers is rife: In one study, 97% of those surveyed indicated that there 'was more stuff to read about eco-labels than I could ever dream of reading' and 92% indicated they felt 'surrounded' by information (Lloyd, 2006)."

In order to affirm these conclusions, the following hypothesis will be used:

Hypothesis 4: There is consumer confusion among eco-labels due to information overload.

Although researchers mention that eco-label programs have overloaded consumers with information, they do not mention which eco-label programs. Therefore, we are unable to conclude among which eco-label consumers experience information overload.

However, the largest eco-label program that failed to inform consumers, was the 'EU Flower-label' program (European Commission, 2007). The EU Flower-label is an eco-label expressing recycling values, so it might be expected that information overload is prevalent among recycling labels. By the same token, it must be noted that the EU Flow-label program is -one out of many- eco-label programs that failed to inform consumers. So it is nonetheless possible that information overload is also present among many other eco-labels. Although this might be true, since the EU Flower-label program is one of the biggest programs that failed, we expect that information overload causes consumer confusion among recycling-labels. We will see if this is true in our result section.

Lack of eco-label information

Several studies implicitly mention that eco-labels often lack information, which could cause confusion about what eco-labels mean. Economides (1997) mentions that eco-label symbols are often insufficient to convey all of the green information, and consumers may therefore lack information of what the label stands for. Consequently, consumers may fail to correctly interpret an eco-label, leading to confusion. Van Amstel, Driessen and Glasbergen (2008, p1) state that "eco-labels fail to communicate adequately; they do not diminish the information gap between seller and buyer." By this they mean that eco-labels do not carry enough information to convince a buyer of the ecological impact of a product.

Studies offer qualitative evidence suggesting that eco-labels lack information, which could lead to confusion. To test whether this is true, the following hypothesis will be explored:

Hypothesis 5: There is consumer confusion over eco-labels because they lack information.

However, it must be noted that the research of Van Amstel, Driessen and Glasbergen, was about 'agri-food' labels, which corresponds with organic-labels. So we might conclude here that only organic-labels often lack information and no other eco-label. Therefore, we are interested to find out in our results section if consumer confusion persists among organic-labels because these labels would lack information.

Eco-label inconsistency

As mentioned in the second section of this chapter, eco-labels can be utilized by companies if they produce their products according to certain criteria. Surprisingly, however, Thrane, Ziegler and Sonesson (2008) found that companies who do not act upon environmental issues sometimes still qualify for eco-labels. Companies such as Starbucks, who utilize resource-efficiency labels while being accused of excessive water use in their stores, illustrate how corporations that do not fulfil their environmental responsibilities can still qualify for an eco-label. Although this might sound beneficial for Starbuck since eco-labels can increase sales, it is not. Henninger (2015) suggested that in situations such as this, eco-labels can create ambiguity in the mind of the consumer and therefore confusion about what an eco-label stands for, and this could lower willingness to pay for a product.

The evidence suggests that eco-labels are sometimes utilized inconsistently and that this can create confusion in the mind of the consumer. The following hypothesis captures this assumption:

Hypothesis 6: There is consumer confusion over eco-labels because they are utilized inconsistently.

Unfortunately, there is no research indicating that consumers suffer from confusion due to inconsistency when a specific eco-label is considered. We will investigate if this is true in our result section.

2.7 Sources of confusion and green consumer characteristics

The previous sections argued that consumers are unwilling to pay for eco-labels due to consumer confusion. In addition, consumer confusion persists because sources of confusion appear to be present with eco-labels.

As mentioned earlier, if sources of confusion are present when reading eco-labels, this does not mean that every consumer who takes eco-labels into account gets evenly confused. The scholarship on the topic explains that some consumers experience more confusion than others because they are more sensitive to sources of confusion, which in turn is the result of them being less capable of processing stimuli overloads. Interestingly enough, green consumers who often consider products with eco-labels have certain characteristics of these consumers, which might further explain the presence of consumer confusion over eco-labels.

An important characteristic determining whether a person is susceptible to sources of confusion appears to be gender. Elliot and Speck (1998) found that women experience more miscomprehension of advertisement clutter than men do. Turnbull, Leek and Ying (2000) also concluded in their study that women suffer from brand overchoice more than men do. Based on these studies, we can conclude that female consumers are more prone to stimuli overload than male consumers. This might explain the large presence of consumer confusion over eco-labels, as green consumers are more often female then male. To study this premise, the following hypothesis will be tested:

Hypothesis 7: The positive relationship between the sources of confusion and consumer confusion over eco-labels is stronger when the green consumers are female than when they are male.

Another important characteristic determining whether a person is susceptible to sources of confusion appears to be education. Some researchers believe that high educated individuals have better brain processing capabilities, which could make them immune to stimuli overload and therefore to confusion. However, most researchers disagree with this suggestion. These researchers indicate that high educated consumers often shop under time constraints (Ackerman, 1989; Zhuang, Tsang and Zhou and Nicholls, 2006). When consumers shop under time constraints, they are not capable of processing much brand-stimuli, which makes them more susceptible to sources of confusion.

This might explain the large presence of consumer confusion over eco-labels, because green consumers are more often high educated than low educated. To investigate this suggestion, the following hypothesis will be used:

Hypothesis 8: The positive relationship between the sources of confusion and consumer confusion among eco-labels is stronger when green consumers are highly educated than when they are less educated.

The last characteristic that could determine a person's susceptibility to sources of confusion and therefore confusion is social involvement. Belk (1975) mentions that when consumers shop while having social interactions, with shoppers providing each other with more brand information, confusion due to brand-stimuli overload is more likely to occur. The fact that green consumers are more often considered to be socially involved people than reclusive people might explain the large presence of consumer confusion. The following hypothesis tests this premise:

Hypothesis 9: The positive relationship between the sources of confusion and consumer confusion over eco-labels is stronger when green consumer are socially involved than when they are reclusive.

CHAPTER 3

* * *

Data and Methodology

3.1 Methodology and sample collection

A large amount of observations is needed for the analyses done as part of this thesis. Questionnaires are suitable for obtaining a large number of observations because they can be completed quickly and anonymously and can be executed among numerous people at once.

A questionnaire was therefore designed. Some questions were composed by the author, while some were adopted from an earlier investigation into environmental concerns and behavior by Straughan and Roberts (1999). To improve the validity and explanatory power of the questionnaire, questions were tested with thirty randomly selected people. The test results were analyzed and some questions were modified. Next, the questionnaire was carried out among 476 people in the city center of 's-Hertogenbosch. Randomly selected people were asked to fill in the questionnaire and were allowed to take as long as they needed. After the respondents were finished, a check was run to see whether every question was filled in. Twenty-one response errors were detected and therefore discarded from the dataset.

The first question asked the respondents how concerned they are about the environment and how much environmentalist purchasing behavior they are willing to display. Respondents were offered 10 statements citing the importance of the environment and environmentalist purchase behavior, which they needed to rate on a 1-to-7-point Likert scale from "strongly disagree" to "strongly agree". The higher a consumer scored on this Likert scale, the more a consumer concerns about the environment and the more he/she is willing to display environmentalist purchasing behavior. If a consumer scores 3 points or lower on this Likert scale, he/she acknowledges not be concerned about the environment or not willing to display environmentalist purchasing behavior.

Moreover, if the average score for the ten statements was less than three points, respondents were discarded from the dataset, because the study is only interested in consumers who are committed to buying environmentally friendly products that might feature eco-labels. In the end, only 386 of 455

responses were used for this investigation. An overview of the demographic characteristics of our remaining respondents is given below in Table 1:

Table 1. Sample of demographic characteristics

Age		Gender		Income		Education		Geographic region	
15-20	0.8	Male	51.3	<500	1.8	None	0	Countryside	22.6
20-25	29.3	Female	48.7	500-1,000	10.3	Primary school	0.5	Suburbs	30.0
25-30	28.2	Total =	100.0	1,000-1,500	24.7	Secondary school	10.0	City	47.3
30-35	19.7			1,500-2,000	28.7	Vocational /MBO	20.3	**Total =**	**100.0**
35-40	8.2			2,000-2,500	16.1	College/HBO	27.1		
40-45	2.9			2,500-3,000	8.9	University (BSc)	18.4		
45-50	2.1			3,000-3,500	2.1	University (MSc)	16.3		
55-60	1.3			3,500-4,000	3.2	MBA	2.1		
60-65	7.4			4,000-4,500	0.5	PhD	0		
65>	0.3			4,500-5,000	1.8	**Total =**	**100.0**		
Total =	**100.0**			5,000-5,500	0.5				
				5,500-6,000	1.3				
				>6,000	0				
				Total =	**100.0**				

* N = 386

* Numbers are percentages of respondents

* The questionnaire can be found in Appendix D

Table 1 shows that most respondents were between the age of 20 and 40, with few respondents younger than 20 or older than 40 years. Most respondents earned between 1,000 and 2,500 euro per month after taxes, while few respondents earned less or more. Both education and gender appear to be equally distributed. There were equal numbers of highly as well as less-educated respondents, whereas 48.7% of respondents were female and 51.3% respondents were male. Unfortunately, this distribution pattern does not hold true for geographic region: it can be seen that a large portion of the respondents lives in city centers.

3.2 Dependent variables

The second step in the questionnaire was to investigate how much the remaining respondents are willing to pay for eco-labels. Since there are four different eco-label types, the study is interested in

people's willingness to pay for animal, organic, fair trade and recycling labels. To investigate this, the questionnaire offered respondents four product groups: one group consisting of five animal products, a group with five organic products, a group of five fair trade products and one group with three recyclable products. In addition, the base prices of all products were shown. Respondents were then asked how much they were willing to pay extra for these products if they had eco-labels. By measuring in each product group how much a respondent is willing to pay extra for eco-labels it can be studied what price premium he/she is willing to pay for animal, organic, recycling or fair trade labels. The distribution of willingness to pay for these labels is given below.

Table 2a. Distribution willingness to pay for eco-labels

	Wtp animal labels	Wtp organic labels	Wtp fair trade labels	Wtp recycling labels
Mean	6.01	6.44	8.23	5.71
Max.	18.09	19.20	20.11	15.98
Min.	-6.23	-4.81	-3.21	-11.53
Std. dev.	3.51	5.22	5.56	6.83

* Wtp= Willingness to pay
* N= 386
* Values describe the price premium in percentage compared to regular product prices

Table 2a provides a clear picture of how much consumers are willing to pay for eco-labels, however, the present study is interested for which eco-labels consumers have lower willingness to pay. To investigate whether consumers have low willingness to pay for animal, organic, fair trade or recycling labels, the questionnaire measured for which product group the respondent was least willing to pay a premium for eco-labels. After measuring this, it appeared that 109 respondents were the least willing to pay a premium for animal labels, 103 for organic labels, 97 for fair trade labels and 77 for recycling labels. Every sample has its own dependent variable, measuring willingness to pay for the label respondents were least willing to pay a premium for, being animal, organic, fair trade or recycling labels. In other words, the descriptive statistics of table 2 tell us what price premium (given in percentages) respondents were willing to pay for the eco-label they were least willing to pay for.

Table 2b. Dependent variables after measuring least willingness to pay

	Wtp animal labels	Wtp organic labels	Wtp fair trade labels	Wtp recycling labels
Mean	2.57	2.95	2.29	1.55
Max.	10.90	12.20	11.09	12.98
Min.	-6.23	-4.47	-3.00	-11.53
Std. dev.	2.46	4.25	4.28	5.04
N	109	103	97	77

* Wtp= Willingness to pay

* Values are given in percentages

Loureiro and Lotade (2005) mention that consumers who are willing to pay for eco-labels are willing to pay a price premium between 5 and 10 percent. In light of this, the mean of the dependent variables in the present study, at around 0–5%, can indeed be regarded as low.

Table 2a and 2b also show that there were some consumers willing to pay even les for products if they had eco-labels; a negative price premium This is possible: we deem confusion, skepticism and distrust as possible causes for low willingness to pay, and several studies indicate that these can create strong negative attitudes towards brands and therefore even negative willingness to pay (Mitchell and Papavassiliou, 1999; Chaudhuri and Holbrook, 2001). Therefore, we did not exclude those respondents from the dataset.

3.3 Independent variables

Antecedents that are known to cause low willingness to pay for eco-labels are distrust, skepticism and consumer confusion, and so this thesis is interested in whether the respondents display any of these when they consider the eco-labels they are least willing to pay for. To investigate this, the questionnaire first asked the respondents to look for the product group for which they were least willing to pay for eco-labels. The respondents were then offered several statements, each citing distrust, skepticism or consumer confusion as a reason for low willingness to pay for eco-labels, which they needed to rate on a seven-point Likert scale from "strongly disagree" to "strongly agree."

Consequently, these statements measure the independent variables skepticism (X_{Scep}), distrust (X_{Distru}) and consumer confusion (X_{Confus}) for the eco-labels respondents were the least willing to pay for. Descriptive statistics for these variables can be found below in Table 3.

Table 3. Descriptive statistics for the independent variables skepticism, distrust and consumer confusion

Respondents group - least wtp for animal labels				**Respondents group - least wtp for organic labels**		
	X_{Scepti}	X_{Distru}	X_{Confus}		X_{Scepti}	X_{Distru}	X_{Confus}
Mean	3.81	4.02	5.47	Mean	4.07	3.79	4.91
Max.	7	7	7	Max.	7	7	7
Min.	1	1	1	Min.	1	1	1
St. dev.	1.91	1.83	1.44	St. dev.	1.84	1.94	1.77
N	109	109	109	N	103	103	103

Respondents group - least wtp for fair trade labels   **Respondents group - least wtp for recycling labels**

	X_{Scepti}	X_{Distru}	X_{Confus}			X_{Scepti}	X_{Distru}	X_{Confus}
Mean	5.00	3.58	3.55		Mean	4.74	4.10	3.81
Max.	7	7	7		Max.	7	7	7
Min.	1	1	1		Min.	1	1	1
St. dev.	1.81	2.13	1.80		St. dev.	1.36	1.68	1.78
N	97	97	97		N	77	77	77

This study is furthermore interested in whether consumers encounter sources of confusion when considering the eco-labels they were the least willing to pay for. This was investigated by offering the respondents five statements, each mentioning the presence of a particular source of confusion. Respondents were asked to divide 100 points among these statements to reflect which sources were the most and which the least present with the eco-labels they were the least willing to pay for.

Consequently, these statements measure the independent variables of choice overload (X_{Choice}), similarity overload (X_{Simila}), information overload (X_{Inform}), lack of information ($X_{Lack.I}$) and inconsistency (X_{Incons}) with the eco-labels the respondents were the least willing to pay for. Descriptive statistics for these variables are given below in Table 4.

Table 4. Descriptive statistics for independent variables measuring sources of confusion

Respondents group - least wtp for animal labels

	X_{Choice}	X_{Simila}	X_{Infor}	$X_{Lack.I}$	X_{Incons}
Mean	58.9	57.45	51.45	48.93	46.70
Max.	99.5	98.0	100	100	100
Min.	6.0	1.5	0	0	0
St. dev.	22.06	21.84	25.88	24.60	25.08
N=109					

Respondents group - least wtp for organic labels

	X_{Choice}	X_{Simila}	X_{Infor}	$X_{Lack.I}$	X_{Incons}
Mean	46.93	47.11	52.07	48.87	44.71
Max.	100	100	100	93.5	92.5
Min.	1.5	0	0	0	0
St. dev.	23.37	26.14	24.52	23.37	21.22
N=103					

Respondents group - least wtp for fair trade labels

	X_{Choice}	X_{Simila}	X_{Infor}	$X_{Lack.I}$	X_{Incons}
Mean	41.80	39.12	41.94	42.11	41.10
Max.	95	97.5	98.5	98	96.5
Min.	0	0	0	0	0
St. dev.	27.32	27.11	29.15	28.14	27.46
N=97					

Respondents group - least wtp for recycling labels

	X_{Choice}	X_{Simila}	X_{Infor}	$X_{Lack.I}$	X_{Incons}
Mean	39.71	36.11	31.28	33.95	38.84
Max.	78.5	95	84.5	82.5	93.5
Min.	0	0	0	0	0
St. dev.	22.32	22.50	21.48	21.76	23.70
N=77					

Independent variables that are necessary to test the positive relationship between the sources of confusion and consumer confusion are variables related to the green consumer characteristics gender,

education and social involvement. These variables were obtained from the questionnaire by asking the respondents about their gender, education and social involvement. In addition, the questionnaire also asked the respondents about their age, income, geographic region, values and political background. These questions will be used as control variables. Descriptive statistics for these variables are given below in Table 5.

Table 5. Descriptive statistics for independent variables measuring green consumer characteristics

Respondents group - least wtp for animal labels

	X_{Age}	X_{Gen}	X_{Edu}	X_{Inc}	X_{Geo}	X_{lear}	$X_{V.ani}$	$X_{V.lif}$	$X_{V.rec}$	$X_{V.fai}$	X_{libe}	X_{Soci}
Mean	3.22	0.49	5.55	4.32	2.30	3.82	3.95	4.27	4.06	4.24	4.13	4.82
Max.	9	1	8	12	3	7	6.5	7	7	7	6.5	7
Min.	2	0	2	2	1	1	1.5	2	1	1	1	1.25
St. dev.	1.53	0.50	1.27	1.27	0.74	1.21	1.26	1.31	1.35	1.32	1.24	1.42

*N=109

Respondents group - least wtp for organic labels

	X_{Age}	X_{Gen}	X_{Edu}	X_{Inc}	X_{Geo}	X_{lear}	$X_{V.ani}$	$X_{V.lif}$	$X_{V.rec}$	$X_{V.fai}$	X_{libe}	X_{Soci}
Mean	3.59	0.56	5.28	4.46	2.38	3.35	3.89	4.09	4.14	4.26	3.99	4.13
Max.	9	1	8	12	3	7	6.5	7	7	7	7	7
Min.	1	0	2	1	1	1	1	1	1	1	1	1
St. dev.	1.79	0.49	1.38	2.20	0.77	1.42	1.11	1.40	1.43	1.37	1.27	1.23

*N=103

Respondents group - least wtp for fair trade labels

	X_{Age}	X_{Gen}	X_{Edu}	X_{Inc}	X_{Geo}	X_{lear}	$X_{V.ani}$	$X_{V.lif}$	$X_{V.rec}$	$X_{V.fai}$	X_{libe}	X_{Soci}
Mean	4.78	0.47	4.29	4.34	1.98	3.33	3.69	4.16	4.28	4.24	3.70	3.98
Max.	10	1	7	10	3	7	7	7	7	7	7	7
Min.	2	0	1	1	1	1	1	1	1	1	1	1
St. dev.	2.27	0.50	1.54	1.35	0.87	1.55	1.28	1.34	1.50	1.44	1.48	1.40

*N=97

Respondents group - least wtp for recycling labels

	X_{Age}	X_{Gen}	X_{Edu}	X_{Inc}	X_{Geo}	X_{lear}	$X_{V.ani}$	$X_{V.lif}$	$X_{V.rec}$	$X_{V.fai}$	X_{libe}	X_{Soci}
Mean	3.43	0.48	4.83	4.06	2.39	3.93	4.11	4.19	4.22	4.20	4.23	4.22
Max.	9	1	8	12	3	7	7	7	7	7	7	7
Min.	1	0	1	1	1	1	1	1	1	1	2	2
St. dev.	2.04	0.50	1.39	1.96	0.75	1.15	1.19	1.32	1.16	1.32	1.04	1.07

*N=77

3.4 Correlation and factor analysis

A correlation analysis was executed to observe the direction and strength of associations between the variables. Table 6 shows the correlations between dependent and independent variables. However,

because our investigation encompasses a large number of variables, Table 6 only includes the dependent and independent variables that have a correlation lower than -0.3 or a correlation higher than 0.3. Correlations with values between -0.3 and 0.3 can be left out because these correlations are classified as "weak linear relationships" (Janssen, De Pelsmacker and Van Kenhove, 2008). In sum, some dependent and independent variables are left out of table 6 because they are weakly related to each other.

Table 6. Correlations between dependent variables and independent variables

	WtpA	$X_{Distrus}$	$X_{Skeptis}$	X_{Edu}	X_{Inc}
WtpA	1				
Sig.	0.000				
$X_{Skeptis}$	0.291	1			
Sig.	0.701	0.000			
$X_{Distrus}$	0.396	0.443	1		
Sig.	0.595	0.307	0.000		
X_{Edu}	0.310	0.289	0.039	1	
Sig.	0.635	0.755	0.898	0.000	
X_{Inc}	0.448	0.141	-0.444	0.624	1
Sig.	0.356	0.828	0.321	0.091	0.000

    a.   N=388

    b.   Linear relationships with values lower than -0.3 or higher than 0.3 are marked in black.

    c.   Weak linear relationships with values between -0.3 and 0.3 are marked in grey.

Table 6 shows there are no strong correlations between our variables except for education and income (0.624, p-value 0.091). An explanation that is possible as well as obvious is that people with a strong educational background also earn higher salaries. However, since the correlation p-value of these variables is 0.091, it is still possible that there exists an underlying factor between these variables. To investigate this, a principal component analysis was conducted. The outcome of this analysis can be found below in Table 7.

Table 7. Principal component analysis for the variables of income and education

	Component			Eigenvalues		
	1	2	Component	Total	% of variance	Cumulative %
X_{Edu}	0.601	0.234	1	1.051	52.55	57.55
X_{Inc}	0.299	0.583	2	0.949	47.45	100.00

Extraction method: Principal
Component Analysis.

a. 2 components extracted

Table 7 shows that the "Kaiser criterion" calls for only one factor since 52.55% of the variance is explained by the first component. But after rotation, we also see the loads are equally distributed between the variables of education and income. Therefore, we will tread the variables as independent regardless. Hence, we deem the variables are independent.

Because the analysis resolved only two factors, it does not seem necessary to compose an additional scree plot to gain more insight into how the components are divided or to look for an initial "elbow graph".

4.5 Statistical model for the analyses

The variables mentioned above will be analyzed using regression analysis. Regression analysis seems most suitable for this study because the goal is to investigate and estimate relationships between variables.

Hypothesis 1: Consumers are unwilling to pay more for products with eco-labels due to consumer confusion rather than because of skepticism or distrust.

To investigate hypothesis 1, four linear regression analyses will be conducted. Each regression analysis will contain its own sample of respondents and a dependent variable (willingness to pay for animal labels, willingness to pay for organic labels, willingness to pay for fair trade labels or willingness to pay for recycling labels). In addition, the independent variables skepticism, distrust and consumer confusion will be added to each of the four regressions, to enable observing if consumer confusion shows a negative significant effect on willingness to pay, instead of skepticism or distrust.

However, only those regressions where consumer confusion shows a negative significant effect on willingness to pay will be used for further investigation. For instance, consumer confusion might only have a negative significant effect on the willingness to pay for animal labels and organic labels.

Hypothesis 2: There is consumer confusion over eco-labels due to choice overload.

Hypothesis 3: There is consumer confusion over eco-labels due to similarity overload.

Hypothesis 4: There is consumer confusion over eco-labels due to information overload.

Hypothesis 5:   There is consumer confusion over eco-labels because they lack information.

Hypothesis 6:   There is consumer confusion over eco-labels because they are utilized inconsistently.

To investigate why consumer confusion persists among these eco-labels and to answer hypotheses 2, 3, 4, 5 and 6, the variables of choice overload and similarity overload will be added to each of the regressions chosen to see if significant effects exist.

Hypothesis 7:   The positive relationship between the sources of confusion and consumer confusion over eco-labels is stronger when the green consumers are female than when they are male.

Hypothesis 8:   The positive relationship between the sources of confusion and consumer confusion among eco-labels is stronger when green consumers are highly educated than when they are less educated.

Hypothesis 9:   The positive relationship between the sources of confusion and consumer confusion over eco-labels is stronger when green consumers are socially involved than when they are not socially involved.

The last step in the analysis will be to add the independent variables related to green consumer characteristics into our regressions to see if the positive relationship between the sources of confusion and consumer confusion becomes stronger. In addition, the green consumer characteristics age, income, geographic region, values and political background will be added to the regressions as control variables.

CHAPTER 4

$* * * *$

Results

4.1 Testing hypothesis 1

In order to answer hypothesis 1 ("Consumers are unwilling to pay more for products with eco-labels due to consumer confusion rather than because of skepticism or distrust."), we developed four regressions. Each regression has its own sample and independent variable (willingness to pay for animal, organic, fair trade or recycling labels). In all four regressions, skepticism, distrust and consumer confusion are included as independent variables. Our four regressions can be found below and are coded as 1a, 1b, 1c and 1d.

N=109

R-squared=0.283

Regression 1a.	Variable	Coefficient	Std. Error p-value	p-value
	$X_{Scepisi}$	0.001	0.001	0.589
	X_{Distru}	0.000	0.001	0.761
	X_{Confus}	-0.007	0.003	**0.006***

    a.   Dependent variable: Willingness to pay for animal labels
    b.   White heteroscedasticity-consistent standard errors were used.

N=103

R-squared=0.144

Regression 1b.	Variable	Coefficient	Std. Error p-value	p-value
	$X_{Scepisi}$	0.000	0.002	0.946
	X_{Distru}	0.001	0.002	0.522
	X_{Confus}	-0.016	0.005	**0.002****

    c.   Dependent variable: Willingness to pay for organic labels
    d.   White heteroscedasticity-consistent standard errors were used.

N=97

R-squared=0,124

Regression 1c.	Variable	Coefficient	Std. Error p-value	p-value
	$X_{Scepisi}$	-0.007	0.002	**0.007****
	X_{Distru}	0.001	0.002	0.516
	X_{Confus}	-0.004	0.003	0.113

    a.   Dependent variable: Willingness to pay for fair trade labels
    b.   White heteroscedasticity-consistent standard errors were used.

	N=77			
	R-squared=0,092			
Regression 1d.	Variable	Coefficient	Std. Error p-value	p-value
	$X_{Scepisi}$	0.007	0.004	0.125
	X_{Distru}	0.001	0.004	0.756
	X_{Confus}	0.002	0.004	0.514

a. Dependent variable: Willingness to pay for recycling labels
b. White heteroscedasticity-consistent standard errors were used.

From regression 1a we can derive that consumer confusion has a strong significant negative effect on willingness to pay for animal labels (0.006) with a coefficient of -0.007% per unit point. So if consumer confusion increases with one unit point on the seven point Likert scale, the price premium a consumer is willing to pay for an animal label decreases with -0.007% (note: this is a level-level function, no logs are used, this counts for every regression). The same can be found in the regression shown in Table 7b, where consumer confusion has a significant negative effect on willingness to pay for organic labels (0.002) with a coefficient of -0.016% per unit point. So if consumer confusion increases with one unit point on the seven point Likert scale, the price premium a consumer is willing to pay for an organic label decreases with -0.016%. Both regression 1a and 1b show that skepticism and distrust do not have significant negative effects on willingness to pay.

The regression in Table 1c shows that consumer confusion does not have a significant negative effect on fair trade labels (0.113). Instead, the variable "skepticism" has a significant negative effect (0.007) with a coefficient of -0.007% per unit point. So if skepticism increases with one unit point on the seven point Likert scale, the price premium a consumer is willing to pay for a fair trade label decreases with -0.007%.

In regression 1d which models willingness to pay for recycling labels, no significant negative effect can be seen resulting from the variables consumer confusion (0.514), skepticism (0.125) or distrust (0.756). At first sight, this might seem surprising, but it must be noted that this regression only contains 77 observations. In other words, only 77 of our total 386 observations were the least willing to pay for recycling labels, a small number when compared to the other samples. We might therefore infer there is no significant effect stemming from confusion, skepticism or distrust, because few consumers are unwilling to pay for recycling labels.

Based on the results described above, we can answer hypothesis 1.

Hypothesis 1: Consumers are unwilling to pay more for products with eco-labels due to consumer confusion rather than because of skepticism or distrust.

The results indicate that consumer confusion is associated with low willingness to pay for animal labels and organic labels (regressions 7a and 7b), but this does not hold for low willingness to pay for fair trade labels and recycling labels. It appears that skepticism is associated low willingness to pay for fair trade labels (regression 7c), while the cause for low willingness to pay for recycling labels remains unclear (regression 7d). Hypothesis 1 is therefore only true with regard to animal labels and organic labels. Also important, we can confirm our suggestion concerning hypothesis 1 that consumer confusion is the most important cause of low willingness to pay for eco-labels.

4.2 Testing hypotheses 2, 3, 4, 5 and 6

To investigate which source of confusion causes consumer confusion concerning animal labels and organic labels, two new regressions will be employed; one regression for each labels. Each regression will have consumer confusion as dependent variable and sources of confusion as independent variables. We aim to gain insight into which sources of confusion are significantly positively related to consumer confusion. The regressions are shown below, regression 3a concerns animal labels and regression 3b concerns organic labels.

N=109
R-squared=0,458

Regression 3a.	Variable	Coefficient	Std. Errorp-value	p-value
	X_{Choice}	0.025	0.003	**0.015***
	X_{Simila}	0.021	0.002	**0.041****
	X_{Inform}	0.013	0.009	0.244
	$X_{Lack.I}$	0.015	0.005	0.452
	X_{Incons}	0.002	0.004	0.388

    a.   Dependent variable: Consumer confusion
    b.   Sample: Willingness to pay for animal labels
    c.   White heteroscedasticity-consistent standard errors were used.

N=103
R-squared=0,589

Regression 3b.	Variable	Coefficient	Std. Errorp-value	p-value
	X_{Choice}	0.021	0.001	0.152
	X_{Simila}	0.019	0.001	0.287
	X_{Inform}	0.055	0.000	**0.001***
	$X_{Lack.I}$	0.015	0.005	0.452
	X_{Incons}	0.002	0.004	0.380

a. Dependent variable: Consumer confusion
b. Sample: Willingness to pay for organic labels
c. White heteroscedasticity-consistent standard errors were used.

Regarding animal labels, regression 3a demonstrates that choice overload and similarity overload have a significant positive effect on consumer confusion, indicating they are significantly positively related to consumer confusion. There is therefore consumer confusion over animal labels due to choice overload and similarity overload.

In the case of organic labels, regression 3b proves that information overload has a significant positive effect on consumer confusion, and that there is consumer confusion over organic labels due to information overload.

Based on the results discussed above, we can elaborate on hypotheses 2, 3, 4, 5 and 6.

Hypothesis 2:   There is consumer confusion over eco-labels due to choice overload.

Hypothesis 3:   There is consumer confusion over eco-labels due to similarity overload.

Hypothesis 4:   There is consumer confusion over eco-labels due to information overload.

Hypothesis 5:   There is consumer confusion over eco-labels because they lack information.

Hypothesis 6:   There is consumer confusion over eco-labels because they are utilized inconsistently.

The results show there is consumer confusion over animal labels because of choice overload and similarity overload. Hypotheses 2 and 3 are therefore only true with regard to animal labels, but not regarding all eco-labels. Hypothesis 4 is true with respect to organic labels, where it appears that consumer confusion persists due to information overload. There are no indications that hypothesis 5 and 6 are true to any extent.

4.3 Testing hypothesis 7

In this section and the upcoming sections, the role of green consumer characteristics will be investigated. Looking at animal labels, we want to investigate if female, highly educated or socially involved green consumers will show a stronger positive relationship between choice overload, similarity overload and consumer confusion. With organic labels, a similar test will be run to see if the same characteristics make the relationship between information overload and consumer confusion stronger.

This section focuses on hypothesis 7: "The positive relationship between the sources of confusion and consumer confusion over eco-labels is stronger when the green consumers are female than when they are male." Two regressions will be used: 3a, showing the positive relationships between choice overload, similarity overload and consumer confusion over animal labels, and 3b, which depicts the positive relationship between information overload and consumer confusion over organic labels.

Regression 3a will be extended twice, first by adding the variable "male" ($X_{Gen}=0$) and last by adding the variable "female" ($X_{Gen}=1$). The regressions can then be compared to see whether the positive relationship between consumer confusion, choice overload and similarity overload becomes stronger when green consumers are female compared to when they are male.

Similarly, regression 3b will also be extended two times by adding the variables "male" ($X_{Gen}=0$) and "female" ($X_{Gen}=1$). Doing so allows for the comparison of the regressions to see whether the positive relationship between consumer confusion and information overload becomes stronger when green consumers are female rather than male.

The four regressions discussed are tabulated below.

Regression 4a.

R-squared=0.788

Variable	Coefficient	Std. err.	p-value
X_{Choice}	0.027	0.013	**0.000***
X_{Simila}	0.006	0.013	0.643
$X_{IF.o}$	0.011	0.009	0.289
$X_{Lack.I}$	0.014	0.005	0.344
X_{Incons}	0.000	0.004	0.542
$X_{Gen}=0$			

Regression 4b.

R-squared=0.534

Variable	Coefficient	Std. err.	p-value	p-value 3a
X_{Choice}	0.025	0.000	0.432	0.015 ←
X_{Simila}	0.021	0.000	**0.031***	0.041 ←
$X_{IF.o}$	0.052	0.007	0.298	0.244
$X_{Lack.I}$	0.010	0.002	0.363	0.452
X_{Incons}	0.000	0.002	0.519	0.388
$X_{Gen}=1$				

a. Dependent variable: Consumer confusion
b. Sample: Willingness to pay for animal labels
c. White heteroscedasticity-consistent standard errors were used.
d. Controlling for the variables $X_{Age}, X_{Inc}, X_{Geo}, X_{lear}, X_{V.ani}, X_{V.lif}, X_{V.rec}, X_{V.fai}$ and X_{libe}

Regressions 4c.

R-squared=0.653

Variable	Coefficient	Std. err.	p-value
X_{Choice}	0.021	0.004	0.379
X_{Simila}	0.004	0.009	0.312
X_{Inform}	0.050	0.009	**0.001****
$X_{Lack.I}$	0.000	0.003	0.319
X_{Incons}	-0.002	0.001	0.545
$X_{Gen}=0$			

Regression 4d.

R-squared=0.774

Variable	Coefficient	Std. err.	p-value	p-value 3a
X_{Choice}	0.017	0.002	0.365	0.152
X_{Simila}	0.014	0.003	0.439	0.287
X_{Inform}	0.047	0.009	**0.001****	0.001 ←
$X_{Lack.I}$	0.000	0.003	0.286	0.452
X_{Incons}	-0.001	0.001	0.490	0.380
$X_{Gen}=1$				

a. Dependent variable: Consumer confusion

b. Sample: Willingness to pay for organic labels
c. White heteroscedasticity-consistent standard errors were used.
d. Controlling for the variables $X_{Age}, X_{Inc}, X_{Geo}, X_{lear}, X_{V.ani}, X_{V.lif}, X_{V.rec}, X_{V.fai}$ and X_{libe}

Regressions 4a and 4b show a positive relationship between choice overload, similarity overload and consumer confusion over animal labels after controlling for male and female green consumers. The p-value of regression 3a is included on the far-right side; this is the p-value without controlling for gender.

Looking at regression 4b, one can see that choice overload among female green consumers has become insignificant (p-value of 0.432, compared to 0.015), while regression 4a shows that choice overload among male green consumers has become more significant (p-value of 0.000, compared to 0.015). However, the opposite is true for similarity overload: similarity overload becomes more significant when the green consumers are female (p-value of 0.031, compared to 0.041), while similarity overload among male green consumers becomes less significant (p-value of 0.643, compared to 0.041).

In sum, the relationship between choice overload and consumer confusion over animal labels becomes stronger when the green consumers are male, while the relationship between similarity overload and consumer confusion over animal labels becomes stronger when the green consumers are female.

Furthermore, regressions 4c and 4d indicate that after controlling for gender, the p-values of all variables remain the same as the p-values for regression 3b. In other words, female green consumers do not make the positive relationship between information overload and consumer confusion stronger when compared to male green consumers.

Based on the results discussed above, hypothesis 7 can be answered:

Hypothesis 7: The positive relationship between the sources of confusion and consumer confusion over eco-labels is stronger when the green consumers are female than when they are male.

With regard to animal labels, the relationship between choice overload and consumer confusion become stronger when the green consumers are male, while the positive relationship between similarity overload and consumer confusion becomes stronger when the green consumers are female. Regarding organic labels, the relationship between information overload and consumer confusion does not change based on gender.

4.4 Testing hypothesis 8

This section investigates hypothesis 8: "The positive relationship between the sources of confusion and consumer confusion among eco-labels is stronger when green consumers are highly educated than when they are less educated." As above, regressions 3a and 3b will be used, showing the positive relationships between choice overload, similarity overload and consumer confusion over animal labels (3a) and the positive relationship between information overload and consumer confusion over organic labels (3b).

Regression 3a will be extended twice by controlling for less educated green consumers (Regression 3a will be extended twice by controlling for less educated green-consumers ($X_{Edu}=1$; $X_{Edu}=2$; $X_{Edu}=3$; $X_{Edu}=4$) and for highly educated green-consumers ($X_{Edu}=5$; $X_{Edu}=6$; $X_{Edu}=7$). This allows for the comparison of the regressions to study whether the positive relationship between choice overload, similarity overload and consumer confusion becomes stronger when the green-consumers are more highly educated.

Regression 3b will be extended similarly by controlling for less educated green-consumers ($X_{Edu}=1$; $X_{Edu}=2$; $X_{Edu}=3$; $X_{Edu}=4$) and for highly educated green-consumers ($X_{Edu}=5$; $X_{Edu}=6$; $X_{Edu}=7$). After this, the regressions can be compared to see whether the positive relationship between information overload and consumer confusion becomes stronger when the green-consumers are more highly educated.

The four regressions discussed are shown below.

Regression 5a.

R-squared=0.875

Variable	Coefficient	Std. err.	p-value
$X_{CH.o}$	0.029	0.039	0.472
$X_{SI.o}$	0.078	0.032	**0.035***
$X_{IF.o}$	0.009	0.008	0.382
$X_{Lack.I}$	0.011	0.004	0.381
X_{Incons}	0.001	0.007	0.435

$X_{Edu} < 5$

Regression 5b.

R-squared=0.353

Variable	Coefficient	Std. err.	p-value	p-value 3a
$X_{CH.o}$	0.014	0.009	**0.012***	0.015 ←
$X_{SI.o}$	0.009	0.009	0.328	0.041 ←
$X_{IF.o}$	0.052	0.007	0.400	0.244
$X_{Lack.I}$	0.010	0.002	0.378	0.452
X_{Incons}	0.000	0.002	0.418	0.388

$X_{Edu} \geq 5$

 a. Dependent variable: Consumer confusion
 b. Sample: Willingness to pay for animal labels
 c. White heteroscedasticity-consistent standard errors were used.
 d. Controlling for the variables $X_{Age}, X_{Inc}, X_{Geo}, X_{lear}, X_{V.ani}, X_{V.lif}, X_{V.rec}, X_{V.fai}$ and X_{libe}

Regression 5c.

Regression 5d.

R-squared=0.824 | R-squared=0.617

Variable	Coefficient	Std. err.	p-value	Variable	Coefficient	Std. err.	p-value	p-value 3a
X_{Choice}	0.028	0.001	0.329	X_{Choice}	0.013	0.007	0.245	0.152
X_{Simila}	0.009	0.011	0.388	X_{Simila}	0.013	0.008	0.401	0.287
X_{Inform}	0.018	0.011	**0.001*** **	X_{Inform}	0.052	0.007	**0.001*** **	0.001 ←
$X_{Lack.I}$	0.012	0.002	0.319	$X_{Lack.I}$	0.010	0.002	0.269	0.452
X_{Incons}	-0.001	0.002	0.501	X_{Incons}	0.000	0.002	0.506	0.380
$X_{Edu} < 5$				$X_{Edu} \geq 5$				

a. Dependent variable: Consumer confusion
b. Sample: Willingness to pay for organic labels
c. White heteroscedasticity-consistent standard errors were used.
d. Controlling for the variables $X_{Age}, X_{Inc}, X_{Geo}, X_{lear}, X_{V.ani}, X_{V.lif}, X_{V.rec}, X_{V.fai}$ and X_{libe}

Regressions 5a and 5b show the positive relationship between choice overload, similarity overload and consumer confusion over animal labels after controlling for the education level of the green consumers. The p-value of regression 3a is shown on the far-right side; this is the p-value without controlling for education.

As shown in regression 5a, choice overload among less educated consumers has become insignificant (p-value of 0.472, compared to 0.015), while regression 4b shows that choice overload among highly educated green consumers has increased in significance (p-value of 0.012, compared to 0.015). Similarity overload, however, shows an opposite pattern, with similarity overload becoming more significant among less educated green consumers (p-value 0.035, compared to 0.041) and similarity overload among highly educated green consumers becoming more insignificant (p-value of 0.328, compared to 0.041).

In short, the relationship between choice overload and consumer confusion among animal labels becomes stronger when the green consumers are highly educated, while the relationship between similarity overload and consumer confusion becomes stronger when the green consumers are less educated.

Furthermore, regressions 5c and 5d show that after controlling for education, the p-values have remained the same as in regression 3b. This means that highly educated green consumers do not make the positive relationship between information overload and consumer confusion stronger compared to less educated green consumers.

The above results provide an answer to hypothesis 8:

Hypothesis 8: The positive relationship between the sources of confusion and consumer confusion among eco-labels is stronger when green consumers are highly educated than when they are less educated.

When it comes to animal labels, the relationship between choice overload and consumer confusion becomes stronger when the green consumers are highly educated, while the positive relationship between similarity overload and consumer confusion becomes stronger when they are lower educated. With organic labels, the relationship between information overload and consumer confusion does not change based on the education of the green consumer.

4.5 Testing hypothesis hypothesis 9

This section focuses on hypothesis 9: "The positive relationship between the sources of confusion and consumer confusion over eco-labels is stronger when green consumers are socially involved than when they are not socially involved." The same regressions will be used as above, showing the positive relationships between choice overload, similarity overload and consumer confusion over animal labels (3a) and the positive relationship between information overload and consumer confusion over organic labels (3b).

Regression 3a will be extended twice to control for green consumers who are thought not to be very socially involved ($X_{Soci}=1$; $X_{Soci}=2$; $X_{Soci}=3$; $X_{Soci}=4$) and for those who are thought to be socially involved individuals ($X_{Edu}=5$; $X_{Edu}=6$; $X_{Edu}=7$). Once this is done, the regressions will be compared to see whether the positive relationship between choice overload, similarity overload and consumer confusion becomes stronger when the green consumers are socially involved and weaker when they are not.

In like manner, regression 3b will be extended two times: first by controlling for green consumers who are not very socially involved ($X_{Soci}=1$; $X_{Soci}=2$; $X_{Soci}=3$; $X_{Soci}=4$) and secondly by controlling for those who are socially involved people ($X_{Edu}=5$; $X_{Edu}=6$; $X_{Edu}=7$). After this, a comparison of the regressions will show whether the positive relationship between information overload and consumer confusion becomes stronger when the green consumers are socially involved.

The four pertinent regressions can be found below.

Regression 6a.

R-squared=0.691

Variable	Coefficient	Std. err.	p-value
$X_{CH.o}$	0.010	0.015	0.503
$X_{SI.o}$	0.038	0.015	**0.014****
$X_{IF.o}$	0.019	0.014	0.297
$X_{Lack.I}$	0.016	0.006	0.319
X_{Incons}	0.003	0.009	0.503
$X_{Soci} < 5$			

Regression 6b.

R-squared=0.503

Variable	Coefficient	Std. err.	p-value	p-value 3a
$X_{CH.o}$	0.035	0.012	**0.005*****	0.015 ←
$X_{SI.o}$	0.005	0.010	0.598	0.041 ←
$X_{IF.o}$	0.052	0.007	0.305	0.244
$X_{Lack.I}$	0.010	0.002	0.394	0.452
X_{Incons}	0.000	0.002	0.617	0.388
$X_{Soci} \geq 5$				

a. Dependent variable: Consumer confusion
b. Sample: Willingness to pay for animal labels
c. White heteroscedasticity-consistent standard errors were used.
d. Controlling for the variables $X_{Age}, X_{Inc}, X_{Geo}, X_{lear}, X_{V.ani}, X_{V.lif}, X_{V.rec}, X_{V.fai}$ and X_{libe}

Regression 6c.

R-squared=0.824

Variable	Coefficient	Std. err.	p-value
X_{Choice}	0.015	0.006	0.384
X_{Simila}	0.003	0.007	0.566
$X_{IF.o}$	0.018	0.011	0.131
$X_{Lack.I}$	0.000	0.001	0.222
X_{Incons}	0.000	0.001	0.541
$X_{Edu} < 5$			

Regression 6d.

R-squared=0.617

Variable	Coefficient	Std. err.	p-value	p-value 3a
X_{Choice}	0.014	0.004	0.478	0.152
X_{Simila}	0.006	0.005	0.509	0.287
$X_{IF.o}$	0.052	0.007	**0.000*****	0.001 ←
$X_{Lack.I}$	0.000	0.001	0.376	0.452
X_{Incons}	0.000	0.001	0.499	0.380
$X_{Edu} \geq 5$				

a. Dependent variable: Consumer confusion
b. Sample: Willingness to pay for organic labels
c. White heteroscedasticity-consistent standard errors were used.
d. Controlling for the variables $X_{Age}, X_{Inc}, X_{Geo}, X_{lear}, X_{V.ani}, X_{V.lif}, X_{V.rec}, X_{V.fai}$ and X_{libe}

Regression 6a and 6b indicate the positive relationship between choice overload, similarity overload and consumer confusion over animal labels after controlling for green consumers who are not very socially involved and green consumers who are thought to be more socially involved. The p-value of regression 3a is included on the far-right side; this is the p-value without controlling for social involvement.

Looking at regression 6a, one can see that choice overload has become insignificant (p-value of 0.503, compared to 0.015), while regression 6b shows that choice overload has become more significant (p-value of 0.005, compared to 0.015). The opposite is true, however, with regard to similarity overload, which becomes more significant in regression 6a (p-value 0.014, compared to 0.041) but becomes even more insignificant in regression 6b (p-value of 0.598, compared to 0.041).

In sum, the relationship between choice overload and consumer confusion over animal labels becomes stronger when the green consumers are socially involved, while the relationship between

similarity overload and consumer confusion becomes stronger when the green consumers are considered not to be socially involved.

Furthermore, a comparison of regressions 6c and 6d shows that the positive relationship between information overload and consumer confusion becomes more significant when the green consumers are socially involved (p-value changes from 0.001 to 0.000), compared to when the green consumers are not socially involved (p-value becomes insignificant, from 0.001 to 0.131)

Based on the results discussed, hypothesis 9 can be answered:

Hypothesis 9:   The positive relationship between the sources of confusion and consumer confusion over eco-labels is stronger when green consumers are socially involved than when they are not socially involved.

With regard to animal labels, the relationship between choice overload and consumer confusion becomes stronger when the green consumers are socially involved, while the positive relationship between similarity overload and consumer confusion becomes stronger when they are not socially involved. Regarding organic labels, the relationship between information overload and consumer confusion becomes stronger when the green consumers are socially involved.

CHAPTER 5

* * * * *

Conclusion

To investigate the causes of low willingness to pay for eco-labels and what role green-consumer characteristics play in this matter data was gathered, manipulated, and there were executed multiple regression analyses. In this chapter we summarize all conclusions and answer the research question.

This thesis found that there exists low willingness to pay for animal, organic, fair trade labels and recycling labels. With regard to animal and organic-labels, we found that higher consumer confusion is associated with low willingness to pay, but when it comes to fair trade labels, we found that skepticism is associated with low willingness to pay. However, only few consumers have low willingness to pay for recycling labels and there were no effects of skepticism, distrust or confusion among this label.

Since our area of interest is aimed at consumer confusion, we investigated which sources of confusion are associated with confusion over animal labels and organic labels. We did not investigate why skepticism is associated with low willingness to pay for fair trade labels or why few consumers were have low willingness to pay for recycling labels.

In this thesis we found that not all sources of confusion are associated with consumer confusion among animal labels and organic labels. In particular, we found some choice and similarity overload were positively associated with consumer confusion over animal labels, while information overload was positively associated with consumer confusion over organic labels. The sources lack of information and inconsistency appear not to be associated with consumer confusion over animal or organic labels.

With regard to the green consumer characteristics gender, education and social involvement, we found these influence consumers' susceptibilities for choice overload, similarity overload and consumer confusion among animal labels, and for information overload and consumer confusion among organic labels, too. We will first elaborate on animal labels, thereafter on organic labels.

We conclude that male green consumers are more susceptible for choice overload, while female green consumers are more susceptible for similarity overload. Both genders are found to experience confusion equally when encountering animal-labels.

When it comes to the characteristic education, we come with interesting conclusions. With respect to animal labels, we infer that high educated green consumers are more susceptible for choice overload, while lower educated green consumers are more susceptible for similarity overload. Hence, we cannot conclude that high educated green consumers are more likely to experience confusion than low educated green consumers, or vice versa. What we can conclude, is that high as well as low educated green consumers become confused when animal labels are encountered, but for different reasons.

Somewhat similar can be concluded with regard to the characteristic social involvement. We conclude that socially involved green consumers are more susceptible for choice overload, while les socially involved green consumers are more susceptible for similarity overload. In other words, similar to gender and education, we conclude that socially involved as well as les socially involved green consumers become confused when animal labels are encountered, but for different reasons.

In sum, regarding animal labels: male, high educated and socially involved green consumers experience confusion mostly due to their susceptibility for choice overload; female, low educated and les socially involved green consumers experience confusion mostly due to their susceptibility for similarity overload. Interesting indeed.

As for organic labels, we found that gender, the educational level or the social involvement of the green consumer does not resolve its susceptibility for information overload, and therefore consumer confusion. There are found no effects.

With our findings stated above, we can now answer our research question:

"What factors are associated with low willingness to pay for eco-labels, and what is the role of green consumer characteristics in this matter?"

We conclude consumer confusion is associated with lower willingness to pay for animal and organic, while consumers distrust is associated with low willingness to pay for fair trade labels. When it comes to animal labels, consumer confusion is stronger positively associated with choice overload when green consumers are male, high educated and socially involved, and stronger positively associated with

similarity overload when green consumers are female, low educated and not very socially involved. With regard to organic labels, we conclude consumer confusion is positively associated with information overload, although this phenomenon is not strengthened by any green consumer characteristic.

CHAPTER 6

* * * * * *

Discussion

Some conclusions of this study need to be discussed because they need more explanation, could have been investigated differently or they are not in line with earlier findings from the scholarly literature.

In the literature review we cited several studies that investigated the causes of consumers' low willingness to pay for eco-labels. We cited studies of Horne (2009) and Brécard (2014), suggesting that consumers are not willing to pay for eco-labels due to confusion, and we found this is true regarding animal and organic labels. We cited studies of Delmas, Nairn-Birch and Balzarova (2013), and Walker and Wan (2012), suggesting that consumers are unwilling to pay for eco-labels due to skepticism, and we concluded this is true regarding fair trade labels. What is most important, however, our research shows that we cannot exclude either of these findings; they are justified with regard to different eco-labels. This study contributes to a holistic view of what factors are associated with low willingness to pay for eco-labels.

Since we were interested in consumer confusion, we investigated which sources of confusion cause confusion over animal and organic labels.

We conclude that choice and similarity overload cause consumer confusion over animal labels. The fact that choice overload causes confusion over animal labels, is in line with what Lucas, Pichot and Salladarré (2012) concluded in their research. However, the fact that similarity overload causes confusion over animal labels can be regarded as surprising, because Tang, Fryzell and Chow (2004) suggested that similarity overload would be particularly present among recycling-labels (Appendix A). A possible explanation why similarity overload causes confusion over animal labels rather than recycling labels, was offered by Thøgersen, Haugaard and Olesen (2010). They argue that both animal as well as recycling labels create similarity overload, however, similarities among animal labels create confusion because these labels also profuse, while similarities among recycling labels do not create confusion as these labels also contain similar meanings.

When it comes to information overload, we find this to be the cause for consumer confusion among organic labels, which is perfectly in line with what Rashid (2009) found in his study.

Interestingly enough, we also found that some sources of confusion are not present among animal and organic labels. The scholarly literature offers several possible explanations for this.

With regard to lack of information, this appeared not to effect confusion among animal or organic labels. An explanation for lack of information not being present among animal labels can be found in a study of Dodds, Monroe and Grewal (1991). They suggested that lack of information is an event occurring when consumers have only few products in their consideration set, but need more information to make their final choice. This might explain why there is no lack of information among animal labels, since there exists choice overload among animal labels. A clear and obvious explanation for lack of information not being present among organic labels would be the fact there is information overload among these labels.

Lastly, this study concludes there are no effects of the source inconsistency. This might be explained by looking at a study of Laufer (2003). He concluded that confusion due to inconsistency rarely occurs, because the presence of inconsistency is often an incident (such as the Unilever slogan) rather than a structural problem consumers face. Hence, we deem there are no effects of the source inconsistency among animal and organic labels, because confusion among these labels would be a structural problem. We also consider the findings of this study useful for scholars that aim to write studies build on the findings of Laufer.

This study intended to further explain the presence of consumer confusion by investigating the role of green consumer characteristics. Yet, some scholars might argue that green consumer segments would be better at explaining the presence of consumer confusion, since there are studies indicating the existence of consumer segments that are susceptible for consumer confusion (Drummond and Rule, 2005; Ottman, 2011). However, since scholarly literature remains inconclusive if these segments also apply to green consumer, we deem that green consumers' characteristics were still good at explaining the presence of consumer confusion among eco-labels.

Despite the decision we made, we do recommend scholars to investigate the role of green consumer segments along consumer confusion among eco-labels, because it is much easier for marketers to apply the guidelines solving consumer confusion to green consumer segments than to green consumers with particular characteristics.

CHAPTER 7
* * * * * * *
Limitations

Along with interesting findings, this study also brings several limitations, and they refer to the measurement of dependent variables, independent variables, and methodologies applied. These limitations are chosen because they are deemed important to understand for marketing managers before adopting any conclusions. After all, the goal of this thesis is to help marketing managers on the roadmap towards increasing willingness to pay for eco-labels.

Dependent variables

This study measures willingness to pay for eco-labels with a limited number of animal, organic, fair traded and recyclable products that together not represent all products from the supermarket. So it could be the case there are many animal or organic products containing eco-labels for which consumer are willing to pay without experiencing any confusion. Despite the fact, however, we still deem the chosen products are sufficient in representing most products with eco-labels in the supermarket, since they are very often bought and daily encountered by consumers.

In addition, willingness to pay for eco-labels was measured by asking respondents how much they are "willing to pay for products if they would contain eco-labels". However, the questionnaire did not mention what kind of eco-labels these products would contain: It might for instance be the case that when a consumer was offered an animal food product, he would report his willingness to pay for recycling labels. In other words, the questionnaire assumes that consumers report their willingness to pay for e.g. animal labels, while they might think about other labels. This counts for every product group asking about willingness to pay for eco-labels.

In light of the previous limitation, a third limitation arises. Because even if a consumer would consider e.g. animal labels when reporting his willingness to pay for animal food products, we still do not know about which animal label the consumer considers. It could be one out of many existing animal labels. Readers of this study might therefore think this study lacks an in-depth explanation for which exact animal, organic or fair trade label consumers have low willingness to pay. We believe this is an inevitable implication arising from the large scope of this study.

Independent variables

In the questionnaire, there was one question asking consumers to report their level of skepticism, distrust and confusion for the product group they were least willing to pay for the eco-labels. Unfortunately, it might be the case a consumer miscalculates in which product group he/she was least willing to pay, and therefore report their level of skepticism, distrust or confusion for eco-labels for the product group they were not least willing to pay. The questionnaire could not control for these mistakes.

Methodology

The last important implication refers to the methodology used for this study, namely: questionnaires. Although we presume questionnaires are suitable for delving into consumers' beliefs about eco-labels, it remains unclear if their self-reported motives for low willingness to pay are true. A consumer might be biased and therefore think he knows why he is not willing to pay for an eco-label. To control for these biases we recommend scholars to use neuromarketing methodologies, as they are better at explaining the true causes of consumers' low willingness to pay for eco-labels. This is particularly important given the psychological character of consumer confusion. However, since neuromarketing tools are expensive and not applicable on a large scale, we deem using self reported data for this investigation to be useful.

The reader of this thesis should take into account the limitations of metrics and methodologies applied. We recommend scholars to use more profound and comprehensive questionnaires on a large scale, or advanced neuroscientific methodologies on a small scale, to control for these limitations when it comes to future writings.

CHAPTER 8

* * * * * * * * *

Managerial Guidelines

To support marketers with increasing willingness to pay for the eco-label they are utilizing, this thesis offers several managerial guidelines. In particular, these guidelines could help marketers to overcome choice and similarity overload among animal labels, and information overload among organic labels. These guidelines are offered below.

Choice overload is difficult to overcome for marketers since this phenomenon is caused by NGO's who carry out a multitude of eco-labels. However, this should not discourage marketers, as there are still possibilities to force NGO's to change the situation.

First, we recognize there are too many NGO's that carry out eco-labels and we propose NGO's should work together and conduct one eco-label covering their mutual interests. This is particularly important for NGO's with similar interests employing eco-labels within the same market. Marketers could take the lead in this by bringing these NGO's together and act as a mediating party. Secondly, we also recommend every NGO to bring back the number of eco-labels they offer, by composing one eco-label that covers the interest of all their labels. Marketers can play an active role in this process by increasing the environmental quality of their product and opt for many eco-labels at once; this may force NGO's to offer one eco-label instead of many eco-labels.

However, it might still be the case that NGO's are unwilling to reduce the number of labels. In such case we advise marketers to consult NGO's on how to conduct particular eco-labels among distinct product categories, so eco-labels can be better recognized by consumers.

Since the visual branding of eco-labels often lies in the hands of NGO's, it remains difficult for marketers to overcome similarity overload. We recognize this matter but believe marketers can solve this.

Due to the non-competitive character of eco-labels their designs are not distinctive enough which creates similarities among another. NGO's should therefore learn from marketers how to create eco-labels that operate as competitive and distinctive brands. We recommend marketers to strengthen the dialogue, to teach and consult NGO's about this affair, to become more involved in the branding

process of eco-labels. In particular, we recommend marketers to teach and consult NGO's on two matters, these matters include concretizing and categorization.

Concretizing. When eco-labels have similar designs, consumers will think that the outcome of choosing for one or another eco-label will be somewhat similar. Consumers need to understand the difference of choices and understand what the consequences are of choosing for another eco-label. This can be realized when eco-labels have designs that have a concrete meaning were they stand for and where they lead to. Marketing managers with branding knowledge can consult NGO's about this.

Categorization. The last important point that can help overcome similarities among eco-labels would be to categorize eco-labels with symbols or colors. For instance, using blue symbols for seafood while using green colors for forest animals. When colors are well used, consumers are able to categorize eco-labels better, to make choices faster and more deliberate. This solution might seem obvious, but it must be noted that 87% of eco-labels have a design with green colors, as it is believed that eco-labels are associated with 'green' products (X).

We believe these actions are useful for marketers that aim to consult NGO's on how to overcome similarities among eco-labels. However, consulting NGO's about these actions is no walk in the park and we advise marketers to first establish a strong dialogue with NGO's.

As mentioned, information overload is caused by informational eco-label programs that are often setup by NGO's or governmental organizations. We recommend marketers to advise these institutions on how to deploy eco-label programs better so information overload does not persist. In particular, marketers must stress five factors about informational programs when advising NGO's, these factors include timing, media type, quality, conciseness, and context.

Timing. NGO's must recognize that there is a lot of information rushing at consumers nowadays and it is difficult to grab their attention. In other words, the frequency and flow of information is very high nowadays. We therefore recommend marketers to advise NGO's to setup campaigns on momentums when the frequency of information towards consumers is low, so consumers can be reached more easily and absorb more information. An example of such momentum could be the beginning of the week; consumers are more capable of absorbing large loads of information on Mondays because their mind lost large loads of information during the weekend. We deem it is necessary marketers stress the importance of timing when advising NGO's how programs should be conducted.

Media type. NGO's should also recognize which media types come with information overload. Social media can be a useful tool to message specific consumers about eco-labels, but scholars have proved that many consumers are easily overloaded with information when they engage social media (Gomez-Rodriguez, Gummadi and Schoelkopf, 2014). We recommend marketers to investigate which media types come with less information overload and consult NGO's about these media types. A possible as well as effective media type would be to promote eco-label programs with the use of blogs. Evidence suggests that most consumers are relaxed, attentive and often not distracted when they read blogs, which increases consumers' ability to learn compared to other media types (Huffaker and Calvert, 2005).

Quality and conciseness. Other important factors causing information overload in informational programs could be the quality of content and the degree of conciseness. NGO's must conduct eco-label campaigns with informational messages that are shot, concise, qualitative and clear. Informational messages should be easily recognized and understood because consumers have very short attention nowadays. We stress the importance of marketers consulting NGO's about this matter.

Context. The last important factors that could cause information overload in informational programs could be the use of the wrong context. When NGO's promote eco-label programs during action movies, they will not be recognized and only cause information blur. An effective context to promote eco-labels could be e.g. cooking programs on television. We advise marketers to consult NGO's in what context eco-label programs can be best promoted.
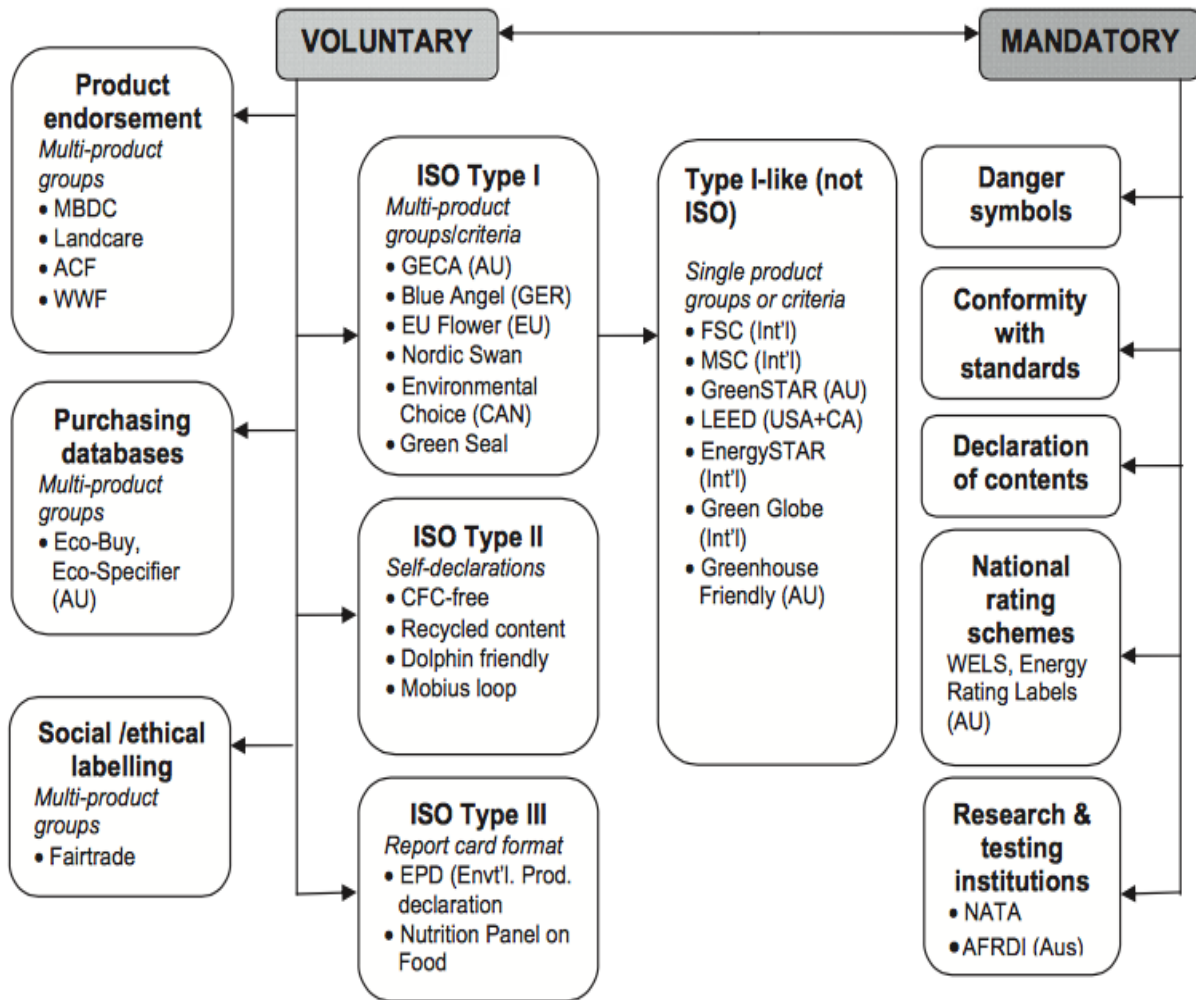
Thank you for participating in my master thesis. This questionnaire should only take 7 minutes to complete. Be assured that all asnwers you provide will be kept in strict confidentiality

Please answer how much you agree with the following statements

Mankind is severely abusing the environment.

Mankind was not created to rule over the rest of nature

Humans do not have the right to modify the natural environment to suit their needs.

When humans interfere with nature, it often produces disastrous consequences.

The balance of nature is very delicate and easily upset.

Please answer how much you agree with the following statements

I have purchased products because they cause less pollution to the environment

I purchase environmentally friendly products frequently.

I have switched products for ecological reasons.

If I understand the potential damage to the environment that some products can cause, I do not purchase these products.

It is likely I would pay more for an environmentally friendly product than a cheaper alternative.

How much more are you willing to pay for animal food products if it would contain an eco-label?

Chicken (300g) - standard price 3 euros: _____

Beef (300g) - standard price 1.97 euros: _____

Tuna (160g) - standard price 1.67 euros: _____

Salmon (160g) - standard price 4.96 euros: _____

Eggs (10 pack) - standard price 1.99 euros: _____

How much more are you willing to pay for an organic food product (e.g fruit and vegetables) if it would contain an eco-label?

Bananas (1kg) - standard price 1,89 euros: _____

Apples Jonagold (1.5kg) - standard price 2,29 euros: _____

Oranges (2kg) - standard price 2,75 euros: _____

Beans (150g) - standard price 1,50 euros: _____

Peppers (75g) - standard price 1,29 euros: _____

Tomatoes (500g) - standard price 0,97 euros: _____

How much more are you willing to pay for a fair traded product if it would contain an eco-label?

Chocolate (100g) - standard price 0,99 euros: _____

Bananas (1kg) - standard price 1,89 euros: _____

Tea (35g) - standard price 0,91 euros: _____

Filter Coffee (500g) - standard price 2,99 euros: _____

Wine (0.75l) - standard price 2,49 euros: _____

Honey (450ml) - standard price 2,65 euros: _____

How much more are you willing to pay for a recycable product if it would contain an eco-label?

Trash bags (20 bags of 35L) - standard price 0.99 euros: _____

Soda bottles (e.g. Fanta 1L) - standard price 1.58 euros: _____

Detergent containers (liquid) - standard price 2.89 euros: _____

For the productgroup mentioned above for which you were least willing to pay more for an eco-label, what is the reason that you are not willing to pay more for an eco-label on these products? Please answer how much you agree with the following statements

I am skeptical if eco-labels on these products can help nurture sustainability.

I suspect the companies of those products of utilizing eco-labels unrightfully.

I do not understand what all of the eco-labels mean.

Considering all of the eco-labels is too much effort when I'm shopping.

I am not sure if eco-labels are able to fulfil my environmental concerns.

Please report how much you agree with the following statement, with regard to the eco-labels you were least willing to pay for? Divide 100 points among the four answers.

There are too many alternatives to choose from.

The symbols look very similar.

There is too much information on the label I need to consider.

The eco-label does not express sufficient information.

The purpose of the label is not in line with how the products are produced or can be consumed.

The claims or messages of labels are often very similar.

There are too many choices I need to consider.

There is too much information around labels I need to consider.

I need more information when I consider my choices.

My beliefs about a brand or company are different from the values that eco-labels express.

Please answer how much you agree with the following statements

I am a person that likes to learn about the environment.

I search for information about environmental issues.

Please answer how much you agree with the following statements

I care much about animals.

I try not to eat food produced from animals.

I value an upmost natural way of living.

I try to not consume products that are genetically manipulated.

I value low waste with regard to my consumerism.

I belief that strong resource efficiency will to protect the environment.

I appreciate companies that partner up with suppliers from poor countries, without overexploiting them.

I think it is important that companies take responsibility for their actions in poor countries.

Please answer how much you agree with the following statements

I am for less government regulation of business.

I am against a federal health insurance program covering men and women of all ages.

The federal government shouldn't control the profits of the big industries.

If unemployment is high, the government shouldn't spend to create jobs.

Please answer how much you agree with the following statements

I am a person with an above average amount of friends on facebook.

I am a person that is very busy with chatting on whatsapp during the day.

I am a person that likes to do things together with people.

I am a person that likes to share shopping experiences with friends.

What is your gender?

- Female
- Male

What is you age?

- 15-20
- 20-25
- 25-30
- 30-35
- 35-40
- 45-50
- 50-55

- 55-60

What is the highest education level you finished, or currently engaging?

- Primary school
- Secondary school
- Vocational education/MBO
- Pre-University College/HBO (BA)
- University (BSc)
- University (MSc)
- MBA
- PhD
- None

How high is your monthly net-income (after taxes)?

- <500
- 500-1000
- 1000-1500
- 1500-2000
- 2000-2500
- 3000-3500
- 3500-4000
- 4000-4500
- 4500-5000
- 5000-5500
- >5500

Where do you live?

- Country side
- Suburbs
- In the city center

LITERATURE

Ackerman, N. M. (1989). Money resources, time demands, and situational factors as predictors of shopping time. International Journal of Consumer Studies, 13(1), 1-19.

Anderson Jr, W. T., Henion, K. E., & Cox III, E. P. (1974, August). Socially vs. ecologically responsible consumers. In *AMA Combined Conference Proceedings* (Vol. 36, No. Spring and Fall, pp. 304-311).

Atkinson, L., & Rosenthal, S. (2014). Signaling the green sell: the influence of eco-label source, argument specificity, and product involvement on consumer trust. *Journal of Advertising*, *43*(1), 33-45.

Balabanis, G., & Craven, S. (1997). Consumer confusion from own brand lookalikes: an exploratory investigation. *Journal of marketing management*, *13*(4), 299-313.

Banerjee, B., & McKeage, K. (1994). How green is my value: exploring the relationship between environmentalism and materialism. *NA-Advances in Consumer Research Volume 21*.

Bearman Jr, L. (1960). Caveat Emptor in Sales of Realty--Recent Assaults Upon the Rule. *Vand. L. Rev.*, *14*, 541

Becchetti, L., & Rosati, F. C. (2007). Global social preferences and the demand for socially responsible products: empirical evidence from a pilot study on fair trade consumers. *The world economy*, *30*(5), 807-836.

Belk, R. W. (1975). Situational variables and consumer behavior. *Journal of Consumer research*, *2*(3), 157-164.

Bleda, M., & Valente, M. (2009). Graded eco-labels: a demand-oriented approach to reduce pollution. *Technological Forecasting and Social Change*, *76*(4), 512-524.

Brécard, D. (2014). Consumer confusion over the profusion of eco-labels: Lessons from a double differentiation model. *Resource and energy economics*, *37*, 64-84.

Brécard, D., Lucas, S., Pichot, N., & Salladarré, F. (2012). Consumer preferences for eco, health and fair trade labels. An application to seafood product in France. *Journal of Agricultural & Food Industrial Organization*, *10*(1)

Broniarczyk, S M (2008). "Product Assortment and Consumer Psychology".

Buchanan, J. M. (1970). In defense of caveat emptor. *The University of Chicago Law Review*, *38*(1), 64-73.

Calder, B. J., Phillips, L. W., & Tybout, A. M. (1981). Designing research for application. *Journal of consumer research*, *8*(2), 197-207.

Castka, P., & Corbett, C. J. (2016). Governance of eco-labels: Expert opinion and media coverage. *Journal of Business Ethics*, *135*(2), 309-326.

Chan, R. Y. (1999). Environmental attitudes and behavior of consumers in China: Survey findings and implications. *Journal of International Consumer Marketing*, *11*(4), 25-52.

Chaudhuri, A., & Holbrook, M. B. (2001). The chain of effects from brand trust and brand affect to

brand performance: the role of brand loyalty. *Journal of marketing*, *65*(2), 81-93.

Chevalier, J. A., & Mayzlin, D. (2006). The effect of word of mouth on sales: Online book reviews. *Journal of marketing research*, *43*(3), 345-354.

Chun, Y., & Bidanda, B. (2013). Sustainable manufacturing and the role of the International Journal of Production Research. *International Journal of Production Research*, *51*(23-24), 7448-7455.

Comwell, T. B., & Schwepker Jr, C. H. (1995). Ecologically concerned consumers and their product purchases. *Environmental marketing: strategies, practice, theory, and research*, 119.

Craig, C. S., & McCann, J. M. (1978). Assessing communication effects on energy conservation. *Journal of consumer research*, *5*(2), 82-88.

Crespi, J. M., & Marette, S. (2005). Eco-labelling economics: Is public involvement necessary. *Environment, information and consumer behavior*, 93-110.

De Pelsmacker, P., & Janssens, W. (2007). A model for fair trade buying behaviour: The role of perceived quantity and quality of information and of product-specific attitudes. *Journal of business ethics*, *75*(4), 361-380.

Delmas, M. A., & Burbano, V. C. (2011). The drivers of greenwashing. *California Management Review*, *54*(1), 64-87.

Delmas, M. A., Nairn-Birch, N., & Balzarova, M. (2013). Choosing the right eco-label for your product. *MIT Sloan Management Review*, *54*(4), 10.

Delmas, M. A., & Lessem, N. (2017). Eco-Premium or Eco-Penalty? Eco-labels and quality in the organic wine market. *Business & Society*, *56*(2), 318-356.

de Mortanges, C. P., & Rad, A. T. (1998). Marketing strategy and market value:: An event-study analysis. *European Management Journal*, *16*(3), 365-371.

Didier, T., & Lucie, S. (2008). Measuring consumer's willingness to pay for organic and Fair Trade products. *International Journal of Consumer Studies*, *32*(5), 479-490.

Dodds, W. B., Monroe, K. B., & Grewal, D. (1991). Effects of price, brand, and store information on buyers' product evaluations. *Journal of marketing research*, 307-319.

Drummond, G., & Rule, G. (2005). Consumer confusion in the UK wine industry. *Journal of Wine Research*, *16*(1), 55-64.

do Paço, A. M. F., Raposo, M. L. B., & Leal Filho, W. (2009). Identifying the green consumer: A segmentation study. *Journal of Targeting, Measurement and Analysis for Marketing*, *17*(1), 17-25.

Economides N. 1997. Trademarks, Department of Economics Working Paper Series. New York University.

Elliott, M. T., & Speck, P. S. (1998). Consumer perceptions of advertising clutter and its impact across

various media. *Journal of advertising research*, *38*(1), 29-30.

European Commission (2007) *Eco-label Flower week 2006*, Special Eurobarometer 275/Wave 66.3 – TNS Opinion & Social.

Foxman, E. R., Berger, P. W., & Cote, J. A. (1992). Consumer brand confusion: A conceptual framework. *Psychology & Marketing*, *9*(2), 123-141.

Foxman, E. R., Muehling, D. D., & Berger, P. W. (1990). An investigation of factors contributing to consumer brand confusion. *Journal of Consumer Affairs*, *24*(1), 170-189.

Freudenburg, W. R. (1991). Rural-Urban differences in environmental concern: A closer look. *Sociological inquiry*, *61*(2), 167-198.

Galarraga Gallastegui, I. (2002). The use of eco-labels: a review of the literature. *European Environment*, *12*(6), 316-331.

Gertz, R. (2005). Eco-labelling—a case for deregulation?. *Law, Probability and Risk*, *4*(3), 127-141.

Gilg, A., Barr, S., & Ford, N. (2005). Green consumption or sustainable lifestyles? Identifying the sustainable consumer. *Futures*, *37*(6), 481-504.

Gomez-Rodriguez, M., Gummadi, K. P., & Schoelkopf, B. (2014, March). Quantifying Information Overload in Social Media and Its Impact on Social Contagions. In *ICWSM* (pp. 170-179).

Gooch, G. D. (1995). Environmental beliefs and attitudes in Sweden and the Baltic states. *Environment and behavior*, *27*(4), 513-539.

Green, E. H. (2002). Ideologies of conservatism: conservative political ideas in the twentieth century. Oxford University Press, USA.

Heitmann, M., Lehmann, D. R., & Herrmann, A. (2007). Choice goal attainment and decision and consumption satisfaction. *Journal of marketing research*, *44*(2), 234-250.

Henninger, C. E. (2015). Traceability the new eco-label in the slow-fashion industry?—consumer perceptions and micro-organisations responses. *Sustainability*, *7*(5), 6011-6032.

Hirsch, P. M., Friedman, R., & Koza, M. P. (1990). Collaboration or paradigm shift?: Caveat emptor and the risk of romance with economic models for strategy and policy research. *Organization Science*, *1*(1), 87-97.

Hock, T. (2001). The role of eco-labels in international trade: can timber certification be implemented as a means to slowing deforestation. *Colo. J. Int'l Envtl. L. & Pol'y*, *12*, 347.

Horne, R. E. (2009). Limits to labels: The role of eco-labels in the assessment of product sustainability and routes to sustainable consumption. *International Journal of Consumer Studies*, *33*(2), 175-182.

Huffaker, D. A., & Calvert, S. L. (2005). Gender, identity, and language use in teenage blogs. *Journal of Computer-Mediated Communication*, *10*(2), 00-00.

Jacoby, J., Kohn, C. A., & Speller, D. E. (1973). Time spent acquiring product information as a function of information load and organization. In *Proceedings of the Annual Convention of the American Psychological Association*. American Psychological Association.

Jacoby, J., & Hoyer, W. D. (1989). The comprehension/miscomprehension of print communication: selected findings. *Journal of Consumer Research*, *15*(4), 434-443.

Kangun, N., & Polonsky, M. J. (1995). Regulation of environmental marketing claims: a comparative perspective. *International Journal of Advertising*, *14*(1), 1-24.

Kinnear, T. C., Taylor, J. R., & Ahmed, S. A. (1974). Ecologically concerned consumers: who are they?. *The Journal of Marketing*, 20-24.

Kristensen, K., & Grunert, S. C. (1994). The green consumer: some Danish evidence. *Xingxiao Pinglun*.

Langer, A., & Eisend, M. (2007). The impact of eco-labels on consumers: Less information, more confusion?. *E-European Advances in Consumer Research Volume 8*.

Laroche, M., Kim, C., & Zhou, L. (1996). Brand familiarity and confidence as determinants of purchase intention: An empirical test in a multiple brand context. *Journal of business Research*, *37*(2), 115-120.

Laufer, W. S. (2003). Social accountability and corporate greenwashing. *Journal of business ethics*, *43*(3), 253-261.

Lee, B. K., & Lee, W. N. (2004). The effect of information overload on consumer choice quality in an on-line environment. *Psychology & Marketing*, *21*(3), 159-183.

Locander, W. B., & Hermann, P. W. (1979). The effect of self-confidence and anxiety on information seeking in consumer risk reduction. *Journal of Marketing Research*, 268-274.

Lohr, L. (1998). *Welfare effects of eco-label proliferation: Too much of a good thing?* (No. 16642). University of Georgia, Department of Agricultural and Applied Economics.

Loken, B., Ross, I., & Hinkle, R. L. (1986). Consumer" confusion" of origin and brand similarity perceptions. *Journal of Public Policy & Marketing*, 195-211.

Loureiro, M. L., McCluskey, J. J., & Mittelhammer, R. C. (2001). Assessing consumer preferences for organic, eco-labeled, and regular apples. *Journal of agricultural and resource economics*, 404-416.

Loureiro, M. L., & Lotade, J. (2005). Do fair trade and eco-labels in coffee wake up the consumer conscience?. *Ecological economics*, *53*(1), 129-138.

Lumpkin, J. R., Hawes, J. M., & Darden, W. R. (1986). Shopping patterns of the rural consumer: Exploring the relationship between shopping orientations and outshopping. *Journal of Business Research*, *14*(1), 63-81.

MacDonald, M., & Dunbar, I. (1998). *Market segmentation: how to do it-how to profit from it*. Macmillan.

Maloney, M. P., Ward, M. P., & Braucht, G. N. (1975). A revised scale for the measurement of ecological

attitudes and knowledge. *American psychologist*, *30*(7), 787.

Menon, A., & Menon, A. (1997). Enviropreneurial marketing strategy: the emergence of corporate environmentalism as market strategy. *The Journal of Marketing*, 51-67.

Miaoulis, G., & d'Amato, N. (1978). Consumer confusion & trademark infringement. *The Journal of Marketing*, 48-55.

Mitchell, V. W., & Papavassiliou, V. (1999). Marketing causes and implications of consumer confusion. *Journal of Product & Brand Management*, *8*(4), 319-342.

Mitchell, V. W., Walsh, G., & Yamin, M. (2005). Towards a conceptual model of consumer confusion. *NA-Advances in Consumer Research Volume 32*.

Montoro Rios, F. J., Luque Martinez, T., Fuentes Moreno, F., & Cañadas Soriano, P. (2006). Improving attitudes toward brands with environmental associations: an experimental approach. *Journal of Consumer Marketing*, *23*(1), 26-33.

Moon, S. J., Costello, J. P., & Koo, D. M. (2017). The impact of consumer confusion from eco-labels on negative WOM, distrust, and dissatisfaction. *International Journal of Advertising*, *36*(2), 246-271.

Myers, J. H. (1996). Segmentation and positioning for strategic marketing decisions. American Marketing Association.

Ottman, J. (2011). The new rules of green marketing: Strategies, tools, and inspiration for sustainable branding. Berrett-Koehler Publishers.

Pickett, G. M., Kangun, N., & Grove, S. J. (1993). Is there a general conserving consumer? A public policy concern. *Journal of Public Policy & Marketing*, 234-243.

Peattie, K., & Crane, A. (2005). Green marketing: legend, myth, farce or prophesy? *Qualitative Market Research: An International Journal*, *8*(4), 357-370.

Poiesz, T. B., & Verhallen, T. M. (1989). Brand confusion in advertising. *International Journal of Advertising*, *8*(3), 231-244.

Price, M. C., & Norman, E. (2008). Intuitive decisions on the fringes of consciousness: Are they conscious and does it matter?. *Judgment and Decision Making*, *3*(1), 28.

Prothero, A. (1990). Green consumerism and the societal marketing concept: marketing strategies for the 1990's. *Journal of Marketing Management*, *6*(2), 87-103.

Rashid, N. R. N. A. (2009). Awareness of eco-label in Malaysia's green marketing initiative. *International Journal of Business and Management*, *4*(8), 132.

Salladarré, F., Brécard, D., Lucas, S., & Ollivier, P. (2016). Are French consumers ready to pay a premium for eco-labeled seafood products? A contingent valuation estimation with heterogeneous anchoring. *Agricultural Economics*.

Samdahl, D. M., & Robertson, R. (1989). Social determinants of environmental concern specification and test of the model. *Environment and behavior*, *21*(1), 57-81.

Schlegelmilch, B. B., Bohlen, G. M., & Diamantopoulos, A. (1996). The link between green purchasing decisions and measures of environmental consciousness. *European journal of marketing*, *30*(5), 35-55.

Scott, M. B. (1963). The social sources of alienation. *Inquiry*, *6*(1-4), 57-69.

Shukla, P., Banerjee, M., & Adidam, P. T. (2010). Antecedents and consequences of consumer confusion: Analysis of the financial services industry. *NA-Advances in Consumer Research Volume 37*.

Sirieix, L., Delanchy, M., Remaud, H., Zepeda, L., & Gurviez, P. (2013). Consumers' perceptions of individual and combined sustainable food labels: a UK pilot investigation. *International Journal of Consumer Studies*, *37*(2), 143-151.

Svenson, O., & Maule, A. J. (Eds.). (1993). Time pressure and stress in human judgment and decision making.

Tang, E., Fryxell, G. E., & Chow, C. S. (2004). Visual and verbal communication in the design of eco-label for green consumer products. *Journal of International Consumer Marketing*, *16*(4), 85-105.

Teisl, M. F., Roe, B., & Hicks, R. L. (2002). Can eco-labels tune a market? Evidence from dolphin-safe labeling. *Journal of Environmental Economics and Management*, *43*(3), 339-359.

Teisl, M. F., Rubin, J., & Noblet, C. L. (2008). Non-dirty dancing? Interactions between eco-labels and consumers. *Journal of Economic Psychology*, *29*(2), 140-159.

Testa, F., Iraldo, F., Vaccari, A., & Ferrari, E. (2015). Why Eco-labels can be Effective Marketing Tools: Evidence from a Study on Italian Consumers. *Business Strategy and the Environment*, *24*(4), 252-265.

Toffler, A. (1970). Future shock, 1970. *Sydney. Pan.*

Thøgersen, J., Haugaard, P., & Olesen, A. (2010). Consumer responses to ecolabels. *European Journal of Marketing*, *44*(11/12), 1787-1810.

Turnbull, P. W., Leek, S., & Ying, G. (2000). Customer confusion: The mobile phone market. *Journal of Marketing Management*, *16*(1-3), 143-163.

Van Amstel, M., Driessen, P., & Glasbergen, P. (2008). Eco-labeling and information asymmetry: a comparison of five eco-labels in the Netherlands. *Journal of Cleaner Production*, *16*(3), 263-276.

Vandermerwe, S., & Oliff, M. D. (1990). Customers drive corporations. *Long Range Planning*, *23*(6), 10-16.

Walker, K., & Wan, F. (2012). The harm of symbolic actions and green-washing: Corporate actions and communications on environmental performance and their financial implications. *Journal of business ethics*, *109*(2), 227-242.

Walsh, G. (1999). *German consumer decision-making styles with an emphasis on consumer confusion* (Doctoral dissertation)

Webster, F. E. (1975). Determining the characteristics of the socially conscious consumer. *Journal of consumer research*, *2*(3), 188-196.

Worcester, R. M. (1993). Public and elite attitudes to environmental issues. *International Journal of Public Opinion Research*, *5*(4), 315-334.

Young, W., Hwang, K., McDonald, S., & Oates, C. J. (2010). Sustainable consumption: green consumer behaviour when purchasing products. *Sustainable development*, *18*(1), 20-31.

Youssef, A. B., & Abderrazak, C. (2009). Multiplicity of eco-labels, competition, and the environment. *Journal of agricultural & food industrial organization*, *7*(2).

Zhuang, G., Tsang, A. S., Zhou, N., Li, F., & Nicholls, J. A. F. (2006). Impacts of situational factors on buying decisions in shopping malls: an empirical study with multinational data. *European Journal of Marketing*, *40*(1/2), 17-43.